

The breed-specific breeding strategy for the Irish Soft Coated Wheaten Terrier

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Translated into English by Maria Heikkinen, BA; Anna-Leena Hilli, BA; Laura Nummela, BA; Laura Pakarinen, BA, and Niina Woolley, BA, as project work for English Translation, University of Helsinki. Project coordinator: Mari Pakkala-Weckström, PhD, University Lecturer.

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1 SUMMARY

The Irish Soft Coated Wheaten Terrier is an old Irish breed that has been a general purpose dog around the farms of southern Ireland for centuries.

Today, around 150–190 Wheaten Terriers are registered in Finland every year. The total population in Finland amounts to about 1600 dogs. The breed is based on the same Irish ancestry all around the world, and therefore all Wheaten Terriers are quite closely related. A significant amount of Finnish breeding combinations are based on imported sires. Preserving genetic diversity and maintaining a low inbreeding coefficient is a challenge.

The Wheaten Terriers in Finland are generally affectionate, lively and active, but also calm family dogs. There is some timidity and aggression towards other dogs, and in some cases towards humans, and other faults in temperament. The significance of character in breeding should be highlighted more.

Irish Soft Coated Wheaten Terriers are generally healthy dogs and usually live a long life, but like all breeds, Wheaten Terriers have some hereditary diseases and faults. Renal dysplasia (RD) is a fatal disease that occurred in the 70s and 80s due to tight line-breeding. The first confirmed RD cases in Finland occurred in 1985, when several puppies of one litter died of this disease. The breed society started a monitoring program the following year, and Finland can be considered the forerunner in the fight against RD as there have been no new cases after 1994. However, a new problem arose in the 1990s as a result of new breeding dogs imported from the USA; protein-losing disorders (PLE/PLN). These disorders are harder to prevent because of their late onset, usually at the age of 4 to 6. Despite a comprehensive American research the mode of inheritance is not known for sure. Every year some new cases of protein-losing disorder occur.

As for hip dysplasia (HD), 23% of Wheaten Terriers screened in the last ten years suffered from mildly or moderately dysplastic hip joints. Elbow joint examinations have become significantly more general during the past four years. Of the examined Wheaten Terriers, 19% showed signs of 1st or 2nd degree changes in their elbow joints. When it comes to eye diseases, some hereditary cataract cases have occurred in the 21st century. In addition to this, one litter suffered from Multiple Ocular Anomalies Syndrome in 2011, and there have been some cases of PRA, although the latest was in 1991. The reproduction of Wheaten Terriers usually goes without problem. The average litter size is 6 puppies.

According to the breed standard, the Irish Soft Coated Wheaten Terrier is by general appearance a hardy, active, short coupled and well-built dog, giving the idea of strength. They should not be too leggy or too low to the ground. A single coat is one of the breed's characteristics, and an adult Wheaten should have a full, silky soft coat that is wavy or softly curled. In Finland, the differences between the two fur colours of Wheaten Terriers have evened out during recent years thanks to a general rise in coat quality.

The first breeding regulation was accepted in the annual meeting of the Breeding Committee in 1991, and since then the breed has had a breed-specific breeding strategy. The regulation of breeding has been based on recommendations and guidelines without the need for strong orders. Breeder members have followed breeding regulations and recommendations well. The latest regulation from 2007 has worked well, but it needs some clampdowns on the matters of health surveys and the use of individual breeding dogs, as well as increasing the importance of character and behaviour in breeding.

The development of the inbreeding coefficient towards a lower yearly mean has been positive for the last 15 years. The target coefficient of 8% (CompuPed 8 generations) has so far been achieved in only two years. During the last decennium one male has sired more than the target level of 5% of puppies. An

increasing number of breeding combinations meet the recommendations on blood/urine tests as well as eye and hip examinations. Cases of elbow dysplasia support a recommendation for elbow joint examinations for breeding dogs.

The target program aims for a Wheaten Terrier that is physically and mentally healthy and meets the characteristics of the breed. Wheaten Terriers should continue to fulfil their position as affectionate pet dogs that are suitable for various activities.

The key target of breeding is to keep the breeding stock of Irish Soft Coated Wheaten Terriers as large as possible. To achieve this goal, inbreeding and Matador breeding are avoided and different dogs are used evenly to keep as many lines as possible vital. The breeding we do today will be the basis of breeding in the future. It is recommended that males are used for breeding evenly throughout their life. The use of older males is recommended from the points of view of progeny evaluation and protein losing disorders.

As for character, the main target is to breed good-tempered Wheaten Terriers adaptable to modern day life and various activities. In the future, the character of Wheaten Terriers should be evaluated and tested on a wider basis in order to compile an ideal character profile for the breed.

When it comes to health, the main target of breeding is to maintain the levels of renal dysplasia (RD) and PRA and add the prevention of elbow dysplasia and Multiple Ocular Anomalies Syndrome to the recommendations. The prevention of hip dysplasia (HD), hereditary cataract, and protein losing disorders (PLN/PLE) will continue by screening breeding dogs for these diseases.

The main target for appearance is an Irish Soft Coated Wheaten Terrier that meets the breed standards.

The target program states the means to meet these goals. These include breeding recommendations, following the breed's status by collecting information and compiling and publishing statistics, educating breeders and judges, MH-testing (Mental Description), and international collaboration. In addition, we examine the risks concerning the breed and present the ways for the follow-up of the target program. The responsibility of breeders in guiding new owners, in puppy care and training is highlighted.

2 BACKGROUND ON THE WHEATEN TERRIER

2.1 History

The Irish Soft Coated Wheaten Terrier is an old Irish breed. For centuries, it has been a general purpose dog in the farms of southern Ireland, where farmers used Wheaten Terriers to kill vermin and help with the work about the farm. The breed was used for a long time in the difficult job of hunting badgers and otters.

The history of the Irish Soft Coated Wheaten Terrier has been somewhat obscured by its closeness to the other Irish Terrier breeds. The Wheaten Terrier is probably the oldest of the four breeds. Its existence for at least 200 years can be inferred from textual references to "soft coated" dogs. The relation of the modern Irish Terrier to the Wheaten Terrier, though less well documented, appears to have been the result of deliberate breeding experiments. So the humble Wheaten Terrier probably has a fairly mixed ancestry. Despite the long history of the breed, it was not until 1937 that the Wheaten Terrier was officially recognised by the Irish Kennel Club. The breed has grown steadily in popularity since and is now well known worldwide. [FCI-Standard N° 40 / 25. 04. 2001 / GB]

2.2 Wheaten Terriers around the world

Even though the Irish Soft Coated Wheaten Terrier was not recognised until 1937, a major breakthrough happened after mid 70s when the breed was granted a championship status in the UK and it was recognised in the USA. After this, the breed's popularity increased, and today Wheaten Terriers are especially popular in the USA and in Sweden. There are some Wheaten Terriers in Canada, Europe, Australia, and Russia, among others, and the breed is probably known worldwide.

Along the original Irish line, American and British lines have emerged. These lines have the same Irish ancestry, and a high level of inbreeding is a general problem.

2.3 Breeding beginnings in Finland

The first Wheaten Terrier arrived in Finland 1963 from Ireland, and the first litter was born in 1965. In the 70s, supplemental dogs came from Sweden, Ireland, and the UK. These lines are visible in the pedigree of modern dogs, with supplemental dogs from many places, such as the USA and Germany.

2.4 History and development of Wheaten Terriers in Finland

The breeding of Irish Soft Coated Wheaten Terriers began in 1965 with a litter of two dogs from Ireland. During the next decade, more and more Wheaten Terriers were registered every year, 1979 being the first year with 50 Wheaten Terriers registered. Wheaten Terriers gained more breeders, and dogs were imported from Ireland, the UK and Sweden. By the 80s the breed was widely known. In 1985 there were over 100 new registrations and even more breeders were starting out. The line was made stronger by imported dogs from the above mentioned countries as well as the USA and Germany. Back then the division between the two different types of coat was quite clearly visible. In the past few years the differences between coat types have evened out thanks to a general rise in coat quality. During the 1990s the breed's popularity settled to be around 150 to 190 registrations per year. In 2010, the Irish Soft Coated Wheaten Terrier was the 82nd most popular breed in Finland.

3 CLUB ORGANISATION AND ITS HISTORY

The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland (Kerry- ja vehnäterrierikerho ry) was founded in 1975 and has been a breed club under Finland's Terrier organisation between 1975 and 1989. The club has been a registered breed association since 1989. At the end of 2010, the club had 1439 members, including breeders and owners of both Kerry Blue Terriers and Irish Soft Coated Wheaten Terriers.

Organisation of the Breeding Committee: The Breeding Committee is responsible for the practicalities of breeding Irish Soft Coated Wheaten Terriers. The Committee includes 3-5 members and 1-2 specialist members. The term of office is five years. The board verifies directives of the Committee and puppy referral. The work of the Breeding Committee focuses on collecting and publishing information and advising and training breeders, future breeders, owners of male dogs, and others interested in the matter.

The Breeding Committee does not give recommendations on sires, but it processes breeding advice requests from breeders. These requests must include the breeder's own suggestions for sires (1–3), and the request must be made at least two months prior to the planned mating. The Breeding Committee will give information on the planned combinations and the possible risks included. The Breeding Committee can, among other things, calculate the inbreeding coefficient, note the known carriers of diseases or faults on the pedigree and inform on other possible matters known to the Committee that may affect the use of the suggested combination. The final decision is made by the breeder, who has the right to choose the male and who will also be responsible for the outcome. Every year the Committee processes a few breeding advice requests and calculates dozens of inbreeding coefficients.

4 THE BREED TODAY

4.1 Structure of the population and breeding stock

The hereditary diversity of the breed means the alleles are plentiful, i.e. the breeding stock is large. The more diverse a breed is, the more versions of the same gene it has. This enables heterozygotic genes that give the breed general vitality and protect them against many hereditary faults and diseases. Diversity is also important for the immune system where a narrow gene pool may lead to inflammatory diseases, autoimmune diseases and allergies. Breeding and hereditary progression are possible only if there is genetic variation within the breed.

Even a numerous breed can have restricted diversity if only a small number of the dogs and lines are used for breeding, or if the breed has dogs with too many offspring compared to the total number of dogs. These kinds of dogs will, little by little, spread their genes to the entire breed, and a gene version may result in a new breed-specific condition or a hereditary disease. Eventually it will be difficult to find dogs without this gene version for breeding purposes.

In an ideal situation breeding will not rule out more than 50% of litters or more than the percentage of the breed that is calculated by dividing 1 by the breed's average litter size times two. If the breed's litter size is 5, 40% of the breed's dogs should be used for breeding ($1/5 \times 2 = 0.4$).

To secure diversity, a restriction for the allowed number of puppies per dog is 5% in breeds that are few in number and 2–3% in numerous breeds in relation to registrations during four years. If 1000 dogs are registered during a four-year period, a single dog shouldn't have more than 20–50 puppies. In no breed are more than 100 puppies allowed for a single dog. Second-generation puppies allowed for a dog do not exceed 10% in breeds few in number or 4–6% in numerous breeds in relation to registrations during four years. (Mäki.)

4.1.1 Structure of the population and inbreeding

The Irish Soft Coated Wheaten Terrier has gained a stable popularity in Finland. Every year 163 dogs on average are registered. During the last decennial, 248 litters were born, sired by 112 different males and mothered by 175 different dams. On a yearly basis, 20 sires and 25 dams are used for breeding purposes. Altogether there are on average 1600 Wheaten Terriers in Finland.

Table 1. Registrations 1996–2010 (KoiraNet)

Year	Registrations	Litters	Imports	Breeders	Age of breeding, male	Age of breeding, female	Inbreeding% 8 generations
2010	161	26	8	20	4 y 5 m	3 y 9 m	8.9
2009	167	24	11	19	4 y 9 m	4 y	8.9
2008	156	22	11	16	4 y	3 y 8 m	7.9
2007	193	28	12	22	3 y 10 m	4 y 1 m	8.6
2006	139	21	7	16	4 y 3 m	3 y 5 m	8.4
2005	134	20	9	17	3 y 2 m	4 y 2 m	7.5
2004	166	25	11	19	3 y 5 m	4 y 4 m	10.4
2003	192	28	4	23	3 y 9 m	4 y 3 m	8.4
2002	191	27	11	22	4 y 5 m	4 y 8 m	9.3
2001	155	27	3	20	4 y 8 m	4 y 8 m	11.2
2000	150	25	4	19	3 y 9 m	4 y 4 m	10.5
1999	143	25	2	23	3 y 6 m	3 y 10 m	12
1998	153	23	6	21	3 y 8 m	4 y 4 m	10.7
1997	170	34	3	29	3 y 7 m	4 y 1 m	12.3
1996	170	30	7	24	4 y 8 m	4 y 5 m	13.8

Table 1b. Inbreeding coefficient CompuPed / 8 generations

Inbreeding%	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	total
< 6,2	2	5	10	6	9	9	11	8	7	8	75
6,3-9,4	9	11	7	6	5	4	4	6	9	11	72
9,5-12,4	9	4	3	4	3	2	9	5	4	1	44
12,5-15,9	3	4	6	6	1	4	2	1	1	2	30
16-19,9	3	3	2	2	2	2	1	2	3	4	24
20-24,9	1						1				2
25 <				1							1
Average %	11.2	9.3	8.4	10.4	7.5	8.4	8.6	7.9	8.9	8.9	9.0 /248

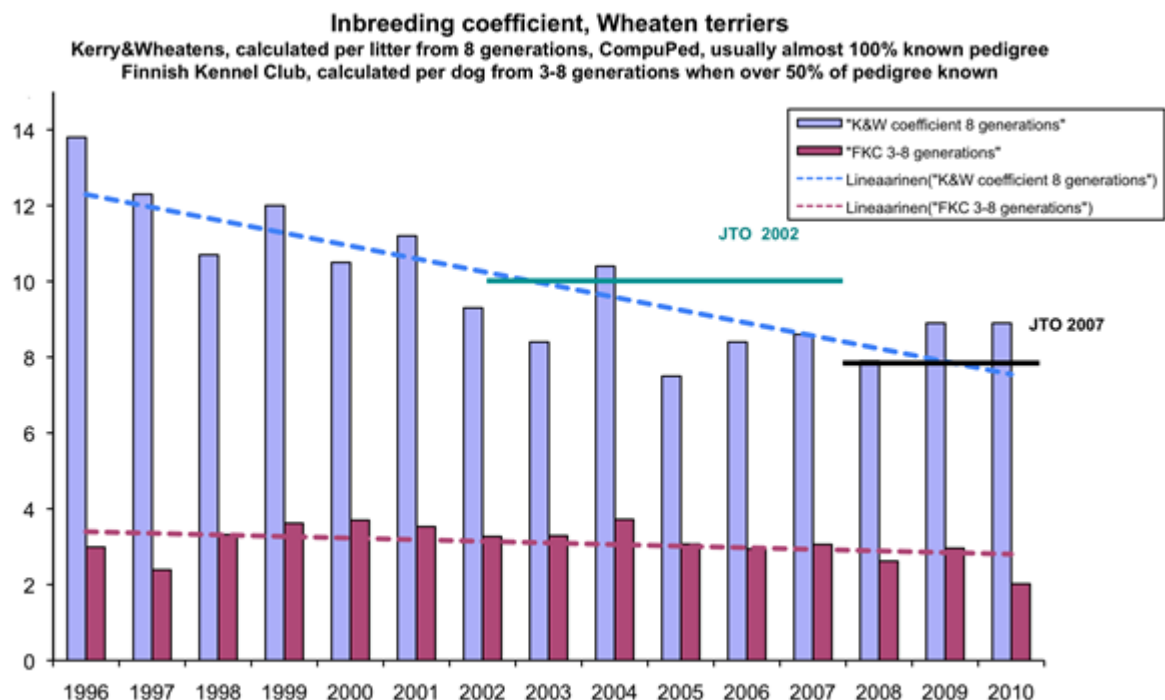
The inbreeding coefficient has improved significantly since the 1990s. During the mid-90s an average coefficient was almost 14, but in the last decennium it was 9. The breed-specific breeding strategy's current recommendation for inbreeding coefficient is 8, and this has been achieved in two years. However, it appears that further lowering the average coefficient would be difficult. Individual combinations can reach low coefficients by combining different lines, but due to the limited number of lines it is improbable that the yearly average would go further down in the short run.

For over a decade, The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland has calculated inbreeding coefficients from eight generations that are almost always perfect, i.e. the pedigrees don't lack any ancestors. When using the Finnish Kennel Club's KoiraNet breeding database, it should be taken into account that relatively many imported dogs have been used for breeding. The Kennel Club's database usually includes a pedigree of only three generations. Therefore KoiraNet may give a low inbreeding coefficient for a combination that, in fact, has a very high coefficient.

The general recommendation in breeding is keeping the inbreeding coefficient at under 6.25 when calculated from four to five generations. The inbreeding coefficient of Wheaten Terriers in 2010, for example, was notably lower, at 2.03 (8.87 when calculated from eight generations). Inbreeding from generations further back can be considered less harmful than inbreeding from close generations because of natural genetic variation. Therefore examining the five previous generations is especially important while planning breeding combinations.

Comparing the inbreeding coefficient of Finnish Wheaten Terriers to that of other countries is very difficult or almost impossible because there are few statistics on the development of average inbreeding coefficients. It is also important to note that coefficients between countries are not directly comparable since the number of generations used for calculation may not be the same, and the number of generations examined is not usually presented (in some cases there may be only three generations).

During the period of 2007–2010 the inbreeding coefficient of Irish Soft Coated Wheaten Terriers has varied between 1.2 and 23.4, with the average being 9.



K%W coefficient 8 generations
 FK% 3–8 generations
 Linear (K&W coefficient 8 generations)
 Linear (FKC 3–8 generations)

Inbreeding means that the male and the female are related more closely than cousins. The inbreeding coefficient or percentage is the chance that a randomly selected gene pair includes identical alleles (versions) that came from the same ancestor. An allele from an ancestor therefore reaches the dog from both the father's and the mother's side. This creates a homozygotic or identical gene pair. Without inbreeding, most of the gene pairs of an individual are heterozygotic, and harmful recessive alleles remain hidden under the dominant, normal allele.

A dog's inbreeding coefficient is half of that of its parents. With father/daughter pairings, the coefficient is 25%, with half-siblings it is 12.5%, and with first cousins it is 6.25%. Inbreeding reduces the number of heterozygotic alleles in each generation by the inbreeding coefficient, so pairing a half-sister and a half-brother reduces heterozygosity by 12.5%, for example. The probability of harmful, recessive problems arising is 12.5% in half-sister/half-brother offspring.

Dogs have been subjected to inbreeding when different breeds were created. Inbreeding is used to create homogeneous offspring that will, in turn, pass specific traits on to their offspring. While harmful alleles are doubled in inbreeding, so are the good ones. On the other hand, an inbred dog will pass on only half of its genotype, and beneficial homozygotic combinations of alleles are broken. In addition, each individual carries many harmful alleles in their genotype, and by inbreeding these are more likely to surface. Therefore there are no safe combinations of inbreeding.

Research has shown that the disadvantages of inbreeding begin to show after the inbreeding coefficient surpasses 10%. When this happens, the probability of decreased fertility and vitality increases and there are reproduction problems, puppy mortality, deformations, decreased resistance and tendency for infections and allergies. This is known as inbreeding recession. If the inbreeding coefficient grows slowly over many generations, the disadvantages are lesser than in fast inbreeding where close relatives are bred.

The inbreeding coefficient depends on the number of generations it is calculated from, so only the coefficients calculated from exactly the same background information are comparable. The breeding recommendation is to keep the coefficient calculated from four or five generations at under 6.25%. (Mäki)

4.1.2 Breeding stock

Table 2. Breeding stock 1996–2010. (KoiraNet)

Year	Litters	Sires	Dams	Sires / Dams	% of males for breeding	% of females for breeding	Effective population	Sires / dams generation	Effective population / generation
2010	26	24	26	0.92	0	0	34 (65%)	0.66	97 (48%)
2009	24	20	24	0.83	1	0	30 (62%)	0.65	87 (46%)
2008	22	19	22	0.86	4	3	28 (64%)	0.63	81 (45%)
2007	28	22	28	0.79	6	16	34 (61%)	0.63	85 (45%)
2006	21	18	21	0.86	10	23	27 (64%)	0.63	85 (45%)
2005	20	16	20	0.80	6	27	25 (62%)	0.67	91 (46%)
2004	25	18	25	0.72	9	17	30 (60%)	0.70	92 (43%)
2003	28	19	28	0.68	6	22	32 (57%)	0.71	86 (40%)
2002	27	22	27	0.81	11	14	33 (61%)	0.74	88 (42%)
2001	27	20	27	0.74	10	21	32 (59%)	0.75	85 (42%)
2000	25	16	25	0.64	14	15	28 (56%)	0.62	86 (40%)
1999	25	18	25	0.72	5	14	30 (60%)	0.54	87 (39%)
1998	23	19	23	0.83	15	24	29 (63%)	0.52	90 (37%)
1997	34	20	33	0.58	11	16	35 (51%)	0.56	95 (37%)
1996	30	17	30	0.57	6	18	32 (53%)	0.52	98 (37%)

The effective population size / generation is calculated for four-year periods. For example, the numbers for 2008 have been calculated from the period 2005–2008. The percentage next to the effective size shows the portion of the effective population from the maximum.

The effective population size is a calculated estimate of a breed's genetic diversity. A breed's diversity can also be estimated by molecular genetics, for example by the number of DLA haplotypes controlling the immune system and heterozygosity.

The effective size tells how many different individuals' genes contribute to a breed. For example the figure 50 means that 50 different dogs' genes contribute to the breed's genetic fluctuation. The smaller the effective size, the faster the breed's internal affinity grows, and avoiding inbreeding becomes difficult.

The effective size is always estimated for a generation. The length of a generation is four years for pet dogs and five years for working dogs. The rule of thumb is that the effective size is at most four times the number of males from different lines used for breeding. The best way to estimate the effective population size is based on the average growth of the inbreeding coefficient. If the pedigrees are not complete enough, a calculation based on the number of breeding dogs can be used. This is also used in The Finnish Kennel Club's breeding database KoiraNet. This, however, gives an overestimate of the effective population size because it assumes that the breeding dogs are not related and that they have even numbers of offspring.

If the effective size based on the growth of the inbreeding coefficient is less than 50–100, the breed is losing gene variants so quickly that nature cannot balance out the situation. Then the focus must be on preserving genes from as many individuals as possible by reusing them for breeding purposes. On the other hand, most breeds have lines abroad, and bringing in "new blood" is possible. However, many breeds have more or less the same gene material here and abroad. (Mäki)

Table 3. Males most used during 1996–2010 (KoiraNet)

#	Male	Year of birth	Litters	Puppies	cumulative %	2nd generation litters	2nd generation puppies	Litters total	Puppies total
1	Brookdene Springsteen (FRA) <i>(Made In Irland De La Tara – Brookdene Pensmoke Pippin)</i>	2001	13	91	4	14	87	13	91
2	Fairylake's Known As The Swede (SE) <i>(Carlinayer Star Studted Guy – Fairylake's Bright Eyes)</i>	1993	13	79	7	16	98	17	103
3	Down To Earth De La Richesse (NL) <i>(Adventurer Bon Jovi – Over The Moon De La Richesse)</i>	2001	11	66	10	11	67	11	66
4	Conall Von Der Schönen Lausitz (D) <i>(Maroc Na Sionna – Kasantra Vom Schweizerhof)</i>	2005	8	63	13	5	30	8	63
5	Grebello Be Gorgeous <i>(Never Lasting's A Star Is Born – Wheatstone Usva)</i>	2000	7	51	15	13	86	7	51
6	Jazz Dancer De Morrigan (NL) <i>(Wheaten My Love Excelsior -- Dance Of Isis Magic De Morrigan)</i>	2003	8	50	17	4	33	8	50
7	Red Devil De Morrigan (NL) <i>(Just Gwyndion De Morrigan – Caitrin Carleen De Morrigan)</i>	1994	8	46	19	10	62	8	46
8	Austronaut (S) <i>(Brösing's Invisible Mix – Fairylake's Jail Bait)</i>	1995	8	45	21	10	67	8	45
9	Armagh Alister Vom Sennhues (D) <i>(Inagh Ivo Vom Sennhues – Hilltown Hazel Vom Sennhues)</i>	1996	7	44	23	1	6	7	44
10	Never Lasting's A Star Is Born (D) <i>(Danterri Wheaten Kris – Wheaten Rebel's Kiki Dee)</i>	1995	7	44	25	40	223	7	44
11	Wheatstone Denzel <i>(Danterri Wheaten Man About Town – Wheatstone Wanda)</i>	1998	7	42	27	12	78	7	42
12	Wheatstone Forrest <i>(Wheaten Rebel's Walk On Top – Wheatstone True Colors)</i>	2000	7	40	28	2	7	7	40
13	Merry Blue Paddington <i>(Wheatstone Beau – Aughrim Aileen Vom Sennhues)</i>	1998	7	38	30	3	17	7	38
14	Movin On Ducati Desmo (SE) <i>(Andover Hoort Done It – Brösing's The Moonlight Dancer)</i>	1995	8	37	31	7	51	8	37
15	Newkilber Sunset On Sunset (USA) <i>(Danterri Wheaten Ode To Newkilber – Choroschie Drusja's Ninotchka)</i>	2002	6	37	33	5	41	6	37
	Brookdene U.R For Karafill (FRA) <i>(Villa Rosas Dun Drew Na Brookdene – Macfinn Mae)</i>	2003	6	37	35	2	17	6	37

During the examination period 35% of the puppies were sired by the 16 most used males. Of these males 12 are imports. Of the ones born in Finland all are the offspring of imported sires or dams. During the examination period 50% of the puppies were sired by the 28 most used males.

The limit of overuse is 46 puppies (7% of the generation's registrations).

Close relations are displayed by colour. *The lines longest separated from other lines are in italics.*

Table 4. Females most used during the examination period 1996–2010 (Koiranet)

#	Female	Year of birth	Litters	Puppies	2nd generation litters	2nd generation puppies
1	Enjoy The Best Colour (HR) (Choroschie Drusjas Darth Vader – Brösing's Rekord Holder)	1998	4	34	2	13
2	Röhvelin My Dream Maker (Embor De Yonsabalene - Röhvelin Private Dancer)	2000	4	34	1	6
3	Wheatstone True Colors (Andover Hoot Done It – Teinikedon Taalia)	1992	4	30	36	202
4	Röhvelin Take Your Heart (Fairylake's Known As The Swede – Gleanngay Lil Light O'Mine)	1995	5	30	7	51
5	Boundary Oak Dilber (Movin On Ducati Desmo – Boundary Oak Bel Canta)	1997	3	29	1	7
6	Cindy Lingz-Alm (SK) (Baltazar King Wheaten Darling – Cinsana Softik Kni-York)	2002	5	28	6	40
7	Major Wheat D's Tootsie (Wildflower Sage II – Major Wheat One In A Million)	1993	5	28	0	0
8	Brayson Delightful Girl (IRL) (Killykeen Sandyman – Brayson Briony)	1995	4	27	11	73
9	Wheatstone Helle (Elovainion Cosmos – Wheatstone True Colors)	2001	3	27	6	42
10	Wildwheat's Lilliann (Never Lasting's A Star Is Born – Wildwheat's Ginger Gilda)	1998	3	26	4	33
11	Brookdene Ultra Spice (FRA) (Villa Rosas Dun Drew Na Brookdene – Macfinn Mae)	2003	3	26	1	7
12	Röhvelin Spring Sun (Gleanngay Waggedy Andy – Fairylake's Here I Come)	1995	4	26	8	38
13	Wheatstone Carrera (Danterri Wheaten Man About Town – Wheatstone True Colors)	1997	3	26	2	16
14	Zarosan Lewanna (Erainn Madara Flann Foster - Brayson Delightful Girl)	1998	3	25	2	11
15	Wheatstone Usva (Wildflower Sage II – Wheatstone Nataalia)	1993	4	25	16	81

Close relations are displayed by colour. *The lines longest separated from other lines are in italics.*

Table 5. Males with most second-generation offspring during the examination period 1996–2010 (Koiranet)

#	Male	Year of birth	1st generation	2nd generation	% of the 2nd generation
1	Andover Hoot Done It (USA) (Doubloon's Winter Wood – Andover Hootenanny)	1989	73	356	55
2	Danterri Wheaten Man About Town (DK) (Lenter Wheaten Ball-Tiger – Danterri Wheaten Grainne)	1988	20	231	34
3	Never Lasting's A Star Is Born (D) (Danterri Wheaten Kris – Wheaten Rebel's Kiki Dee)	1995	44	223	32
4	Gleanngay Waggedy Andy (USA) (Gleanngay Waggin Wheel – Gleanngay Moonbow)	1992	90	142	24
5	Wheaten Rebel's Walk On Top (D) (Danterri Wheaten Man About Town – Wheaten Rebel's Ornella My Love)	1998	12	137	20
6	Fairylake's Known As The Swede (SE) (Carlinayer Star Studded Guy – Fairylake's Bright Eyes)	1993	103	98	15
7	Brookdene Springsteen (FRA) (Made In Irlanda Dal Tara – Brookdene Pensmoke Pippin)	2001	91	87	13
8	Grebello Be Gorgeous (Never Lasting's A Star Is Born – Wheatstone Usva)	2000	51	86	13
9	Dungarvan Magnus O'Malley (GB) (Plumhollow Calico Casey Of Acetraps – Kildleagh The Pippin)	1988	68	85	13
10	Wheatstone Denzel (Danterri Wheaten Man About Town – Wheatstone Wanda)	1998	42	78	12
11	Fairylake's He's A Real Swede (SE) (Legacy Starcrossed Lover – Sentence Bonnie-Bee)	1991	72	76	12
12	Down To Earth De La Richesse (NL) (Adventurer Bon Jovi – Over The Moon De La Richesse)	2001	66	67	10
13	Austronaut (SE) (Brösing's Invisible Mix – Fairylake's Jail Bait)	1995	45	67	10
14	Erainn Madara Flann Foster (SE) (Newkilber Kid Sheleen – Erainn Madara Cindy-Rose)	1991	19	65	11
15	Elovainion Cosmos (Wheaten Rebel's walk On Top – Wheatstone Wanda)	2000	35	64	10

The percentual proportion of the second generation has been calculated according to the generation (4 years) that begins 6 years after the sire's year of birth. **The limit of overuse for the second generation is 10% of the generation's registrations.**

Close relations are displayed by colour. *The lines longest separated from other lines are in italics.*

Table 6. Females with most second-generation offspring during the examination period 1996–2010 (Koiranet)

#	Female	Year of birth	1st generation	2nd generation	% of the 2nd generation
1	Wheatstone True Colors (Andover Hoot Done It – Teinikedon Taalia)	1992	30	202	33,6
2	Wheatstone Wanda (Movin On Tiger Of Valera – Wheatstone Nadja)	1995	10	103	14,6
3	Wheatstone Ruska (Andover Hoot Done It – Teinikedon Taalia)	1991	24	83	13,5
4	Wheatstone Usva (Wildflower Sage II – Wheatstone Nataalia)	1993	25	81	12,7
5	Wheatstone Aava (Andover Hoot Done It – Wheatstone Quest)	1995	14	80	11,4
6	Brayson Delightful Girl (IRL) (Killykeen Sandyman – Brayson Briony)	1995	27	73	10,4
7	Wheaten Rebel's Emma Peel (DE) (Danterr Wheaten Man About Town – Homenocks Honey Bee)	1989	21	71	10,9
8	Sandmarks Unique (Sandmarks Mystic – Wheatstone Taiga)	1995	23	63	8,9
9	Wildwheat's Ginger Gilda (Gleanngay Waggedy Andy – Wheatstone Nataalia)	1994	23	61	8,9
10	Röhvelin Take Your Heart (Fairylake's Known As The Swede – Gleanngay Lil Light O'Mine)	1995	30	51	7,2
11	Röhvelin Private Dancer (Gleanngay Waggedy Andy – Fairylake's Here I Come)	1994	18	51	7,4
12	Fairylake's Here I Come (SE) (Legacy Starcrossed Lover – Sentence Bonnie-Bee)	1991	14	51	8,3
13	Röhvelin Robber Daughter (Fairylake's Known As The Swede – Röhvelin Darling)	1995	16	45	6,4
14	Wheatstone Helle (Elovainion Cosmos – Wheatstone True Colors)	2001	27	42	6,4
15	Cindy Lingz-Alm (SK) (Baltazar King Wheaten Darling – Cinssana Softik Kni-York)	2002	28	40	6,1

The percentual proportion of the second generation has been calculated according to the generation (4 years) that begins 6 years after the sire's year of birth. **The limit of overuse for the second generation is 10% of the generation's registrations.**

Close relations are displayed by colour. *The lines longest separated from other lines are in italics.*

4.1.3 Populations of the breed in other countries

Ireland

Ireland is the breed's country of origin. The Irish Soft Coated Wheaten Terrier was a common general purpose dog in the countryside before the breed was officially recognised. After this, Wheaten Terriers have been exported to North America, the UK, Central Europe, and Scandinavia, among others, where breeding started by using these dogs. There are no official numbers of annual registrations in Ireland, but local breeders estimate the number to be about 100.

The United States

The 10-year average of the number of registrations is about 970 litters per year. Registering a puppy is up to the owner, i.e. some of the dogs, for example pet dogs, are not registered. Only about two puppies per litter are registered (about 2036 puppies/year). The breed's popularity according to AKC's annual registrations is around the 50th to 60th most popular among all breeds.

The ancestry was created from Irish dogs in the 1950s, and American lines began to develop even before the breed was officially recognised by the AKC in 1973. In the past few years European dogs have been imported to make the lines more vital, but some breeders only use pure American lines.

The UK

Not all puppies are registered at the Kennel Club. On average 300 puppies are born each year, and the number has been steady for many years. The ancestry was created in the 1940s from Irish dogs, and in the UK, too, the line began to develop into a unique direction. In addition to Ireland, dogs have been imported from Sweden and the United States. Today, very few British Wheaten Terriers are exported for breeding, perhaps because of the bad reputation of British lines following the RD cases in the 80s.

Sweden

During the last ten years the number of registrations has varied from 550 to 787 per year with a slight decrease in the last few years. Almost all puppies are registered. In 2007, the Wheaten Terrier was the 29th most popular breed in the country. During recent years, 60 dogs have been imported, of which about half came from Ireland and the rest from 10 different countries, including the Netherlands and Finland. Breeding dogs have been exported mainly to the USA and various European countries. The background of Swedish Wheaten Terriers is similar to that of Finnish ones.

Norway

The annual number of registrations has been about 175 during the past 10 years. The breed is among the 50 most popular breeds. Dogs are imported mainly from Sweden.

Germany

The annual number of registrations is about 150. There are about 25 breeders, and fewer than 10 breed regularly. Breeding began in the 1970s and is based on mainly Irish but also American lines.

The Netherlands

There are about 12 active breeders in the Netherlands. The number of registrations varies from 125 to 175 annually. Breeding is largely based on dogs brought from Ireland in the early 1970s. Lines based on English imports have almost died out. Dogs are imported from the following countries, among others: Canada, the Czech Republic, Finland, France, Germany, Ireland, Sweden and the UK. Dogs have been exported to Belgium, Canada, the Czech Republic, Finland, Germany, Ireland, Sweden, and USA, among others.

Russia

Breeding began in the early 1990s with Finnish imports. By 2008 there were about 120 litters born, in total. Today, about 20 litters are born annually. Lines are based on Finnish, Swedish and German imports. Imports are from Finland, Sweden and Germany. Exports go mainly to Ukraine, Belarus, the Baltic and Israel, but in recent years to Europe and North America, too.

4.1.4 A summary of the population structure and breeding stock

The annual number of registrations of Irish Soft Coated Wheaten Terriers in Finland has been quite steady since the 1990s. The annual number of registrations is about 970 litters in the USA, 550 to 800 puppies in Sweden, 300 in the UK, 175 in Norway, 150 in Germany, and around 140 puppies in the Netherlands. In Ireland around 100 puppies are registered each year (no accurate statistics available).

Since Wheaten Terriers everywhere are at least somewhat related, different gene matter isn't available even abroad. The breed has three distinct lines; the Irish, the English and the American line. "Pure" English and American lines are not imported to Finland today because of health issues regarding these lines. Dogs from Irish lines have increasingly been crossed with English and American lines, but on the other hand it is the only completely distinct line. However, all lines are based on the same Irish ancestry that can be found in the 20th generation of modern dogs.

The breeding age for both sires and dams is about 4 years. The use of sires should be evenly divided throughout their lives. Using older sires is recommended from the points of view of progeny evaluation and protein losing disorders.

The inbreeding coefficient has lowered significantly from the levels of the early 1990s, and has been quite steady in recent years, averaging at 9% when calculated from eight generations. When calculated from five generations the coefficient is about 2–3%, which is less than when coupling cousins (6.25%). When calculated from five generations, the coefficient tends to be significantly lower than when calculated from eight generations because of so-called historical inbreeding. Today the coefficient level is good, and it should be maintained at this level.

The effective population size per generation has been quite steady in the last few years, but there has been a slight increase from the levels of early 1990s. Only 62% of the potential effective population has been used in the past 10 years. The effective size estimate based on the number of breeding dogs gives an overestimate of the situation because the calculation formula cannot take into account uneven numbers of offspring or relations. However, the development of the effective population level is important.

The ratio between sires and dams was 0.65 in the last examination period of the breed-specific breeding strategy. Generational ratio in the 21st century has been about 0.67, while in the 1990s the ratio was 0.55. The current situation is quite good, since the ratio is increasing. The closer the ratio gets to 1 the more hereditary variation is preserved.

In an ideal situation a third¹ of Wheaten Terriers would be used for breeding. In the decennial 1997–2007, only 9% of males and 19% of females were used for breeding. The numbers are the same when looking at generations. Therefore more individual dogs should be used for breeding.

In practice, breeders often struggle to find males that meet the expectations for health, temperament and appearance typical for the breed and that are not too closely related to the dam. Some combinations have therefore been used several times, and dams have been combined with closely related sires.

¹ Formula: one divided by the average litter size times two: $1/6 \times 2 = 33\%$ (Mäki)

The maximum recommendation for puppies per dog is 3–5% of the generation's (4 years) registrations (Mäki). Therefore the maximum recommendation for Wheaten Terriers is 20–33 puppies. Because the breed-specific breeding strategy has previously allowed much higher numbers and it is not practical to tighten this recommendation too much at once (because of the lack of suitable males), the maximum recommendation in the new breed-specific breeding strategy is 7% of the generation's registrations. In practice this means no more than 46 puppies per breeding dog during its lifetime. It is not necessary to regulate the number of puppies for dams, as the number is naturally low enough.

The maximum recommendation for puppies in the second generation is 10% of the generation's registrations (Mäki). The proportion of second-generation offspring is compared to the generation that is born six years after the sire/dam.

During the past 15 years, six of the most used sires have exceeded the recommendation of 7% of puppies. For the most used sire, the portion of first-generation offspring is 14% of the generation's registrations and the number of second-generation puppies is 87, or 13%. During the examination period, the second most used sire had the highest number of offspring with 16% of first-generation puppies and 15% of second-generation puppies. 13 sires in total have had a second-generation offspring ratio of over 10% (65 puppies) in the past 15 years. Seven dams also have over 65 second-generation puppies. A sire and a dam that are a father and a daughter have the most second-generation puppies, with 55% and 34% of their respective generations' registrations. Especially the numbers of second-generation offspring have risen to be significantly high for some dogs, even though they themselves have not necessarily been used that much. This is because many of these dogs' puppies have ended up as breeding dams for active breeders. It is also to be noted that affecting the number of offspring in the second generation is significantly more difficult than in the first generation.

The breeding stock is not very large, but is it not alarmingly small. Factors contributing to its constriction are the overuse of individual dogs for breeding and the small number of different lines worldwide. Close relatives of the most used individuals have a diminishing effect on the breed's breeding stock.

4.2 Behaviour, temperament and utilization

4.2.1 Behaviour, temperament and utilization according to the breed standard

According to the breed standard, the Irish Soft Coated Wheaten Terrier is spirited, active and good-tempered. It is very affectionate and loyal towards its owners and very intelligent. The Irish Soft Coated Wheaten Terrier is a trusty and loyal friend, which is defensive without aggression. They were traditionally used by small farmers in their native Ireland to kill vermin or help with the work about the farm. They were used for a long time in the difficult task of hunting badgers and otters.

One must bear in mind that although the Irish Soft Coated Wheaten Terrier is not the snappiest of the terrier breeds, it is nevertheless a terrier, and it might not get along with all other dogs. Especially a male will not hesitate to answer to a challenge handed to him. Excessive aggressiveness is not, however, a characteristic of the breed. Wheaten Terriers should not be nervous, timid, biting out of fear or aggressive without reason, and dogs exhibiting this kind of behaviour should not be used for breeding.

4.2.2 Division into show and working dog lines

There is no division into show and working dog lines for the Irish Soft Coated Wheaten Terrier.

4.2.3 The description of behaviour and temperament in the breed-specific breeding strategy

The following goals were set for the temperament and utilization of the Irish Soft Coated Wheaten Terrier in the breed-specific breeding strategies in 2002-2006 and 2007-2011: Breeding should concentrate on raising good-natured Wheaten Terriers that adapt well to modern day life and can be used in various leisure activities. The recommendation is that timid, nervous or aggressive dogs should not be used for breeding. The breed-specific breeding strategy of 2007-2011 stated that the breeders should pay attention to providing guidance for new owners on raising the Irish Soft Coated Wheaten Terrier into a sociable and pleasant family dog, since the breed is a strong-willed one and requires a determined upbringing from puppyhood.

4.2.4 Temperament and behaviour in daily situations

A survey for Finnish Irish Soft Coated Wheaten Terrier breeders was carried out in 2010. Approximately half of those who replied wished that breeding would concentrate more on characteristics and character testing. Some were worried about the growing number of behaviour problems in Finland and worldwide, without further elaborating on said problems. The breeders wanted to raise the importance of character in breeding, and preventing behaviour problems by testing the dogs (at least one of the parents) as well as mapping out the amount, nature and reasons behind behaviour problems.

In the breeder survey in 2005, 11% thought the current situation of the temperament of the breed was good, 89% rated it as fairly good. The temperament suits the breed standard well according to 16%, fairly well according to 84%. Behaviour problems occur occasionally according to 94%, 6% said that there were no behaviour problems. Of the problems listed, the most serious/common behaviour problems were timidity, aggressiveness towards other dogs or people and dominance. Also untrusting behaviour and guarding were mentioned.

A health survey covering all dogs of the members of the Kerry Blue Terrier and Irish Soft Coated

Wheaten Terrier club of Finland was carried out in 2003. At that time, 88% of the answerers were content with the current state of the behaviour of the breed. From the list of character descriptions, the most common characterizations of the Irish Soft Coated Wheaten Terrier were affectionate (87%), lively (38%), and calm (27%). The most serious/common problems were timidity (5%) and aggressiveness (2%). Aggressiveness was usually towards other dogs, but in some cases also towards people. Also destructive behaviour, barking and hyper-activeness were mentioned.

Between 2001 and 2010 42 dogs (3% of registered dogs) have been assessed by the Finnish character test and 66 dogs (4%) have been MH-tested (Mental Description). The majority of the MH-tests (50 pcs) are unofficial; they were done before 2010, when MH-tests were made official in Finland. They are compatible with the official results, and have been published on The Kerry and Irish Soft Coated Wheaten Terrier website and newsletter. The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland has played an active part in starting MH-tests in Finland in 2007. In the scope of Finland, Wheaten Terriers have been quite broadly MH-tested. An ideal profile for the breed has not yet been formulated in character tests or MH-tests.

In the character tests, the points for the Irish Soft Coated Wheaten Terrier have ranged from -1 to +246. The average was +123 points.

The average character test results for the Irish Soft Coated Wheaten Terrier:

Ability to function: +1 Average

Sharpness: +2 Large, without post-attack aggressiveness

Desire to defend: +3 Average, subdued

Desire to fight: +1 Small

Nerves: +1 A bit restless

Temperament: +2 Moderately lively

Hardness: +1 A bit soft

Accessibility: +3 Good-natured, accessible, open.

Secure to shots

Table 7. The distribution of the results of the character tests between 2001 and 2010 (40 pcs)
(Note. 42 dogs character tested, 2 files missing)

	Ability to function	Sharpness	Desire to defend	Desire to fight	Nerves	Temperament	Hardness	Accessibility	Secure to shots		
3		10	19	5		12	6	33	Secure	23	58 %
2	4	30	1	13	4	18		7	Unaccustomed	12	30 %
1	22		16	0	35	10	24			2	5 %
0	11		4	19	1				Disposed to shots	3	7 %
-1	3			1							
-2				2			9				
-3							1	0			

Unwanted and uncharacteristic behaviour for the Irish Soft Coated Wheaten Terrier is nervousness, timidity and excessive aggressiveness. In the character tests the nerves of the Wheaten Terrier scored +1, a bit restless. Most negative marks were given on the desire to fight and the ability to function. 25% of the character tested dogs were evaluated as soft or very soft, 35% were evaluated as small or inadequate for the ability to function. Excessive softness or inability to function may cause the dog to freeze in daily situations and can make e.g. training more difficult. These characteristics should gain more importance in breeding choices.

The sharpness of the Irish Soft Coated Wheaten Terriers has traditionally been large, desire to defend average or small. A certain degree of sharpness (reacting aggressively to a threat) is one of the

characteristics of the breed, as long as it is not exaggerated and the dog does not exhibit post-attack aggressiveness. The characterisation in the breed standard “defensive without being aggressive” seems to hold true fairly well in the tested individuals. 25% of the tested were very lively by temperament, but no disruptively lively dogs were encountered. Hyper-activeness was mentioned in the health survey, but was not encountered in the character tests. 7,5% of the tested dogs were disposed to shots and 30% were unaccustomed to shots. 83% of the tested dogs were +3 by accessibility: good-natured, accessible, open.

The average MH-test results for the Irish Soft Coated Wheaten Terrier:

Part	Point average
1a Contact, greeting	3.9 Takes contact or answers to it
1b Contact, cooperation	3.2 Takes part, but is not interested in TO
1c Contact, handling	3.1 Accepts handling
2a Play 1, disposition to play	2.9 Playing activity increases/decreases
2b Play 1, grabbing	2.6 Grabs object with time lag /or front teeth
2c Play 1, biting and desire to fight	1.8 Grabs with time lag – holds, does not pull
3a Chasing 1	2.0 Initiates chase, but stops
3a Chasing 2	2.1 Initiates chase, but stops
3b Grabbing 1	1.6 Does not grab, sniffs the prey
3b Grabbing 2	1.8 Does not grab, sniffs the prey
4 Level of activity	2.9 Attentive and mostly calm, sporadic functions
5a Distant play, interest	2.7 Interested in the assistant, follows without pauses
5b Distant play, threat/aggression	1.6 Sporadic threatening gestures (1-2) in the first part of the examination
5c Distant play, curiosity	2.5 Approaches assistant speaking from a hiding place (= 3; average 2,5)
5d Distant play, disposition to play	2.0 Does not play, shows interest
5e Distant play, cooperation	1.8 Shows interest, but stops
6a Surprise, fear	2.7 Evades without losing eye-contact
6b Surprise, defence/aggression	1.6 Sporadic threatening gestures
6c Surprise, curiosity	2.9 Approaches the object when trainer standing next to it
6d Surprise, remaining fear	1.7 Small curtsy or variation of moving speed while passing
6e Surprise, remaining interest	1.9 Stops, sniffs or looks at the object while passing
7a Noise sensitivity, fear	3.1 Evades without losing eye-contact
7b Noise sensitivity, curiosity	3.2 Approaches the object when the trainer stands next to it
7c Noise sensitivity, remaining fear	1.7 Small curtsy or variation in moving speed while passing
7d Noise sensitivity, remaining interest	1.9 Stops, sniffs or looks at the object while passing
8a Ghosts, defence/aggression	2.5 Sporadic threatening gestures (=2, average 2.46)
8b Ghosts, attentiveness	3.3 Watches the ghost, long pauses, both half of the time or the other the whole time
8c Ghosts, fear	2.6 Is mostly in front or at the side of the trainer, variation between flight and being in control
8d Ghosts, taking contact w/ ghost	3.3 Answers to the contact made by the assistant
9a Play 2, disposition to play	2.7 Playing activity increases/decreases
9b Play 2, grabbing	2.6 Grabs the object with time lag /or front teeth
10 Shots	2.8 Shows interest in shots fired/audience, but returns to play or becomes passive

In the MH-tests Irish Soft Coated Wheaten Terriers have accepted handling, taken contact with an unfamiliar person or answered to an offered contact (points 1, 5e, 8e). In play and chase, there was some diversity: some chased or played enthusiastically, but on average Wheaten Terriers are not excited by chasing in particular. The intensity of play decreases slightly as the description goes on (point 2 vs. 9,

this can be a sign of slight stress). The activity level of the breed is average (2,9).

When evaluating aggression and guarding (5b, 6b, 8a), the average of Irish Soft Coated Wheaten Terrier was moderately low (8b as average) and the breed only has a few marks 5, which is the strongest reaction. Wheaten Terriers reacted the strongest to deterrents in evaluating noise sensitivity, but in general Wheaten Terriers went to investigate the deterrents quite quickly and they were not left with strong negative mental images. (It can be interpreted that there is subtle softness in the breed.) There also seems to be some degree of sound sensitivity and disposition to shots (points 7 and 10).

Excessive aggressiveness, nervousness or timidity has not occurred in the MH-description situations. The development of curiousness (as a part of ability to function or courage) and especially noise sensitivity and disposition to shots should be monitored, although these were not mentioned as problems in the survey for the members of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

In Sweden, the Irish Soft Coated Wheaten Terrier is substantially more popular than in Finland, and around a thousand dogs of this breed have been MH-tested. The average of the Wheaten Terriers tested is similar to the Finnish average. Small changes may be due to the small number of tested dogs in Finland and the unrepresentativeness of the sample. A more detailed comparison between Finland and Sweden would not be worthwhile at this time due to the substantial difference between the amounts of dogs that have been character depicted. The ideal MH profile constituted by the Swedish Breed Association differs somewhat from the current situation of the breed in both Finland and Sweden, especially on chasing and curiosity, but also playfulness and disposition to shots. The Finnish breed-specific breeding work has not commented on the ideal MH-profile of the Swedish Breed Association, because more material and experience is needed. Breeders should also discuss what the ideal character profile would be, taking into account the original utilisation of the breed and the breed standard.

Table 8. The average of Irish Soft Coated Wheaten Terriers' character tested in Finland and Sweden and the MH ideal profile compiled by the Swedish Irish Soft Coated Wheaten Terrier breed association.

	Contact				Play									D-F	Grabbing	Interest		Curiosity		
	8e	1a	1b	1c	2a	2b	2c	9a	9b	5a	5c	5d	5e	3a2	3b2	6e	7d	6c	7b	8d
Finnish Avg.	3.3	3.9	3.2	3.1	2.9	2.6	1.8	2.7	2.6	2.7	2.5	2	1.8	2.1	1.8	1.9	1.6	2.9	3.2	2.9
Swedish Avg.	3.3	3.8	3.3	3.3	3.1	2.8	2.3	2.6	2.3	2.6	2.4	1.9	1.8	2.6	1.9	1.6	1.6	2.9	3.3	2.6
SWTC ideal	4	4	4	4	4	4	3	4	4	3	5	4	4	4(t.5)	4(t.5)	1	1	5	5	5
Fi-Se	0	0.1	-0.1	-0.2	-0.2	-0.2	-0.5	0.1	0.3	0.1	0.1	0.1	0.0	-0.5	-0.1	0.3	0.0	0.0	0.0	0.3

	Act.	Shots	Fear					Threat			
	4	10	6a	6d	7a	7c	8c	5b	6b	8a	8b
Finnish Avg.	2.9	2.8	2.7	1.7	3.1	1.7	2.6	1.6	1.6	2.5	3.3
Swedish Avg.	3	2.3	2.6	1.8	2.7	1.5	2.8	1.3	1.3	2.5	3.7
SWTC ideal	2 (t.3)	1	2 (1-3)	1	2 (1-3)	1	1	1	1	2 (t.1)	4
Fi-Se	-0.1	0.5	0.1	-0.1	0.4	0.2	-0.2	0.3	0.3	0.0	-0.4

In show situations Irish Soft Coated Wheaten Terriers have usually behaved according to their breed. There are stories about difficult customers from groomers; however the reason for the behaviour may have been caused by a badly maintained fur or that the dog was unaccustomed to grooming. According to the Finnish dog website koiranet.fi, a number of five (0,3% of the registered breed population) Irish Soft Coated Wheaten Terriers have been reported to have been euthanized due to behaviour problems. The actual number might be somewhat higher. Behaviour problems are the fifth most common reason for euthanization, cf. the table in part 4.3.3.

4.2.5 Utilisation and test features

The Irish Soft Coated Wheaten Terrier was originally a helper of Irish small farmers: an energetic general purpose dog of the farmhouse that had to be able to perform various tasks. Wheaten Terriers were used for killing vermin and helping with farm work, ranging anywhere from herding to guarding. It needed to work as a family pet and guardian, announcing with a few barks about guests arriving or unknown trespassers. The breed was also used for hunting, for example for the difficult task of hunting badgers and otters.

In Irish literature, especially Holmes, the Irish Soft Coated Wheaten Terrier has been described as a very versatile breed. Obviously not all of the characteristics mentioned before can be found in one dog; moreover it is a case of inter-breed variation. This type of farmhouse general working dog needed to have a versatile instinct base; it needed to be both independent and eager to please. The dog had to have hunting instinct, sharpness and stubbornness, so that it could track badgers from caves or otters from water and terminate small predators. It needed to be independent, since a hunting dog has to be able to make choices on its own. On the other hand, the hunting instinct could not have been too strong, or the dog would not have stayed at the home farm. As a herding dog and pet it would need to have self-control and be cooperative. A guarding dog needs to be lively enough to observe its surroundings, and have a desire to defend - although the Wheaten Terrier's task was rather observing arrivals and notifying its owners of them, instead of actual guarding.

A versatile and adaptable dog is useful today, since you can do almost any hobby with it. On the downside, the Irish Soft Coated Wheaten Terrier is good at many trials, but the highest prestige is still to be attained. Agility is the most popular trial form, though up to date the breed does not have its own Agility Champion. Currently there are two Obedience Champions in the breed.

Table 9. The trial submissions of the Irish Soft Coated Wheaten Terrier between 2001 and 2010 (percentage compared to registration submissions) (Koiranet)

percentage compared to registration submissions) (RORANET)																						
Sport	2010 reg.		2009 reg.		2008 reg.		2007 reg.		2006 reg.		2005 reg.		2004 reg.		2003 reg.		2002 reg.		2001 reg.		Total reg.	
Agility	259	153	310	186	244	156	270	140	232	167	286	213	303	183	305	159	267	140	300	194	2776	167
Obedience	32	19	29	17	31	20	44	23	43	31	25	19	22	13	26	14	24	13	14	9	290	16
Behaviourtest	4	2	3	2	3	2	0	0	4	3	5	4	3	2	2	1	1	1	0	0	25	2
Rescue dog test	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	2	0
Hunting & tracking	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Registrations	169		167		156		193		139		134		166		192		191		155		1662	

The most popular trial form with the Wheaten Terrier is agility, where the amount of entries between 2001 and 2010 was one and a half-fold compared to the annual registration rate of dogs of the breed. There are also some attendances to obedience trials. The Wheaten Terrier does not have working dog rights and they are not used as police dogs, military working dogs or detection dogs.

A few dogs and handlers are involved in search and rescue dog activities (disaster and rubble search), they also volunteer in search and rescue teams. A trained Irish Soft Coated Wheaten Terrier usually passes disaster and rubble search aptitude tests easily. Around ten Wheaten Terriers work as therapy dogs; some have been awarded with therapy dog medals. Tracking (e.g. searching, blood track, dog search) seems to have been gaining popularity as a hobby during the past years, although only one Wheaten Terrier has participated in tracking trials for hunting dogs. In Sweden the breed has several Tracking Champions. In both countries the breed has occasionally been used in hunting as a tracking dog.

Although the Irish Soft Coated Wheaten Terrier is not a police or military dog, it is hereditarily a working dog. To be a balanced family member, the breed requires stimulation of the nose and brain as well as a sufficient amount of exercise. Hobbies such as agility, obedience training or tracking or perhaps by participating in “helping” at work or in family activities help to fulfil this need. As an active dog it is not a mere couch potato. Idleness can be one reason for destructive behaviour, to which the dog might resort to for releasing energy when left alone. The Irish Soft Coated Wheaten Terrier is not a yard dog either, because as a lively and affectionate dog it needs human contact for its wellbeing.

4.2.6 Behaviour in the home environment and breeding behaviour

The breed occasionally exhibits mild separation anxiety, although in the surveys it was not reported - unless barking and destructive behaviour, that were mentioned in the health survey, are a symptom of separation anxiety. Usually the reason behind this kind of behaviour is the lack of activity. The breed has some amount of noise sensitivity and disposition to shots. It is usually good-natured and open towards people, the attitude towards other dogs may vary: dogs of the same sex – especially males – might not get along with each other. Aggression without reason or the so-called “rage syndrome” has raised a certain amount of discussion amongst the breed, but there is no confirmed knowledge of the problem occurring. In the health survey in 2003 2% of the dogs were reported as being aggressive towards other dogs or people. These behaviour problems should be taken seriously, since the Wheaten Terrier is a middle-sized breed and it might have a surprising amount of strength.

Breeding behaviour has not been covered in the survey, since usually no problems occur. The range of heat periods in females is every six to ten months and mating is usually successful, and there is no need for artificial insemination. Births usually go well and caesarean sections are very rare. Females tend to their puppies well and feed them for a long time. The puppies are usually housetrained when they are given away, or at least they know to do their business on a sheet of paper. Males usually have a very strong libido, and it is not unheard of that a male Wheaten Terrier might go without eating for several days or even weeks when the neighbouring female dogs are in heat. Respectively, females may exhibit strong phantom pregnancies. Because of a strong libido and problems with phantom pregnancies it is not uncommon that at some point males are castrated and females neutered. These procedures usually have a positive health effect in preventing testicular or prostate cancer in males and uterine or mammary cancer in females.

4.2.7 Summary of the central problems concerning the breed’s behaviour and temperament

Although the Irish Soft Coated Wheaten Terrier is normally a very good-willed and open breed, some behaviour problems have been found. According to surveys, the most common behaviour problems are timidity and aggression towards other dogs, sometimes towards people. Also untrusting behaviour, guarding, being hyperactive, destructive behaviour and barking were mentioned. In addition, some amount of noise sensitivity and disposition to shots occurs; the frequency of which should be mapped out through a survey to the members of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

Timidity can sometimes be the symptom of excessive softness or sensitiveness that is found in the breed. When the dog overreacts to the environment or the owner, it can seem timid. Overreacting can result as being hyper-active, nervous or as in a lack of concentration. A dog that is too soft is also more difficult to train, since under pressure the dog might lose its ability to function and resort to substitute actions. In the future, more attention should be paid to softness and timidity in breeding.

Excessive aggressiveness is the most serious of the behaviour problems, but there is no confirmed

information about the frequency of the problem. Someone might see the Wheaten Terriers' sharpness and occasional anti-social behaviour towards other dogs of the same sex as a problem, although it is a breed characteristic. The Wheaten Terrier is not a pack dog in the same sense as sled dogs and some companion dog breeds, and rows may occur with dogs of the same sex living in the same household. All dogs, however, need to be sociable and the Wheaten Terrier should only have the desire to defend, not aggressiveness. This is emphasised in the breed standard. In the show ring the Irish Soft Coated Wheaten Terrier should behave toward the judge in a friendly manner, even little hints of aggressiveness must be punished in evaluation.

Untrusting behaviour and guarding might result from the combination of great sharpness and desire to defend with sensitivity or softness. Then the dog can overreact to its environment or to imagined threats, and start to defend itself and its "property", sometimes aggressively. The dog might also be aggressive towards people. In the character tests and depictions, excessive aggressiveness, avoiding contact, uncontrolled desire to defend or post-attack aggressiveness have not occurred. To clarify this matter further, more information about behaviour in the home environment and a broader testing of temperament is required.

Experiences and training affect what kind of dog the puppy grows up into. The breed is strong-willed, and needs a determined and comprehensive upbringing to develop into a sociable, pleasant family dog. Breeders should choose an appropriate home for each puppy; puppy testing can possibly help with this. Consistent handling and training of a puppy or a young dog is very important for their development. Grooming the Wheaten Terrier is quite demanding, and therefore it is important that the puppy is desensitised to different grooming procedures. The effect of hereditary features should not be underestimated, and mapping out and analysing the temperament characteristics is part of preventing behaviour problems. Gene tests may provide help in the future identifying and preventing excessive aggressiveness.

Although the number is rising thanks to MH-testing (Mental Description), the amount of dogs that have been character tested or depicted is still very small and selective (official test profiles 3,5% of the dogs registered in 2001-2010; only part of the family lines represented). Thus tests do not give a comprehensive picture of the current situation of the breed in Finland, and therefore we cannot draw many conclusions from them. The Irish Soft Coated Wheaten Terrier should be character-tested and depicted more broadly in the future, so that the temperament of the breed could be analysed accordingly, and an ideal profile for the breed could be created. When defining the ideal profile, the original utilisation of the breed and the demands of modern day life should be taken into account. The character depiction of the character test should be complemented with a survey study including open-ended questions, especially on the part of behaviour problems. Through the replies it could be seen what kind of behaviour problems the breed has and how many, and also what positive sides of the breed should be reinforced. In addition, we should think of the reasons behind the problems and, in particular, the different approaches to preventing them, such as possible heredity, choosing homes for puppies, providing guidance for new owners and training. Behaviour-related issues are very important for the Wheaten Terrier, and both the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland and breeders should contribute to it in the upcoming breed-specific breeding strategy.

4.3 Health and reproduction

In general, the Irish Soft Coated Wheaten Terrier is known as a healthy and long-lived dog. Breeding is usually unproblematic, normal mating usually goes well and the females usually have no problems with giving birth. The size of the litters is fairly high: approximately six puppies. Reproductive problems should be taken seriously, since problems in breeding pose a threat for the general vitality of the breed.

There are four serious diseases with similar symptoms found in Wheaten Terriers: protein-losing enteropathy (PLE), protein-losing nephropathy (PLN), renal dysplasia (RN) and, as the rarest, Addison's disease. Hereditary renal dysplasia (RN) occurs in puppies and very young dogs. Protein-losing nephropathy is usually found in 6 year old dogs, protein-losing enteropathy somewhat earlier, at approximately 4,5 years. These two types of protein-losing disorder may occur simultaneously in the same individual.

4.3.1 Significant diseases of Irish Soft Coated Wheaten Terriers in Finland

The Irish Soft Coated Wheaten Terrier has hereditary diseases and defects. A breeding dog has to be free from hereditary diseases and defects, because it should not pass these on to the offspring. In particular, the following hereditary diseases and faults found in our breed should be avoided.

Renal dysplasia RN

Renal dysplasia (progressive nephropathy / familial nephropathy) is a hereditary disease that ultimately leads to death. The heritability of the disease is not yet known, but it is thought to be passed on to the offspring by two gene pairs. Symptoms occur usually in dogs from 3 months to 3 years of age, but occasionally no earlier than at 6 years of age. The symptoms include increased need to drink and urinate, vomiting, frailty and loss of weight, anaemia, blood in the urea, exhaustion, bad breath and swelling. The end symptoms are nervousness, convulsions, coma and, ultimately, death. Some of the symptoms described above may not occur in all cases.

The disease is examined by blood and urine samples. However, the symptoms and change in blood value are not always found before 70% of the kidneys have been damaged. In a blood sample from a dog with renal dysplasia the, urea, creatinine and phosphorus rise, haemoglobin drops. Initially, haematocrit rises and in the terminal phase it drops. The specific weight of the urine sample drops and protein increases. All levels might not change on every dog.

The kidneys of those dogs that have died with the most suspicious symptoms or that have been euthanized because of suspected familial nephropathy should be pathologically examined. The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland will cover autopsy and examination costs if requested. The club also regularly documents and publishes information about cases of renal dysplasia (cf. annex, list of gene carriers), and keeps track of the global situation.

Sick, known carriers (the parents or offspring of diseased dogs) or full siblings of the diseased dogs should not be used for breeding. Full siblings or offspring of a known carrier of the disease are not recommended for breeding, only in carefully evaluated exceptional cases explained in part 6.2 of the breed-specific breeding strategy.

Renal dysplasia is very common in the United States, and cases still occur in Sweden, as well. Thanks to efficient and carefully planned breeding work, there have been no pathologically confirmed cases of

renal dysplasia in Finland since 1994, even though almost all of the modern Irish Soft Coated Wheaten Terrier family lines in Finland include some confirmed carriers of the disease. To identify carriers of renal dysplasia, a DNA-marker test has been created. It identifies a “marker” close to the disease gene, not the disease gene itself. For this reason the results of the test might not be clear, and this test has not been used in Finland.

Protein-losing enteropathy (PLE)

Protein-losing enteropathy or nephropathy is a disease becoming more general in Irish Soft Coated Wheaten Terriers. The disease is usually found at the age of 4-6, but it might not always result in death. There is no confirmed information of the hereditariness of the disease, but it seems that the diseased individuals themselves pass the disease to their offspring generally more than healthy individuals. Because the disease begins late in life, resisting it is more difficult. The disease is quite common in the United States, and also in Finland a few individual suspicions or confirmed cases occur, that have symptoms correlating to protein-losing enteropathy or nephropathy. At Pennsylvania University, USA, a broad research programme about protein-losing enteropathy and nephropathy is carried out, through which they hope to be able to get information about the hereditariness of the disease in the future.

According to current knowledge all protein-losing diseases might not be of hereditary nature. There are different forms of the disease, out of which some are genetically induced and some stem from the environment. Newest research methods provide ways to identify the different forms of disease. The different forms of the disease also require different treatments. It is thought that protein-losing enteropathy precedes protein-losing nephropathy and either continues or subsides as protein-losing nephropathy advances. Parallel protein-losing enteropathy and nephropathy is rare in dogs (Littman, 1999).

In protein losing enteropathy and/or nephropathy, the metabolism loses protein either through the intestines (PLE) or through the kidneys (PLN). The cause of the disease is a complex reaction in the immune system that damages the intestines. Sometimes pulmonary thromboembolism or pancreatitis are a part of the disease. Symptoms include loss of weight, frailty, vomiting, diarrhoea, general bad health and fluids in cavities of the metabolism (e.g. abdominal cavity). Protein-losing enteropathy can be treated with a special diet and medication. Protein-losing nephropathy is more serious, since it leads to death, and the symptoms might include, in addition to those listed above, the symptoms of renal dysplasia, such as an increased amount of drinking and urinating, uremia, coma, convulsions and, ultimately, death. Protein-losing enteropathy and nephropathy are not, as such, diseases, but symptoms. The reason behind the changes in the intestines and kidneys that result in the described symptoms, can be different for different dogs. (Sarkanen).

Genetic weaknesses for protein-loss enteropathy or nephropathy can be various. The disease might be a result of environmental conditions, such as an infection or bad nutrition. This might explain why the disease is found in middle-aged and older dogs. The disease might not occur or the genotype might not reveal itself, if the genetically sick dog was not exposed to these environmental conditions (Littman, 2010).

Both protein-losing enteropathy and nephropathy are treatable to a certain degree with a special diet and medication. Especially dogs with protein-losing enteropathy have lived nearly a normal-length life with specific treatment.

For breeding, a protein-loss disorder occurring at 4-6 years of age is difficult to resist, because diseased dogs might have already been used for breeding. The hereditary mechanism of the disease is still not known, and there is no gene test for screening carriers. On average it seems that the diseased individuals pass the disease to their offspring more than healthy individuals. Cross breeding has also shown that the

disease passes on to offspring of both the diseased Wheaten Terrier and a healthy individual of another breed (Vaden 2009). Thus, both parents of the diseased individual might not be carriers of the disease.

Before discovering the genetic marker, it is unlikely that the hereditary mechanism is discovered. Samples from known specimen of Wheaten Terriers suffering from protein-loss disease have been submitted to an on-going gene research programme in Finland, but currently there has been no information about possible results.

A dog that exhibits symptoms suggesting protein-loss diseases, or a dog that has produced offspring with protein-loss disease, should not be used for breeding. It can only be considered for breeding on conditions listed in part 6.2.

The ERD urine test a.k.a. microalbuminuria test is used for screening protein-losing nephropathy (cf. annex: ERD-ohje ja –lomake, in Finnish only). With this test, dogs that have protein-losing diseases can be found in the early stages, before symptoms occur.

Dogs suffering from symptoms described above should be examined thoroughly. Dogs that have died exhibiting suspicious symptoms should be pathologically examined to confirm the diagnosis. The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland will cover autopsy and examination expenses, if insurance does not. The club also documents and publishes regularly diagnosed protein-loss cases (cf. annex, list of carriers), and keeps track of the global situation.

Abnormal development of the hips, hip dysplasia (HD)

Hip dysplasia is an abnormal development of the hips, where the femoral head and acetabulum/ socket of the pelvis do not fit together. The condition can ultimately cripple the dog. Genetic predisposition can cause hip dysplasia, but also diet and exercise can affect the development and the difficulty of the defect. Hip dysplasia can make leisure activities more difficult, make moving painful and, in a serious stage, might cripple the dog and hinder its life.

Abnormal development of the hips or hip dysplasia is the most common developmental abnormality involving bones/the joints. It can be defined as genetic hip laxity. The hips are macroscopically normal at the time of birth, but changes occur already in the first weeks of the puppy's life. The laxity leads to femoral head not held tightly in place. An unusually great pressure focuses upon the area, and the smaller the area is, the greater the pressure. This can lead to micro fractures and a flattened socket. At approximately the age of one year, ossification is complete and hip joints stabilize. Usually the pain decreases at this age.

The abnormal development of the hips usually leads to arthritis. The development and type of arthritis is determined by various breed specific and individual differences. The reason behind abnormal development of the hips is not known, but according to current examination information it is quantitatively hereditary, which is to say it is affected by various different genes. Some of these are major genes. The degree of heritability varies in research between 0.1 – 0.6. The environment affects the degree manifestation of the abnormality. In various researches, it has been found that a generous access to food has a connection to hip dysplasia. Feeding does not create hip dysplasia, but brings the defect up in genetically predisposed dogs. This goes both ways; with optimal nutrition hip dysplasia does not occur or is more lenient. Also excessively rough exercise at the growing phase may make development turn for the worse.

Hip dysplasia is seen in almost all breeds, but it is most common in large breeds. Symptoms can be noticed as a puppy at the age of 3-12 months when the pain stems from the inflammation in the joint capsule or irritation of the nerve fibres and nerve injury of the periosteum caused by the laxity of the hips. The symptoms may decrease or stop for even several years, when connective tissue that forms around the joint decreases the laxity of the joints. Another group of dogs that suffer from these symptoms are grown-up dogs, and the reason for their symptoms is arthritis. Young dogs might symptomize by hobbling with their hind legs ("bunny-hopping"), other symptoms include difficulty getting up after rest, unwillingness to move and a snapping sound while walking. Symptoms may begin sharply and an owner may connect them to a certain occurrence. Older dogs with arthritis symptoms may be vague. Symptomizing is often seen to stem from ageing. Typical symptoms are hobbling of the hind legs and stiffness in movement. A dog with arthritis will try to take weight off the back end, which shows as the heaving of the line of the back while walking and swivel of the hips. This also leads to muscle atrophy of the hind leg muscles and strengthening of the front leg muscles.

Nutrition plays an important part in treating hip dysplasia and arthritis caused by it. Excess weight makes the symptoms

worse and mere loss of weight may make the dog feel better. NSAID's and as a shot or orally given dose of a drug that improves the composition of the synovial fluid and the joint cartilage are commonly used. A reasonable amount of exercise keeps the muscles in condition and the joints working. There are also surgical treatments available. In most breeds, the hip dysplasia problem is avoided by eliminating those dogs from breeding that have been confirmed through X-rays to be suffering from hip dysplasia. The heredity of hip dysplasia is average. Breeding choices made by manifestation should lead to results, if the selection is systematic. With BLUP or Best Linear Unbiased Prediction index the selection for breeding dogs is easier. The BLUP index takes into account the state of all the examined relatives of the dog and eliminates the effect environmental factors in the X-rays. Indexes are used in many breeds in both hip and elbow joints. The precondition for these indexes is a sufficient amount of examined dogs. (Lappalainen)

During the last five years, the dogs screened in Finland (Table 8) 21,5% have slightly or averagely difficult changes in the development of the hips. It is not recommended to use a Wheaten Terrier with D-rated hips for breeding.

Table 10. The results for hip X-ray screening between 1991 and 2010 (Koiranet):

	2006-2010		2001-2005		1996-2000		1991-1995	
A (healthy)	109	46.8 %	68	48.9 %	90	57.3 %	109	67.3 %
B (borderline)	74	31.7 %	37	26.7 %	37	23.6 %	36	22.2 %
C (slight)	38	16.3 %	23	16.5 %	21	13.4 %	13	8.0 %
D (moderate)	12	5.2 %	11	7.9 %	9	5.7 %	4	2.5 %
	233	100 %	139	100 %	157	100 %	162	100 %

Table 11. The annual hip X-ray screening results of the Irish Soft Coated Wheaten Terrier 2006–2010

Dogs	2010	2009	2008	2007	2006	Total
A	23	23	24	19	20	109
B	12	20	19	13	10	74
C	6	7	12	7	5	38
D	2	2	1	5	2	12
x-rayed	43	52	56	45	37	233
A+B	35	43	43	32	30	183
C+D	8	9	13	13	7	50
hipdyslexia%	18,6	17,3	23,2	28,8	18,9	21,5

Eye diseases

Progressive retinal atrophy (PRA)

Progressive retinal atrophy (PRA) gradually leads to blindness as the light sensitive rod and cone cells of the retina slowly degenerate. This hereditary disease of the fundus of the eye occurs in middle-aged or old dogs or between 5-8 years of age. In Finland, there have been some cases of PRA in Wheaten Terriers that were born in the 1970s and 1980s. The latest PRA case (unofficial) was in 1991.

PRA or progressive retinal atrophy destroys the cells that sense the light. The disease in question is a group of diseases that are caused by different genes. There are different types of PRA, the disease varies between dog breeds, and even within the same breed there can be various types of PRA. PRA has been found in over 100 breeds and in at least 22 of these breeds the mutation has been located. PRA may occur in any breed. The most common hereditary mechanism is autosomal recessive. The age of onset and the development of the clinical symptoms of the disease vary according to the mechanism behind the PRA type. The type of PRA that occurs in young dogs links to the abnormal development of the optic nerve cells. In the type of PRA that occurs in older dogs, the optic nerve cells develop normally, but start to

degenerate. In most types of PRA, the dog becomes unsure and fearful in the dark, because of the atrophy of the rod cells of the retina that are important for night vision. Later the dog will become fully blind due to the atrophy of the cone cells of the retina. The pupil is dilated and the increased reflex in the fundus of the eye can be seen especially well when the light hits the pupil. There is no treatment for PRA, but in a familiar environment even a blind dog can get along quite well. Experimental gene therapy has been performed on dogs with hereditary diseases of the optical nerve cells, where the gene that passes on the disease is known. The diagnosis is commonly done by an ophthalmoscopic examination of fundus the eye. Electroretinography or ERG can detect changes in the optical nerve cells even before an ophthalmoscopic examination detects the clear degenerative changes in the retina. (Vanhapelto, Lappalainen)

Hereditary cataract (HC)

Cataract is opacity in the lens of the eye that may compromise vision by obstruction of the ocular fundus. Different dogs have different types of cataract; it can be a case of a small opacity that doesn't develop further, or a mature cataract that results in the lens being completely opaque and resulting in blindness. Also the age of the onset of the cataract varies from breed to breed. The cataract is assumed to be hereditary, when it is onset in both eyes, in a typical location and at a typical age for the breed and the cataract is in developing state. Similar cataracts occurring in family members confirm the presumption of hereditariness. There have been six cases of cataract in Wheaten Terriers born in the years 1999, 2002 and 2008. In addition, two cases of cataract have later been declared healthy by the panel of the Finnish Kennel Club.

Hereditary cataract causes opacity of the lens of the eye either partially or completely. The hereditary mechanism of known forms of cataract is generally autosomal recessive, but the hereditary mechanism of most forms is unknown. The age of onset varies substantially. Hereditary cataract is usually bilateral and leads to blindness if the complete cataract causes the whole lens to turn opaque. If the opacity caused by cataract remains small, it might not affect the vision of the dog. Cataract may be hereditary or non-congenital, congenial or acquired. Cataracts diagnosed at the time of birth to 8 months of age are congenial. As an example of an acquired cataract is a type of cataract that occurs in diabetic dogs, that quickly develops into a complete cataract. Other examples of acquired cataracts are cataracts caused by old age, or secondary cataract that links to PRA. The so-called nuclear sclerosis or the hardening of the lens in an old dog is not a proper cataract mutation, but a normal change linked to ageing where the lens nucleus turns into a shade of opaque grey. It does not affect the dog's vision. Hereditary cataract can be diagnosed in a medical examination by an eye specialist for prevention of hereditary eye diseases. Biomicroscopic examination is particularly important in diagnosing cataracts. A cataract can be removed surgically by phacoemulsification. The best result is acquired if the operation is done before the cataract mutation is complete. A precondition for the treatment is that the retina is healthy. Hereditary cataract may occur simultaneously with PRA, however PRA is usually linked to a secondary cataract. (Vanhapelto, Lappalainen)

Deformation of the eye and microphthalmia-syndrome (MOA)

There are some types of congenital eye deformations in Irish Soft Coated Wheaten Terriers: microphthalmia – a syndrome of eye deformation that can be referred to with the term MOA (Multiple ocular anomalies) or ocular dysgenesis.

The form of this congenital deformation varies; it involves microphthalmia, or small-eyedness. The eye might have various different types of deformations or development problems, e.g. persistent pupillary membranes³ and coloboma⁴ and cataract. In lenient cases the eyeball may be only slightly smaller than usual or, at the worst, the normal structure of the eye is missing completely. In lenient cases, the eyesight of the dog can be normal or nearly normal; in difficult cases, the dog can be fully blind. The dog's eyes might look strange from the outside, with the eyeball smaller than normal. The dog may look crooked, thus the white of the eye is showing more on the other side than on the other. Slight alterations do not show on the surface, though.

In Finland, eye deformations and microphthalmia have occurred in one litter of Wheaten Terriers born in 2011. There have been similar cases in the breed in other countries as well.

In the last five year period, 304 official eye examinations have been carried out, where in addition to cataracts, extra eyelashes have been found; five dogs had distichiasis and two ectopic cilia⁵. Also cases of PHTVL/PHPV) one in stage 1 and four with an open diagnosis⁶ were found and three with open diagnosis of PPM.

Table 12. Official eye examinations in 1996 - 2010 according to year of birth (KoiraNet)

Birth year	Examined pcs	Examined %	Healthy %	Cataract	PHTVL / PHPV
1996-2000	98	13,4	96	2	
2001-2005	196	23,4	94	3(4*)	
2006-2010	304	15,5 **	93	1(2*)	1
Total				6	1

³PPM or persistent pupillary membranes are congenial are strands of tissue in the iris, which are remnants of blood vessels and films from the time before birth. The most serious stages, where the remnants are inside the anterior surface of the lens and/or in the inner lining of the cornea, or are very broad, can affect vision.

⁴ Coloboma is a dent or hole somewhere in the structure of the eye, e.g. in the point of an optical nerve, in the sclera or in the iris, that may be missing a piece. The effect on vision is usually small, depending on the severity of the coloboma.

⁵ Extra lashes, that protrude either inside the the lashline in the inner rim of the eyelid (distichiasis) or from the inner lining of the eyelid (ectopic cilia)

⁶ Persistent hyperplastic tunica vasculosa (PHTV)/persistent hyperplastic primary vitreous (PHPV); the fetal blood vessels between the lens and the retina has not atrophied normally after birth. The find is divided according to severity into six stages, where stage 6 means that the eye is blind. In the most lenient stage (1) only small pigment dots can be seen in the posterior surface of the lens, which do not affect eyesight and will not change as the dog grows older.

Elbow dysplasia

Elbow dysplasia causes pain in joints, limping and arthritis in the front legs. Arthritis in elbow joints is more severe than in the hips, because two thirds of the dog's weight is supported by the front legs. The variability of hereditary defects in different breeds is not well known. In addition to hereditary factors, feeding amongst other things appears to cause elbow dysplasia. Only during recent years the elbow joints of Irish Soft Coated Wheaten Terriers have become to be examined extensively. The studies have proved necessary as one fifth of the Wheaten Terriers examined have had symptoms of elbow dysplasia, mostly first degree variations.

Elbow dysplasia is the most common cause for joint pain and limping of the front legs in large dogs. There are different forms of elbow dysplasia, including the fragmentation of the inner part of the coronoid process (processus coronoideus), osteochondrosis of the inner part of the humeral condyle (condylus humeralis) and ununited anconeal process of the elbow (processus anconaeus). Incongruity of the elbow joint (disparity of the joint surface) is suspected to be an important reason for all of the growth defects mentioned above and also as another form of elbow dysplasia.

The hereditary mechanism of elbow dysplasia is unclear. Heredity is qualitative; it is affected by various different genes. One of these genes may be a greatly effective gene. The type of the growth defect varies from breed to breed, which may mean that there might be different genes causing it. Elbow dysplasia is more common in males, probably due to the larger weight of male dogs and possibly also because of hormonal factors. According to current knowledge, hereditary factors have a strong effect in the onset of elbow dysplasia, but also environmental factors play their part. In other words, with optimal nutrition the onset of elbow dysplasia might be avoided with an individual that has a hereditary proneness to it.

In all types of elbow dysplasia the symptoms begin in approximately 4-7 months of age. The most typical symptom is limping, that can be aggravated by strain or be most obvious after rest. The limping can be constant or occasional. It might be difficult for the owner to notice the limp, if the growth defect is bilateral. Occasionally the growth defect is in both elbow joints, though the dog only limps with one leg. Often the symptoms are only noticed in a fully grown individual, and then they are caused by secondary osteoarthritis. An ununited anconeal process of the elbow might not symptomize on a younger dog and it might be only found in an X-ray.

There is no extensive research of growth defects and the effectiveness and longevity of different surgical treatments. The benefits of surgical treatments are unclear, if the joints have clear signs of osteoarthritis. When left untreated, all types of elbow dysplasia lead to osteoarthritis. Even a leg that is operated on sometimes develops some stage of osteoarthritis, but it can be more lenient and can develop later than it would in an unoperated leg. Osteoarthritis of the elbow joint cripples the dog more severely than e.g. hip dysplasia, because approximately 60% of the weight of the dog is supported by the front legs. The most important treatment for elbow dysplasia is weight loss, restriction of exercise and NSAD's. In addition, medication to improve the composition of synovial fluid may be used.

In the Finland and Scandinavia the evaluation by X-rays of elbow joints is founded on signs of secondary osteoarthritis. It should be noted, that already a stage 1. change means, that the dog has a growth defect of the elbow joint, and those changes caused by arthritis. In Sweden, elbow dysplasia has decreased in breeds that X-ray the elbow joints of their individuals. This probably results from using almost only those dogs that have been diagnosed with healthy elbow joints for breeding. The BLUP index breeding values affects the selection of breeding dogs. The index takes into account the results of the dog in question but also results of all of the examined family members of the dog, and the effect environmental factors is reduced. BLUP indexes are formulated for many breeds for both hip and elbow joints. The precondition for these indexes is a sufficient amount of dogs. (Lappalainen)

Table 13. Elbow joint scans between 1995 and 2010 (Koiranet)

	Examined pcs	0	1	2	3
2006-2010	98	82 %	16 %	2 %	0 %
2001-2005	18	78 %	22 %	0 %	0 %
Total	116	81 %	17 %	2 %	0 %

Table 14. Elbow joint scans between 2006 and 2010 (KoiraNet)

	2010		2009		2008		2007		2006		Total	
Degree 0	29	85 %	15	68 %	23	88 %	11	85 %	2	67 %	80	82 %
Degree 1	5	15 %	5	23 %	3	12 %	2	15 %	1	33 %	16	16 %
Degree 2	0	0 %	2	8 %	0	0 %	0	0 %	0	0 %	2	2 %
Total	34	100 %	22	100 %	26	100 %	13	100 %	3	100 %	98	100 %

4.3.2 Other hereditary diseases and defects

Some knee examinations have been carried out on Wheaten Terriers, and no problems were reported, even though some knee surgeries have been made. Issues related to knees have been a practical problem with sports like agility.

The Irish Soft Coated Wheaten Terrier has been reported to suffer from the following diseases: skin conditions that cause allergies or atopy, urinary development disorders, hernias in the navel and groin area and sometimes narrow mandible (lower fangs pressing against gums) and other biting-related problems. There have been reports of hearing impaired Irish Soft Coated Wheaten Terriers in England where deafness-tests are performed on puppies. Ordinary and lenient hereditary defects, such as testicular issues, pigment deficiency or a twisted tail, are found occasionally. A dog that has some kind of a development problem, deformity or chronic illness should not be used for breeding. Severe allergies or atopy are highly hereditary.

Atopy

Causing infection and itching, atopy is a skin condition caused by hereditary predisposition. Reasons for the condition are heredity as well as many other factors, such as the living environment of the dog and surrounding conditions. Atopy is a lifelong condition that is controllable, but not curable. Food allergies are far rarer in dogs than atopy, and only 10% of dogs that have dermatological symptoms suffer from food allergies, in the case where the dog usually has also digestive problems (flatulence, diarrhoea). An atopic or allergic dog should not be used for breeding.

Atopy is usually a problem for a young adult dog and the symptoms emerge in most cases of atopy in dogs between the ages of 6 months to 3 years. Allergic flu, asthma and conjunctivitis of the eye are rare in dogs. A dog reacts with its skin, and atopy is the most common skin condition in dogs. Continual or repetitive cases of bacterial and yeast infections of the skin has led researchers to believe that atopic dogs suffer from a malfunctioning cellular immune response. Typically, the symptoms of atopy decrease and increase seasonally at least at the beginning of the disease. If the symptoms are continual from the beginning, food allergies could be suspected as the cause.

Atopic skin itches and, as a result, the dog scratches its skin raw. The fur is flaky and in bad condition, thin and even bald in places. In the areas where the dog scratches the most, the skin thickens as a result of continuous scratching and gnawing, and the skin also darkens in colour. Changes are located in the face (lips and eye area), ears, paws, legs and chin and under the belly (armpits and groin). Some dogs react to the constant scratching through behaviour changes; they might for example become irritable. Repetitive ear infections are one of the most common dermatological symptoms of a dog with atopic skin.

The reason for a dog's itching should be thoroughly examined. If an explanation is not found and the

dog has symptoms corresponding to an atopic diagnosis, the dog is either skin tested or a blood sample is taken to find an allergy antibody. There are various forms of treatment for a dog with atopic skin. The most important is to decrease predisposition to allergens, e.g. repetitive baths and changes in the living environment. If these procedures and controlling secondary bacteria and yeast infections do not lead to desired results, hyposensitization and/or medical treatment can be given to the dog depending on allergy test results.

4.3.3 Most common causes of death

Table 15. The most common causes of death based on 82 reported cases (Koiranet)

Cause of death	Lifespan average	Altogether
1. Old age (natural death or put to sleep)	14 years 2 months	27 %
2. Tumour diseases, cancer	11 years 6 months	24 %
3. Cause of death not notified	9 years 5 months	18 %
4. Put to sleep without a diagnosed illness	11 years 3 months	7 %
5. Put to sleep due to behavioural problems	5 years 0 months	6 %
6. Other reasons altogether		18 %
All reasons altogether (82 cases)	11 years 1 months	100 %

4.3.4 Breeding

Table 16. The average size of a litter (Koiranet)

2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
6,2	6,5	6,6	6,5	6,3	6,2	6,2	6,7	6,7	5,6	5,8	5,6	6,3	4,9	5,4

The average size of a litter based on records over the past 15 years is 6,1 (puppies). The birth weight of puppies varies between 230 and 300 grams. Reports on difficulties with mating or gestation are rare. Mothers usually give birth without problems and take good care of their puppies. The mortality rate is relatively low, as are the rates of congenital diseases and malformations.

4.3.5 Features that expose Irish Soft Coated Wheaten Terriers to diseases and breeding problems

Being a breed of moderate size and structure, Wheaten Terriers do not have anatomical features that would expose them to diseases or health problems. Their structure does not complicate the breeding either.

4.3.6 Summary of the most essential health and breeding problems

The Irish Soft Coated Wheaten Terrier is a breed of relatively long age and good health. Nevertheless, it is prone to some hereditary diseases, namely protein-losing disorders and renal diseases, which are

consequences of too tight line-breeding. Some bone and joint diseases occur but they rarely cause problems in the everyday life of Wheaten Terriers since the breed has a relatively light build. Some Wheaten Terriers also suffer from allergies or atopic skin. Even though the connection between food allergies and the protein-losing disease has been studied, it is still not sure whether or not they have a cause-and-effect relationship. (Vaden 2000)

Wheaten Terriers do not have significant breeding problems.

4.4 Appearance

The appearance of a Wheaten Terrier can best be described with the adjectives strong, well-balanced and moderate. All exaggerated features should be avoided. Wheaten Terriers should have the typical features of their sex. Wheaten Terriers are medium-sized, short coupled and well-built terriers that give the idea of strength. They have square-proportionate bodies that should not be too leggy or too low to the ground. Although some Wheaten Terriers can be somewhat taller than their average height at the withers, they should not appear too long-bodied. However, under no circumstances should anyone breed Wheaten Terriers that are taller than their average height at the withers, have steep shoulders, have joints with excessive angulation or have a tiptoeing gait. One should be able to recognise Wheaten Terriers judging only by their outlines; a Wheaten Terrier must not look like a wheaten-coloured Kerry (Blue) Terrier. Compared to an Irish terrier, the Wheaten Terrier has a significantly stronger structure.

A single coat is one of the breed's characteristics, and an adult Wheaten should have a full, silky soft coat that is wavy or softly curled. The coat sheds very little hair and the colour can vary from clear wheaten to warm golden reddish – including all shades of wheat. Nevertheless, the shade of an adult dog's coat must clearly be wheaten; it must not appear brown or white. Black or gray hairs are allowed in the coats of puppies, but not on adult Wheaten Terriers. The coat must not be harsh, frizzy or dull, and under no circumstances kinky, thick, woolly or cottony textured.

4.4.1 Breeding standard

FCI-Standard N° 40 / 25. 04. 2001 / GB

IRISH SOFT COATED WHEATEN TERRIER

Origin: Ireland.

UTILISATION: Wheaten Terriers were always used by small farmers to kill vermin or help with the work about the farm. They were used for a long time in the difficult job of hunting badgers and otters.

BRIEF HISTORICAL SUMMARY: The history of the Irish Soft Coated Wheaten Terrier has been somewhat obscured by its closeness to the other Irish Terrier breeds. The Wheaten is probably the oldest of the four breeds. Its existence for at least 200 years can be inferred from textual references to "soft-coated" dogs. The relation of the modern Irish Terrier to the Wheaten, though less well documented, appears to have been the result of deliberate breeding experiments. So the humble Wheaten probably has a fairly mixed ancestry. Despite the long history of the Wheaten, it wasn't until 1937, that the Soft Coated Wheaten was officially recognised by the Irish Kennel Club. The breed has grown steadily in popularity since and is now well known world-wide.

GENERAL APPEARANCE: A hardy, active, short coupled dog, well built, giving the idea of strength. Not too leggy nor too low to the ground.

BEHAVIOUR / TEMPERAMENT: Spirited and game. Good tempered. Most affectionate and loyal to his owners. Most intelligent. A trusty, faithful friend, defensive without aggression.

HEAD: In general powerful without being coarse. Long, in good proportion to the body. Hair same colour as on body.

CRANIAL REGION:

Skull: Flat and clean between ears, not too wide.

Stop: Defined.

FACIAL REGION:

Nose: Black and well developed.

Muzzle: Foreface not longer than skull.

Jaws: Jaws strong and punishing

Teeth: Teeth large, regular; scissor or level bite (i.e. edge to edge) neither undershot nor overshot.

Cheeks: Bones not prominent.

Eyes: Dark, dark hazel, not too large, not prominent, well placed.

Ears: Small to medium, carried in front, level with skull. Dark shading on base of ear allowed and not uncommon, accompanied by a light wheaten coloured overlay. This is the only area of the dog where under-coat is allowed. "Rose" or "flying" ears are objectionable.

NECK: Moderately long and strong but not throaty.

BODY: Not too long. Length from withers to base of tail approximately the same as from ground to withers.

Back: Strong and level with even top line.

Loins: Short, powerful.

Chest: Deep, ribs well sprung.

TAIL: Well set, not too thick. Carried gaily but never over the back. The tail is docked so that two thirds of its original length remains assuming it is in proportion to the dog (NB: docking is prohibited in Finland). An undocked tail is permitted.

LIMBS

FOREQUARTERS:

Shoulders: Fine, well laid back, muscular.

Forelegs: Perfectly straight viewed from any angle. Good bone and muscle.

HINDQUARTERS: Well developed with powerful muscle.

Thighs: Strong and muscular.

Stifles: Bent.

Hocks: Well let down, turned neither in nor out. Hind dewclaws should be removed.

FEET: Small, not spreading. Toenails preferably black but varying dark colours allowed.

GAIT / MOVEMENT: Straight action fore and aft, going and coming. Elbows tucked in. Side view: free, light co-ordinated movement.

COAT

HAIR: A single coated dog. Texture soft and silky to feel and not harsh. Young dogs excluded from this. Trimming permitted.

Trimmed dogs: Coat cut close at neck, chest and skull, and left especially long over eyes and under jaw. Whiskers encouraged. Profuse feathering on legs. Body coat trimmed to follow the outline of the dog but not sculpted. Tail trimmed close and neatly tapered.

Untrimmed dogs: The coat at its longest not to exceed five inches (12,7 cm). Soft, wavy or loosely curled with the sheen of silk. Under no circumstances should the coat be "fluffed out" like a Poodle or an Old English Sheepdog. Dogs shown in this condition should be heavily penalised as they give a wrong impression of type and breed. Special attention is drawn to puppy coat development. Pups are seldom born with the correct coat of maturity; care must be taken when assessing this point. They go through several changes of colour and texture before developing the mature adult coat. This usually occurs between 18 months and 2½ years.

Pups: Are seldom born with the correct colour or texture coat. They come reddish, greyish and sometimes clear wheaten. The masks are generally black. Sometimes there is a black streak down the centre back or black tips to the body coat. These dark markings clear away with growth.

COLOUR: A good clear wheaten of shades from light wheaten to a golden reddish hue.

SIZE AND WEIGHT:

Height at the withers: Dogs 18-19 inches (46-48 cm).

Bitches somewhat less.

Weight: Dogs 40-45 lbs (18- 20, 5 kg).

Bitches somewhat less.

FAULTS: Any departure from the foregoing points should be considered a fault and the seriousness with which the fault should be regarded should be in exact proportion to its degree and its effect upon the health and welfare of the dog.

- Nervousness. Viciousness.
- Nose any colour other than black.
- Undershot mouth. Overshot mouth.
- Overall mature coat not clear wheaten colour.

ELIMINATING FAULTS:

- Aggressive or overly shy.
- Yellow eyes.
- Dull, thick, woolly or cottony textured hair.
- White coat. Brown coat.

Dogs carrying any of the above eliminating faults should never be bred from.

Any dog clearly showing physical or behavioural abnormalities shall be disqualified.

NOTE: Male animals should have two apparently normal testicles fully descended into the scrotum.

(Source: <http://www.fci.be/nomenclature.aspx>)

The coat is a distinctive and important feature of Wheaten Terriers. Although the coat quality has improved during recent years, there is still room for further improvement. Excellent, silky and shiny coats are rarely seen in dog shows, but, on the other hand, neither are overly woolly or frizzy coats. The colours of the coats could also be better. Gray is seen somewhat less than before, but more and more Wheaten Terriers have rather light wheat coloured coats these days. Darker shade is often seen on the ears, although the tendency has been shifting towards a lighter shade. Some livery brown colour-flawed puppies are also born.

Some Wheaten Terriers are too low to the ground. Although the average size of Wheaten Terriers has decreased, it nevertheless still matches the breed standard. However, too large males and too small and slight bitches still occur. Some males have lacking typical features of their sex. The width of the chest is usually good, although some males have a short chest that is not deep enough. Other problems can be too straight hind legs and a tail too far over the back.

Another distinctive feature of Wheaten Terriers is the general look of a terrier. This can be disturbed by too big and hanging ears that are still seen in shows, although less than before. Most Wheaten Terriers have decent heads, but some have too short heads with a coarse skull attached to a weak muzzle.

Wheaten Terriers should have strong jaws; a level bite is accepted. Some occlusal problems occur: for example, the lower front teeth tend to form an uneven row. Especially undershot bites are still rather common, as well as a narrow lower jaw. Even some individual overshot bites occur.

4.4.2 Dog shows and breeding examinations

A total of 37 % of all the Wheaten Terriers registered over the years 2006–2009 have been to a dog show at least once. The grading distribution has been: HYL (rejected) 0,5 %, T (acceptable) 0,5 %, H (good) 13 %, EH (very good) 24 %, ERI (excellent) 62 %.

Breeding examinations have not been arranged.

4.4.3 Appearance and the purpose of the breed

Since Wheaten Terriers were originally used as vermin killers and general purpose dogs, being able to move smoothly and effortlessly has always been an important quality of the breed. These days Wheaten Terriers accompany their owners in various indoor and outdoor activities, which still requires good health and the ability to move agilely. This is not a problem, thanks to the good health and unexaggerated structure of Wheaten Terriers.

4.4.4 Summary of the most essential appearance and structure problems

In the past few years, the breed has become more consistent. The quality of coats has improved and tails are, for the most part, impeccable. Nevertheless, the breed still remains somewhat heterogeneous. Most Wheaten Terriers are mediocre when it comes to appearance. Even so, there are only a few extremities: extremely weak dogs are rarely seen in dog shows but neither are extremely good ones.

Deficiencies are most often detected in the head area, the overall appearance, the chest and the hindquarters. There is also room for improvement in the proportions and the efficiency of movements. The posture typical of terriers is often missing, especially during movement. Paddling front gaits and cow-hocked rear gaits are rather common among Wheaten Terriers. The paddling front gait is caused by a straight and wide front with the elbows loosely connected to the body. Steep loins and a lack of angulation cause short and stiff movements in the hindquarters. In extreme cases the front of the dog bends down. Wheaten Terriers should always have a good and balanced angulation.

Striving to maintain the height at the withers within the limits of the breed standard might result in too short limbs and distorted proportions.

A strong head and wide jaws often result in a level bite which can later turn into an undershot bite, causing harm to the evenness of teeth. A typical problem for terriers with a narrow head and narrow jaws is that the lower canine teeth tend to push through the gums.

Since the so-called thicker coat type is a recessive characteristic, it can be reduced from the population relatively easily. Parents that have the so-called Irish coat mentioned in the breed standard can still produce litters with thick-coated puppies. In other words, these puppies show the recessive trait in their phenotype. Even if neither one of the parents shows the recessive trait of a thick coat in their phenotypes, they still carry the trait in their genotypes. Solely Irish-coated puppies are produced when one parent has the Irish coat and is free from the recessive trait of the thick coat, regardless of the other parent's coat. If both parents are free from the recessive coat trait, their litter will have Irish coats only and, furthermore, the recessive trait will not be hereditary. However, two Wheaten Terriers with a thick coat can only produce puppies with a thick coat.

A liver coloured nose is also a recessive trait⁷. In order to show in the phenotype, the liver colour must be inherited from both parents. However, the carriers of the liver colour gene have perfectly normal phenotypes: they have black pigment in their noses. Carriers can be recognised with genetic testing⁸.

⁷ Genotype BB = black pigment; only black pigment will pass on, Bb = black pigment with liver colour as a latent trait; liver colour will pass on, bb = liver colour pigment

⁸ For example, C128B Canine Coat and Nose Color Test, HealthGene

5 SUMMARY OF THE IMPLEMENTATION OF THE PREVIOUS BREED-SPECIFIC BREEDING STRATEGY 2007–2010

The first breeding strategy for Wheaten Terriers and Kerry Blues was approved on 10 February 1991 in the annual meeting of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland (Kerry- ja vehnäterrierikerho ry). This breeding strategy was revised and reapproved in the annual meeting on 5 February 1994. The breeding strategies for Wheaten Terriers and Kerry Blues for the years 2002–2006 were approved in the annual meeting on 24 February 2002.

The latest breeding strategy for Wheaten Terriers was approved first in the annual meeting on 26 February 2006, then in the Finnish Kennel Club on 13 December 2006 and it came into effect on the 1 January 2007.

5.1 Rates of the most often used breeding dogs

Table 17. Males with the most offspring during the generation of 2007–2010 (Koiranet)

#	Male	Year of birth	litters	puppies	% share	cumulat. %
1	Conall Von Der Schönen Lausitz (D)	2005	7	57	7,47	7
2	Dog Rose Gold Garibaldo (S)	2006	5	31	4,82	12
3	Brookdene Springsteen (FRA)	2001	4	30	4,67	17
4	Brookdene U.R For Karafill (FRA)	2003	5	30	4,67	22
5	Grebello Be Gorgeous	2000	4	29	4,51	26
6	King Of Rock Kni-York (CZ)	2006	4	29	4,51	31
7	Jazz Dancer De Morrigan (NL)	2003	4	28	4,35	35
8	Röhvelin Blame It On Me	2003	5	22	3,42	38
9	Veinriver's Legolas	2004	3	21	3,27	42
10	Villa Rosas Seanan (S)	2007	3	19	2,95	45
11	Mil Mear Geragold Yankee Cowboy (USA)	2007	3	19	2,95	48
12	Röhvelin Friendly Look	2004	2	16	2,49	50
13	Honeylee's Lord Of My Heart (D)	2003	2	15	2,33	52
14	Boundary Oak Mercury	2004	3	15	2,33	55
15	Saffron-Spice (S)	2006	2	15	2,33	57

The limit of overuse is 46 puppies (breeding strategy 2011).

During the examination, there were 56 males used for breeding (generation 2007–2010). During the examination, 57 % of the puppies born were offspring of the most used 15 males. During the examination, 50 % of the puppies born were offspring of the most used 12 males.

Table 18. The offspring statistics of the most used males over the years 2007–2010 (Koiranet)

		Hips		Elbow joints		Eyes	
Male	Year of birth	examined %	sick %	examined %	sick %	examined %	sick %
Conall Von Der Schönen Lausitz (D)	2005	17	45	16	0	21	0
Dog Rose Gold Garibaldo (S)	2006	6	0	3	0	3	0
Brookdene Springsteen (FRA)	2001	11	10	1	0	9	0
Brookdene U.R For Karafill (FRA)	2003	41	20	19	0	19	0
Grebello Be Gorgeous	2000	32	12	17	0	28	7
King Of Rock Kni-York (CZ)	2006	10	33	10	0	10	33
Jazz Dancer De Morrigan (NL)	2003	22	0	2	0	18	11
Röhvelin Blame It On Me	2003	9	0	9	0	0	0
Veinriver's Legolas	2004	19	0	5	0	24	0
Villa Rosas Seanan (S)	2007	11	0	5	0	5	0
Mil Mear Geragold Yankee Cowboy (USA)	2007	0	0	0	0	0	0
Röhvelin Friendly Look	2004	10	0	5	0	10	0
Honeylee's Lord Of My Heart (D)	2003	24	0	18	0	24	0
Boundary Oak Mercury	2004	33	20	0	0	33	0
Saffron-Spice (S)	2006	27	0	20	33	40	0

The statistics show the amount of examined offspring of a male compared to the total amount of its offspring. The amount of sick individuals has been counted from the group of examined dogs. The males whose offspring have been diagnosed with hip dysplasia all have healthy hips. The eye diseases shown in the statistics are caused by distichiasis, a condition in which small eyelashes abnormally grow on the inner surface or very edge of the eyelids (2), and undefined additional eyelashes/hair (1).

5.2 Realisation of the previous breed-specific breeding strategy

Goal	Measures	Result
Avoiding Matador breeding	Breeding strategy recommendation: One male should have a maximum of three litters per year, and the number of its offspring should not exceed 5 % of all registrations in a decennium.	Not even one male has exceeded the recommended annual number of litters. During the decennium of 2001–2010, one male exceeded 5 % of all registrations (5,8%). However, the recommendation is not strict enough, enabling the overuse of individual males.
Breeding combinations where the inbreeding coefficient stays below 8 %. The average target inbreeding coefficient should also be below 8 %.	The inbreeding coefficient limit is lowered from 10 % to 8 %.	The average inbreeding coefficient has remained slightly above the target (<9%), except for the year 2008 (7,9%). The long-term development has been positive.
The situation with hereditary renal dysplasia is good and stable, and the progress should be maintained.	Examination recommendation for breeding dogs. Results to be published in puppy referral. Carriers of PNP to be published in the annual Yearbook.	The situation has remained steady with no new disease cases. The last known dogs with the disease were born at the end of the 1980s.
Avoiding hereditary cataract and maintaining the good progress with PRA. Increasing the amount of eye examinations.	Eye examination recommendation for breeding dogs. Cataract cases are monitored in the breeding program. Results to be published in puppy referral. Organising group eye examinations with a free examination for dogs over 8 years of age.	Of all the breeding combinations registered over the years 2007–2010, the majority (96 %) of both parents had had an eye examination. During the examination period of 2002–2005 the equivalent rate was 68 %. Only one cataract case (1,2 %) found of all Wheaten Terriers (altogether 82) registered and examined between the years 2007–2010.
Rejecting protein-losing diseases (PLE/PLN)	Taking the ERD examination into use. Examination recommendation for breeding dogs, results to be published in puppy referral. Guidance in breeding, f. ex. answers to enquiries. Reimbursing examination expenses for owners when deceased dogs have an unclear cause of death. Owners report diagnosed disease cases voluntarily to the Breeding Committee. PLE/PLN-cases to be published in the newsletter and the annual Yearbook.	No changes to the situation; 0-2 new disease diagnoses annually. The use of ERD examination is on the increase.
Rejecting hip dysplasia	Hip examination recommendation for breeding dogs, results to be published in puppy referral. Using dogs with D-class hips in breeding must be considered carefully. Dogs with D-class hips only to be bred with dogs with A-class hips.	Of all the breeding combinations registered over the years 2007–2010, the majority (96 %) of both parents had been examined. Of all the Wheaten Terriers registered and examined over the years 2007–2010, the amount of dogs with C–D-class hips was 19 %. Dogs with D-class hips have been used in breeding 4 times over the years 2007–2010.
Breeding good-tempered Wheaten Terriers adaptable to modern day life and various activities.	Timid, nervous or aggressive dogs must not be used in breeding.	Some temperament issues occur. Answers to the breeding questionnaire of 2010 brought up the concern about temperament issues.
Maintaining the Wheaten Terrier as approved by the	Recommendation of the appearance level of breeding dogs; awarded in a dog show with at	The level of the breed in Finland is still relatively good.

breeding standard of FCI on 25 April 2001.	least the grading EH (Very Good). Arranging a special dog show annually.	The majority of breeding dogs have been awarded in a dog show with at least the grading EH (Very Good).
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Thanks to the recommendations of the breeding strategy, none of the examined dogs were denied breeding due to hip problems. At that time, the recommendations allowed even the well-considered breeding of Wheaten Terriers with D-class hips.

Due to cataract or a suspicion of cataract, 1,7 % of the Wheaten Terriers whose eyes were examined were not allowed to be used in breeding. Thus, it can be stated that the breeding recommendations regarding health examinations have not been too strict. On the contrary, the recommendations should be tightened as far as hip results are concerned.

Nearly all Finnish breeding dogs and combinations (97 %) with a couple of exceptions have had eye examinations. In the examined group (a total of 100 litters), seven different foreign males have been used for nine litters. Most of the foreign males did not have eye examination results, which lowers the rate of examined combinations a little bit (into 88 %). Four new cataract cases were detected from the examined dogs during the inspection. Nevertheless, two of them were later declared healthy in the panel of the Finnish Kennel Club. Two of the Wheaten Terriers with cataracts had been registered over the years 2007–2010 and one of them was later declared healthy by the panel of the Finnish Kennel Club. In addition, there was one case where cataract was suspected. Altogether 280 examinations were conducted. Judging by the disease findings, the eye examination recommendation is still well justified.

According to the hip statistics, approximately 80 % of the examined Wheaten Terriers have healthy hips and only a small group of the breed population has D-class hips. Dogs that are used for breeding shall be above the breed average in desired characteristics, which is why there are no grounds to breed with Wheaten Terriers with D-class hips. The hip recommendations can thus be tightened. Altogether 90 % of the breeding combinations have had their hips screened.

A total of 86 % of all the Wheaten Terriers presented in dog shows and registered between 2007 and 2010 were awarded with at least the grading EH (Very Good). Therefore, the appearance recommendations do not ban too many Wheaten Terriers from breeding, and tightening the recommendations is not necessary, either.

According to recent elbow examination results, elbows should be studied more carefully in order to form an overall picture of the current situation. Examining the elbows alongside the hip screening is effortless, keeping additional expenses to the owner at a minimum. Therefore, when updating the breed-specific breeding strategy, it is viewed justified to add elbow inspections into the recommendation list for breeding dogs.

The amount of dogs not allowed to be bred with because of ERD and blood/urine test results cannot be estimated since the results that owners have voluntarily delivered to the Breeding Committee have been clear nearly without exception. After all, these tests have been taken in order to ensure that the dogs are suitable for breeding.

6 THE OBJECTIVES AND IMPLEMENTATION OF BREEDING

6.1 Objectives of breeding

The breeding practices of Wheaten Terriers should be steered towards the aim of producing physically and mentally healthy Wheaten Terriers that have a breed-typical ability to function. Wheaten Terriers should remain pleasant general purpose dogs that also take part in everyday activities. The breeding objectives as a whole form the foundation for all breeding practices. Resisting the most severe health problems, namely hereditary renal dysplasia (PNP) and protein-losing diseases (PLN/PLE) should be emphasized the most.

Another objective is to keep avoiding excessive inbreeding and “Matador breeding”, while at the same time using individual dogs fairly and keeping as many lines as possible in the breeding programme. The breeding practices of present day should serve the future breeding by creating a solid and stable foundation for it.

The progress with detecting renal dysplasia (PNP) and progressive retinal atrophy (PRA) and preventing them from passing down has been good. This progress should be maintained. Preventing the spread of hip dysplasia (HD), protein-losing diseases (PLN/PLE) and hereditary cataracts should be continued by, among other things, examining the breeding dogs properly also in the future. In addition to these methods, new examination recommendations are introduced in order to prevent the spread of elbow joint dysplasia.

When it comes to appearance, the main objective is to maintain the breed-typical Irish Soft Coated Wheaten Terrier in accordance with the FCI-Standard N° 40 / 25. 04. 2001 / GB. Approved by the Finnish Kennel Club on 2 May 2002, the Irish breed standard has also been translated into Finnish.

Breeding strategy objectives for the period of 2011–2015:

- The breeding stock continues to grow and hereditary diversity is preserved more efficiently: the generational sire/dam ratio is increased from 0.65 to 0.7.
- The number of offspring of an individual dog is kept under 46, which is currently equivalent to 7 % of four years' registrations
- The coefficient of inbreeding is lowered from the current 9 % into 8 % which is within the limits of recommendations.
- The group of Wheaten Terriers that has had a temperament test or an MH (Mental Description) test grows from 10 % into 15 % of all registered Wheaten Terriers.
- The group of dogs with C-class or D-class hips of all the examined Wheaten Terriers is reduced from 19 % into 15 % of all registered Wheaten Terriers.
- The amount of eye examinations on Wheaten Terriers remains at least the same: 24 % of all registered Wheaten Terriers should have eye examinations and all Finnish dogs used for breeding purposes should have healthy eyes.

- The amount of elbow joint examinations on Wheaten Terriers grows from 12 % into 20 % of all registered Wheaten Terriers. In the future, elbow joints are always examined alongside the hip screening.
- All Finnish dogs used in breeding will have ERD or blood/urine tests conducted. More accurate than traditional blood and urine tests, the ERD screening is primarily used in kidney examinations of dogs under 7 years of age.

6.2 Recommendations for breeding dogs and combinations

Only dogs with premium qualities should be used in breeding. Individual characteristics and the appearance, as well as possible faults and diseases, should all be taken into consideration when planning breeding combinations. Nevertheless, the individuals and the combinations should be looked at as a whole instead of clinging solely to criteria. The qualities of a breeding dog's close relatives and possible offspring will also be considered when defining the breeding value of a Wheaten. An ideal combination would consist of two individuals that complete each other; if one parent has a defect, the other one should not have the same defect. The same male does not match to all bitches, and, moreover, not all bitches need to be bred from.

A breeding dog should

- have a breed-typical temperament
- have a breed-typical appearance and structure
- not have severe hereditary diseases or defects which it would pass on.

The structure and breeding stock of the population

One stud dog should have a maximum of two litters per year and the number of its offspring during its lifetime should not exceed 46 puppies, which is equivalent to 7 % of a generation's (4 years) registrations.

The best combinations of breeding dogs are the ones whose inbreeding coefficient is less than 8 %, counting from the last eight generations. The average inbreeding coefficient should be less than 8 %. The rule of thumb is that, when looking at five generations, the inbreeding coefficient should be less than 5 % with perfect pedigrees (100 % certainty of the ancestors). So far, the inbreeding coefficients are calculated with Compuped or a similar program. Hopefully, the preconditions to start using the Koiranet system of the Finnish Kennel Club will improve in the future.

Behaviour and temperament

Wheaten Terriers that are used for breeding should have a sound temperament and breed-typical courage because this helps them to adapt to the everyday life of their owners and take part in many kinds of spare-time activities. Timid, nervous or aggressive dogs must not be used in breeding. Breeders should also advise the new owners of Wheaten puppies on how to train them to be sociable and nice family dogs, since Wheaten Terriers are known for their tricky temperament and need to be trained with determination from the very beginning. In order to map the breed's characteristics more closely and to define the ideal character profile, Wheaten Terriers should have a temperament test or an MH (Mental Description) test. Testing the breeding dogs is highly recommended. Nevertheless, requiring the tests for

each individual breeding dog prior to mating is an unreasonable demand, at least for the time being.

Health and breeding

The spread of the following hereditary diseases and defects should be prevented in the breeding of Wheaten Terriers by obeying the following guidelines.

Health in general

A dog with dysplasia or a deformation of some kind, or a chronic disease or allergy (i.e. constant skin symptoms or itches) must not be used in breeding.

Hereditary renal dysplasia, juvenile nephropathy aka PNP

Breeding dogs must be tested with ERD screening (microalbuminuria of urine) and/or blood and urine samples. A negative ERD test result is enough to rule out renal dysplasia, whereas a continuously positive result will lead to further examinations. The Breeding Committee will provide guidance if necessary.

Sick Wheaten Terriers, known carriers of renal dysplasia (the parents or offspring of diagnosed Wheaten Terriers) or full siblings must not be used in breeding.

Full siblings or the offspring of a known carrier are not recommended to be used in breeding. However, should an individual dog have other such excellent features that would make it an ideal breeding dog, it should be bred with such lines that do not have any known carriers of the disease, at least in the nearest generations. The Breeding Committee will provide further information and advice if you are planning on a special breeding combination with potential risks.

Protein-losing diseases PLN/PLE

Breeding dogs must be tested with ERD screening (microalbuminuria of urine) and/or blood and urine samples. A negative ERD test result is enough to rule out renal dysplasia, whereas a continuously positive result will lead to further examinations. The Breeding Committee will provide guidance if necessary. Dogs suffering from food allergies or continuous diarrhoea or vomiting must not be used in breeding.

A dog showing symptoms of a protein-losing disease (PLN/PLE) or having produced a puppy with the disease must not be bred with. Using the offspring of such a dog in breeding can only be considered if they are at least three years of age and

- are completely healthy (no allergies, chronic diarrhoea or vomiting, skinny bodies, dull hair etc.)
- have normal results in the following laboratory tests: the blood urea, creatine and phosphorus levels, white blood cell levels, haemoglobin and protein levels in urine
- have a negative ERD test result
- will be bred so that the pedigree of the puppies' healthy parent does not include the same ancestors as the pedigree of the dog with PLE/PLN symptoms
- will be bred with a dog that is not related to dogs with PLN/PLE symptoms

The Breeding Committee will provide further information and advice if you are planning on a special breeding combination with potential risks.

Hip dysplasia (HD)

All breeding dogs should have their hips screened because all breeding combinations should have as healthy hips as possible. A dog suffering from moderate (D) or severe (E) hip dysplasia shall not be used in breeding. If a dog suffering from mild (C) hip dysplasia is used for breeding, it should be mated with a dog with no signs of the disease (A). Also the hip screening results of the breeding dog's parents, grandparents, siblings and possible offspring should be taken into consideration when planning breeding combinations.

Elbow dysplasia

The elbow joints of at least one parent should be screened, with the result being 0 (normal). The overall grade is used internationally as the basis for breeding advice. Ideally dogs with normal (0) elbows should be chosen for breeding, and dogs with mild ED (1) should be mated with healthy breeding dogs. Dogs with moderate ED (2) or severe ED (3) should not be used in breeding. These recommendations concern only Wheaten Terriers born in 2011 or later, since the screening of elbows is most conveniently done alongside the hip screening.

Progressive retinal atrophy (PRA), hereditary cataracts, malformation of eyes and microphthalmia

The eyes of breeding dogs should always be examined. An eye examination is usually valid for 24 months. Sick dogs, known carriers (parents or offspring of a sick dog) or full siblings of sick dogs must not be used in breeding. However, should an individual dog have other such excellent features that would make it an ideal breeding dog, it should be bred with such lines that do not have any known carriers of the disease, at least in the nearest generations. The Breeding Committee will provide further information and advice if you are planning on a special breeding combination with potential risks.

Appearance

When breeding Wheaten Terriers for the sake of their appearance, the characteristics and size described in the breed standard should be maintained. Wheaten Terriers should always have the typical features of their sex. Breeding should aim to produce Wheaten Terriers that can move breed-typically, meaning that they have a balanced angulation and are able to move effortlessly. Breeding should also aim at producing Wheaten Terriers that have a breed-typical coat, because a wheaten coloured, silky and smooth hair is a feature that separates Wheaten Terriers from other terriers. Another objective of breeding is to avoid uneven bites, deficiencies in teeth and narrow lower jaws that cause the lower canine teeth to push through the gums.

Breeding dogs should always have the temperament, characteristics and structure that are typical for Wheaten Terriers. It is also recommended to use breeding dogs that have been awarded in a dog show with at least the grading EH (Very Good), meaning that they are very good representatives of the breed.

Summary of recommendations

Breeding dogs should

- have the temperament typical to Wheaten Terriers; timid or aggressive dogs must not be used in breeding
- have the characteristics and the structure typical to Wheaten Terriers
- not have severe hereditary diseases or defects, so that also the spread of these is prevented
- One male should have a maximum of two litters per year
- The number of offspring of an individual dog is kept under 46, which is currently equivalent to 7 % of four years' registrations
- The inbreeding coefficient should be less than 8 %, counting from the last eight generations
- It is highly recommended that the temperament of a breeding dog is tested, for example, with the MH (Mental Description) test
- The following examinations should be carried out on breeding dogs:
 - kidney functions: ERD screening (microalbuminuria of urine) of breeding dogs under 7 years of age (see appendix ERD-ohje ja -lomake) or with blood and urine tests. For bitches, the results are valid for 12 months from the date of the examination. Stud dogs should be examined before each mating (results valid for 12 months) or every six months.
 - hip dysplasia: hip screening
 - elbow dysplasia: elbow screening (concerns Wheaten Terriers born in 2011 or later)
 - cataracts, PRA, malformations of the eyes and microphthalmia: eye examination, results valid for 24 months
- The results of health examinations must fulfil the following requirements:
 - ERD screening: negative, or blood and urine test levels must be ok
 - hip joints: A, B or C; dogs with C-class hips mated only with dogs that have A–C-class hips
 - elbow joints: grade 0 or 1; dogs with grade 1 elbows mated only with dogs that have 0-1 graded elbows
 - examination: no signs of PRA/cataracts
- Awarded in a dog show with at least the grading EH (Very Good), meaning that it is a very good representative of its breed.

6.3 Procedures of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland

In order to maintain and further develop the good quality of the breeding stock, the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland will provide breeders and dog owners with information concerning the importance of genetic diversity and ways to maintain it. By distributing information we hope that owners and breeders of male Wheaten Terriers would recognise the importance of the matter.

The amount of offspring of an individual dog is monitored each year with the breeding database of the Finnish Kennel Club. The recommendations of the breed-specific breeding strategy regarding the amounts of offspring of a breeding dog per year and through its lifetime will be tightened.

The Breeding Committee will continue to calculate the inbreeding coefficients when planning the ideal breeding combinations. The Committee will also compile statistics of the coefficients and publish the annual average in the newsletter of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

The amount of temperament tested or MH (Mental Description) tested Wheaten Terriers will be increased by encouraging dog owners to have their pets tested. Information of the parents' temperament tests will be provided when new puppies are put up for sale. In addition to this, the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland will arrange two occasions for temperament or MH testing each year. The importance of a breeding dog's character will be emphasized, for example, by publishing articles in the K & V newsletter (in Finnish only). Temperament tests are recommended especially for breeding dogs.

Preventing the spread of hip dysplasia (HD) should be continued by tightening the recommendations of the breeding strategy. Dogs suffering from moderate (D) or severe (E) hip dysplasia must not be used in breeding. If a dog suffering from mild (C) hip dysplasia is used for breeding, it should be mated with a dog with no signs of the disease (A). The hip screening results of a breeding dog's parents will be provided when puppies are put up for sale.

In the future, group eye examinations will continue to be organised in order to get as many dog owners as possible to have their pets' eyes tested. The eye disease rate of older dogs will be mapped by encouraging dog owners to take their pets to group examinations. The eye examination results of a breeding dog's parents will be provided when puppies are put up for sale, with the validity of the results kept in mind. Preventing the spread of eye malformations and microphthalmia will be added as new objectives to the breeding strategy.

Preventing the spread of elbow dysplasia will also be added as a new objective and recommendation to the breeding strategy. The new recommendation will be taken into use gradually. Since this is a completely new recommendation, examinations will not be required from dogs born before the year 2011. In the future, however, elbow screenings are recommended to be carried out alongside with the hip screening. The screening results of a breeding dog will be provided when selling their puppies.

It would be important to increase the amount of ERD screenings in kidney examinations. This could be done by raising the dog owners' awareness of the screenings. ERD-ohje ja -lomake has been added into the breeding strategy as an appendix, and, furthermore, these instructions are also available on the web page of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland. The screening

results of a breeding dog will be provided when selling their puppies, with the validity of the results kept in mind.

The qualities and characteristics (for example, behaviour and health issues) of Wheaten Terriers will be surveyed through questionnaires for the members.

Information regarding the state and qualities of the breed, as well as the breeding goals and breeding recommendations, will be provided in the newsletter and web pages of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland and in training events organised for the club members and breeders of Wheaten Terriers.

New breeders should be trained before their Wheaten has its first litter: as the breeder applicant gets a statement for their kennel name application from the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland, they will also receive the breed-specific breeding strategy.

6.4 Threats, prospects and precautions

Population

Strengths: The breed is relatively common in Finland with a stable breeding stock

Weaknesses: The small size of the efficient population

Prospects: The use of imported dogs and foreign males in breeding has been on the increase; more different stud dogs to be used in breeding; more active breeders.

Threats: The size of the population will decrease; some old breeders have retired; registrations may start to decrease in the long run

Precautions: The generational sire/dam ratio is increased

Character and behaviour

Strengths: Most of the dogs have good temperaments; problems rarely occur with the right training methods

Weaknesses: Wheaten Terriers are not perfect for everyone; some behavioural problems occur

Prospects: Utilising the results of temperament and MH (Mental Description) tests

Threats: Temperament and behavioural problems increase

Precautions: Increasing the amount of temperament and MH (Mental Description) tests; careful selection and guidance of new puppy buyers

Health

Strengths: A healthy breed. Openness when it comes to health issues. The awareness level and activity of breeders.

Weaknesses: Hereditary diseases, especially PNP, PLN/PLE

Prospects: Discovering the hereditary mechanism of PLN/PLE and discovering means to identify the carriers of PNP and PLN/PLE

Threats: The diseases become more and more common; the openness among breeders is not as high in other countries as it is in Finland. Allergies and atopic skin become more general.

Precautions: All breeding dogs should be examined along the lines of the breeding strategy recommendations. Dogs with PNP, PLN/PLE will be listed. Breeders should be trained to identify risks.

Structure

Strengths: Exaggerated features occur rarely. Severe structural defects are seen rarely. The quality of coats has improved.

Weaknesses: The heterogeneity of the breed type. Malocclusions are relatively common. Movements

have room for improvement.

Prospects: The cooperation between breeders.

Threats: A narrow gene pool reduces the prospects of developing the breed's appearance and structure.

Precautions: Training judges to evaluate appearance. Spreading more information.

Marketing potential of the breed

Strengths: The breed has a good reputation. Many Wheaten owners want another Wheaten after their first one. Bitches are marketable.

Weaknesses: The demand for the breed, especially males, may have decreased a little. The supply is sometimes outstripping the demand. Wheaten Terriers are not perfect dogs for everyone.

Prospects: Raising puppies should remain responsible. It is still relatively easy to find good homes for especially bitch puppies. Good homes should be found in the future, too, as long as attention is paid to the temperaments and usage qualities of the puppies.

Threats: The demand for the breed keeps decreasing. Puppies will be sold to unsuitable homes, which results in increasing behaviour problems.

Precautions: The reputation of the breed will remain good if only enough time and energy are invested in developing the temperament and health of new puppies and training new puppy owners.

6.5 Planning the future and monitoring the breeding strategy

The Breeding Committee keeps on monitoring the development of the breed so that problems threatening the development of the breed can be tackled in time. Breeders will be trained and guided also in the future with the help of breed information publications and organised breeder meetings, lectures, seminars and so on.

The Breeding Committee is also responsible for providing breeders with advice and guidance if needed. The Committee gathers information (on, for example, registrations and examination results) and compiles it into statistics which are published along with various articles in different publications of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland. The breeding database of the Finnish Kennel Club is used for, among other things, compiling statistics. Furthermore, the Breeding Committee gathers and publishes essential breeding information that is missing from the database, concerning, for example, ERD screening and blood and urine test results and PLN/PLE and PNP cases.

Due to incomplete pedigrees in the breeding database of the Finnish Kennel Club, calculating the inbreeding coefficients is, at the moment, somewhat problematic. There are not enough imported dog generations in the database system to produce reliable and comparable statistics. Therefore updating and maintaining the individual database of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland is very important; based on the database, coefficients of eight generations can be counted with the Compuped program (or a similar program). It would also be important to develop and improve the Finnish Kennel Club's database so that the pedigrees could be updated and completed. As a result, breeders could count reliable and extensive inbreeding coefficients themselves based on the information of the database.

In the future, the Breeding Committee will organise different events and lectures for breeders. The Committee will also maintain relationships with breeders abroad in order to keep up with the breed's development abroad. Finally, The Breeding Committee will annually monitor the breeding strategy and make improvement suggestions if necessary.

Breeders and owners will be encouraged to have their dogs' eyes examined.

Breeders and owners will be encouraged to have their dogs' DNA gathered for genetic research purposes.

The Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland will arrange two opportunities for temperament or MH testing each year.

Before the next revision of the breeding strategy, a questionnaire will be distributed to members in order to map the temperament, behaviour and overall health state of the breed.

This breeding strategy will be kept up-to-date with the development of the breed, and it will be revised at least every five years at the annual meeting of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

The Breeding Committee gathers information and compiles it into statistics which are published in different publications of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland. The Breeding Committee also follows the breed's development through the KoiraNet breeding data system of the Finnish Kennel Club.

7 REFERENCES

Compuped/inbreeding coefficients.

Fédération Cynologique Internationale 2001: *FCI-Standard N° 40. Irish Soft Coated Wheaten Terrier*. [Online]. Available: <http://www.fci.be/nomenclature.aspx> [25.2.2013]

Geenitestejä / maksanväri HealthGene: <http://www.healthgene.com/>. Laboklin: <http://www.laboklin.de/>

Genetica vuosi: *Beskrivningsprotokoll MH. Irish Soft Coated Wheaten Terrier*. [Online]. Available: <http://www.genetica.se/mhdata/softcoated.pdf>

Genetica 2009: *MH-Rapport. Alla Raser med över 30 MH-beskrivna hundar*. [Online]. Available: <http://www.genetica.se/mhdata/4mh-medeltal.pdf>

Holmes, Maureen 1991: *The Softcoated Wheaten Terrier*. Maureen Holmes.

International Wheaten's Breeder Group 2008: *International Breeders' Seminar July 4 2008 in Stockholm, Sweden*. [Online]. Available: <http://www.wheatenbreedersgroup.com/presentations/presentations2008.html> [17.2.2013].

International Wheaten's Breeder Group: *The Agria Study on Wheaten Health in Sweden*. [Online]. Available: <http://www.wheatenbreedersgroup.com/Agria.pdf>. [17.2.2013]

Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 1995: *Käsikirja*. Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2001: *Vehnäterrierin jalostuksen tavoiteohjelma 2002 – 2006*. [Online].

Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2006: *Vehnäterrierin jalostuksen tavoiteohjelma 2007 – 2010*. [Online]. Available: www.kerryvehna.net/sendfile.php?fileid=195 [25.2.2013]

Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland: *The Homepage of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland*. [Online]. Available: <http://www.kerryvehna.net/> [25.2.2013]

Archives of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland

The Yearbooks of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 1993 - 2007.

The Health Questionnaire of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2003 (altogether 400 Wheaten Terriers).

The Breeder Questionnaire of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2005 (altogether 19 breeders of Wheaten Terriers).

The Breeder Questionnaire of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2010 (altogether 11 breeders of Wheaten Terriers).

Symposium of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland 2010.

KoiraNet. [The Finnish Kennel Club's breeding database]. [Online]. Available: <http://jalostus.kennelliitto.fi/> [25.2.2013]

Lappalainen, Anu. *Kyynärnivelen kasvuhäiriöt*. [Homepage of the Finnish Kennel Club]. [Online]. Available: www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/lonkkanivel.htm [25.2.2013]

Littman, Meryl P. 1999: Wheaten Terrier PLE-PLN. *Benchmarks*. Vol 27. No 2. 36–42.

Littman, Meryl P. 2012: Learning More About PLN in Wheatens. *Benchmarks*. Vol 40.

Character test results 2001 – 2010

Menna, Nina: *Koiran atopia*. [Homepage of the Finnish Kennel Club]. [Online]. Available: <http://www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/atopia.htm> [17.2.2013].

Mental Description test results 2007 – 2010

Mäki, Katariina 2011a: *Perimän monimuotoisuus ja jalostuspohja*. [Homepage of the Finnish Kennel Club]. [Online]. Available: <http://www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/monimuotoisuus.htm> [17.2.2013].

Mäki, Katariina 2011b: *Sukusiitos*. [Homepage of the Finnish Kennel Club]. [Online]. Available: <http://www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/sukusiitos.htm> [17.2.2013].

Mäki, Katariina: *Tehollinen populaatiokoko*. [Homepage of the Finnish Kennel Club]. [Online]. Available: http://www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/tehollinen_populaatiokoko.htm [17.2.2013].

Sarkanen, Marjukka 1995: Perinnölliset ja muut roduille tyypilliset sairaudet kerry- ja vehnäterrierillä. Teoksessa: *Käsikirja*. Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland.

Soft Coated Wheaten Club of America: *Wheaten Health*. [Homepage of the Soft Coated Wheaten Club of America], [Online]. Available: <http://www.scwtca.org/health/index.htm> [17.2.2013].

Soft Coated Wheaten Club of Great Britain 2000: *The Soft-coated Wheaten Terrier Breed Handbook. A Guide to the History, Health and Care of the Breed*. Soft-Coated Wheaten Terrier Club of Great Britain.

Svenska Wheaten Terrier Klubb: *Svenska Wheaten Terrier Klubb*. [Homepage of Svenska Wheaten Terrier Klubb]. [Online]. Available: http://www.swtk.se/swtk_2/ [17.2.2013].

Svenska Wheaten Terrier Klubb 2008: *Vilken mentalbeskrivnings-profil ska den perfekta wheaten terriern ha?* [Online]. Available: http://www.swtk.se/swtk_2/flik3/dokument/Idealprofil2008.pdf [25.2.2013]

Vaden, Shelly 2009: *What have we learned from the colony dogs?* [Homepage the Colony Dogs]. [Online]. Available: <http://www.colonydogs.org/learned2009Aug27vaden.html> [25.2.2013]

Vaden, Shelly 2000: Do Food Allergies Cause PLE/PLN in Soft Coated Wheaten Terriers? *Benchmarks*. Vol 28. No 1. 20–21.

Vanhapelto, Päivi & Lappalainen, Anu: *Yleisimmät perinnölliset silmänsairaudet*. [Homepage of the Finnish Kennel Club]. [Online]. Available: www.kennelliitto.fi/FI/jalostusjakasvatus/artikkelit/Silm.sairauksista.htm [17.2.2013]

8 APPENDICES

Appendix 1. Guidelines and regulations concerning e.g. breeders and the sale of a dog

1. Guidelines for the owner of a female dog

Before using a female for breeding, it should be carefully assessed whether the female fulfils the criteria laid out in this Breeding strategy.

At the time of whelping, a female must be at least 2 years of age but no more than 8, taking into consideration the physical condition of the dog. A female should not be used for breeding for the first time if older than 5 years.

The whelping interval must be at least ten months in compliance with the Finnish Kennel Club Guide to Litter Registration, with an exemption only to be recommended on very good grounds.

2. Guidelines for the owner of a male dog

A male should not be used for breeding unless it fulfils the criteria laid out in the Breeding strategy, nor should the owner of a male mate the dog with females that do not fulfil the criteria in the Breeding strategy.

A male should not sire more than two litters a year and if used for breeding for several years, the number of litters should be even lower. The number of offspring a male has during its life should not account for more than 7% of the registered dogs in one generation, i.e. four years.

3. The breeder's responsibility and the sale of a dog

When given to a new owner, a puppy must be at least 7 weeks old.

When selling puppies, the breeder must use the Finnish Kennel Club form for agreement on a sale of a dog and inform the buyer about the breed characteristics and any genetic diseases and defects that occur in the breed.

The breeder should bear in mind that even though the Irish soft-coated wheaten terrier is known as a low-allergy breed this does not guarantee its suitability for a family with allergies. Allergies can develop later on, and buying a dog of any breed should never be recommended to a person who is allergic to dogs.

The breeder should give adequate instructions, preferably in writing, on breed-specific care of the dog (e.g. the dog's coat), nutrition and training a puppy to become a sociable and adaptable family dog.

4. Other regulations

The general guidelines and regulations of the Finnish Kennel Club must be complied with in all aspects of breeding, besides which members of the Kerry Blue Terrier and Irish Soft Coated Wheaten Terrier club of Finland should follow the breed club's regulations and guidelines.

Appendix 2. Disease and carrier registers of the Breeding Committee: RD, PLE/PLN, multiple ocular anomalies

Genetic disorders that for the time being are not registered on the KoiraNet system, updated on 1 December 2011

Carriers that pass on renal dysplasia (RD) to their offspring

Research into the genetics of RD having indicated that this disease shows a recessive mode of inheritance, the following individuals should be considered as RD carriers because their offspring has died of RD. The cause of death was confirmed by pathologic examination.

Born in Finland:

Honeycoat's Applepie b. 16 April 1981 (Major Wheat Klipper - Major Wheat Osprey)
Major Wheat Barcarole b. 28 January 1983 (Maddalo Jubilee Prince - Major Wheat Geraldine)
Major Wheat Chardas b. 9 September 1971 (Farden Flanagan - Geijes Wheaten Anne)
Major Wheat Esmond b. 13 February 1973 (Fuscus - Geijes Wheaten Anne) in Sweden
Major Wheat Fine Fuzz b. 2 April 1985 (Valken Whirlybird - Major Wheat Yellow-Rose)
Major Wheat Hero Ine b. 27 April 1986 (Valken Whirlybird - Major Wheat Yellow-Rose)
Major Wheat Robinson b. 2 May 1980 (Maddalo Jubilee Prince - Major Wheat Geraldine)
Major Wheat Scimitar b. 7 October 1980 (Major Wheat Kilimandzaro - Maddalo Jubilee Princess)
Major Wheat Spearhead b. 7 October 1980 (Major Wheat Kilimandzaro - Maddalo Jubilee Princess) in Norway
Major Wheat Yellow-Rose b. 25 February 1982 (Maddalo Jubilee Prince - Major Wheat Geraldine)
Soft-Air King b. 17 April 1986 (Lontree's Lucky Star - Soft-Air Apricot)
Teinikedon Hahtuva b. 1 April 1990 (Sentence Coming-Star - Teinikedon Katinka)
Teinikedon Huntupilvi b. 14 August 1986 (Lontree's Lucky Star - Teinikedon Orhea)
Teinikedon Hurrikaani b. 14 August 1986 (Lontree's Lucky Star - Teinikedon Orhea)
Teinikedon Kumppani b. 25 February 1982 (Maddalo Jubilee Prince - Teinikedon Gina) in Sweden
Teinikedon Osaaja b. 28 June 1983 (Maddalo Jubilee Prince - Teinikedon Gina) in Sweden
Teinikedon Partahuisku b. 14 July 1983 (Maddalo Jubilee Prince - Teinikedon Entententen)
Teinikedon Sanavalmis b. 15 March 1989 (Sentence Coming-Star - Teinikedon Auguuri)
Teinikedon Taalari b. 27 January 1985 (Lontree's Lucky Star - Teinikedon Katinka)
Teinikedon Uijatar b. 12 March 1989 (Sentence Coming-Star - Teinikedon Liuhaparta)

Imported to Finland:

Maddalo Jubilee Prince (M) (GB/FIN) b. 5 July 1977 (Clonhill Caesar - Finchwood Allgold)

Reported cases of PLE/PLN in Finland

Finnish wheaten terriers diagnosed with symptoms typical of PLE and/or PLN.

Brenmoor's Formula One b. 4 May 1991 (Honeylee's Chevis Regal - Brenmoor's Alpha Phalfa) PLE
Boundary Oak Auriol b. 30 August 1992 (Brenmoor's Formula One - Wheatstone Pandora)
Grebnello Dazzling Dawn b. 12 July 2002 diagnosis 12/2010 (Elovainion Cosmus – Wildwheat's Pearl) PLN
Jollywheat's Amiral b. 13 January 1996 d. April/2005 (Major Wheat D's Tough Guy - Wheatstone Roxanne) PLN
Kaapelinkulman Josefin b. 27 September 2004 (Windisle Don Hugo – Wildwheat's Hope N Magic) PLE

Kastanja b. 30 August 2002 d. 30 September 2009 (Yonsabalene Jose-Porto – Nellie) PLN
 Prombter Ronja b. 21 January 1993 (Andover Hoot Done It - Teinikedon Yllyke)
 Prombter Savannah b. 15 September 1994 (Legacy Walkaway Joe - Wheatstone Sheena)
 Röhvelin Funny Lilly b. 13 October 1997 (Fairylakes He's A Real Swede - Gleanngay Lil Light O'Mine)
 Röhvelin Sister Lucky b. 2 January 2002 d. March/2009 (Röhvelin Mighty Surprise – Enjoy Best Colour) PLN
 Sandmarks Armada b. 29 December 2000 d. April/2005 (Wildwheat's Morris – Sandmarks Windy) PLN
 Sandmarks Zero b. 23 August 1998 d. 12 June 2009 (Red Devil De Morrigan – Sandmarks Unique) PLN
 Secret Line's Quick-Witted b. 19 August 1996 d. 23 February 2006 (Major Wheat Rainbows Brite – Whisper Hey Jude) PLN
 Soft-Air Storm b. 9 April 1992 (Milis Light Keeper - Soft-Air Rosita)
 Sunny Pearls Arnold Around b. 21 July 1998 b. March/2007 (Armagh Alister vom Sennhues – Merry Blue Mirabella) PLN
 Teinikedon Imanne b. 7 April 1990 (Sentence Coming-Star - Teinikedon Liuhaparta)
 Teinikedon Patriarkka b. 8 Dcember 1993 (Fairylakes He's A Real Swede – Teinikedon Ravakka)
 Teinikedon Uhkea b. 27 January 1985 (Teinikedon Partahuisku - Teinikedon Bamara)
 Wheat Hill's Emerald Drop b. 19 April 1998 d. December/2008 (Red Devil De Morrigan – Wheat Hill's Charming Pixie) PLE
 Wheatstone Terminator b. 10 August 1992 (Andover Hoot Done It - Teinikedon Taalia)
 Wildwheat's Ibril b. 27 January 1992 (Andover Hoot Done It - Wheatstone Nataalia)
 Wildwheat's Merlin b. 14 February 1997 d. 2004 (Red Devil de Morrigan – Wildwheat's Ginger Gilda)
 Wonderspike's Sophie b. 25 May1999 d . February/2005 (Wheatstone Denzel – Wonderspike's Elmyra) PLN

Reported cases of multiple ocular anomalies in Finland

3 puppies of Geijes E litter (not registered) b. 21 May 2011 (Geijes Cullen – Geijes Aquinna) diagnosis June/2011