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Breed-specific breeding strategy for the Danish / Swedish gårdshund

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In collaboration with Linda Laikre research project "Genetic Conservation status of three native breeds' Division of Population Genetics, Stockholm University Funded by the Swedish Kennel Club (SKC)

CONTENT

WORK WITH RAS	3
THE DANISH / SWEDISH GÅRDSHUNDEN	4
Historical uses	4
Current uses	4
Installation	4
A Swedish Nationalrat and native	4
NULÄGESBESKRIVNING	6
Conservation Genetic Status	6
hole	9
Mentality	12
Exterior	12
Overall objective for BREEDING WORK	13
General breeding recommendations	13
Valpförmedling	15
STRATEGY for further breeding	16
Reduced loss of genetic variation	16
Good Health	17
Reduction in the incidence of hereditary diseases	17
Good mentality and exterior	17
Interim targets for BREEDING WORK 2004-2008	18

WORK WITH RAS

Work on the design of the breed-specific breeding strategy for Danish / Swedish gårdshund occurring within the breed club for the Danish / Swedish gårdshund (RDSG) since 2002. The work is led by a group of members of the Board consists of Linda Laikre (geneticist at Stockholm University and member of RDSGs avelsråd), Anne Hansen (RDSGs appear rasexpert and leaders of RDSGs avelsråd) and in 2003 also Agneta

Herlitz (biologist, native expert and president of RDSG). This group has continually informed the Board about such progress, and discussed a variety of issues related to breeding strategies with the Board. The Board has also taken part in the necessary decisions and action taken on the design of the strategy.

The work has taken place in 2003 in collaboration with Linda Laikre research project "Genetic Conservation status of the three domestic breeds of dogs", and part of the results already arrived at the project have been used in work on the strategy.

The work has particular included:

- About fifteen arbetsmöten.
- Tata-mail and telephone discussions.
- A hälsoenkätundersökning designed and made in cooperation with the Department of Population Genetics, Stockholm University.
- Open member and uppfödardiskussioner at two workshops (Breeding Forums in August 2002, respectively. 2003 during the club's events "Tollarp Days")
- Reporting on the work of the member magazine Skåningen

THE DANISH / SWEDISH GÅRDSHUNDEN

The Danish / Swedish gårdshunden has long been found on farms, particularly in southern Sweden and Denmark, but it has also been disseminated in other Östersjöländer. The exact age of the breed are unclear, but the breed can count to Sweden (and Denmark!) Really old dogs. The current name was awarded the breed was recognized by the Swedish Kennel Club (SKC) and Danish kennelklub 1987. Previously known as the Scanian terrier or skåneterrier and further back was the known as råttehund, skrabba and muse dog.

The Danish / Swedish gårdshundens Canine origin is unclear. Probably, however, its main source and in pinscherraserna and partly in the British white jaktterriers respectively from which Jack Russell Terrier and Fox Terrier strains. Gårdshunden is placed in group 2 (Breeds of Pinscher and schnauzertyp, molosser and MOUNTAINDOGS). The Danish / Swedish gårdshunden is not yet recognized as a breed by the International Organisation FCI (Federation Internationale Cynologique) to which SKK linked. This meant that the race can not be exhibited at international exhibitions where the organizer is connected to the FCI. In Denmark, Finland and Norway, however, the breed recognized by the Kennel Club co-operative bodies and in those countries is shown breed regularly.

Historical uses

The Danish / Swedish gårdshundens main role has been historically to control rats and other rodents. The breed has also been used as a guard, herding, as pets and as a hunting and burrow. It has been a natural part of "interiors" on a Southern farm. A bit odd task has been to serve as a circus performer.

Current uses

Still serving some Danish / Swedish gårdshundar as råttjägare, but the vast majority are friendly and guard dogs. Approximately a dozen dogs are used as active hunting dogs to short-term pursuit of deer and other smaller game, retrieve, sought, etc. Several gårdshundar competed in obedience and service classes, as well as in agility and freestyle. Many people practice and also competes with tracking their gårdshundar.

Laying

Gårdshunden like to work both physically and mentally, and it requires no slight measure of activation. Although the breed is small in size and looks "cute" it is thus a rather "challenging" dogs. Between "shifts" is the Danish / Swedish gårdshunden a real pet who likes to crawl up in your lap and close beside the sofa. It usually think much about the heat and are often located and relaxing in the sun. It also loves to curl up under the covers.

The Danish / Swedish gårdshunden is a pure guard who immediately sound an alarm when strangers enter the home range. It produces fast turf why it often alarms even when the outsiders approaching picnic spot, träningsplanen and the like. Otherwise, it is not a "just" race, but on the contrary rather quiet. It works well with other dogs of various breeds and interact well with their rasgelikar. Gårdshundar can gather in large groups and socialize well with each other without either head or fight.

A Swedish Nationalrat and native

The Danish / Swedish gårdshunden are considered to be a Swedish Nationalrat. Although "shared" race with the Danes, but it has a fundamental and important part of its history rooted in southern Sweden. This is shown also the name "Skanska terrier" as it was known until the late 1980s.

As the breed is of ancient origin and have not been subject to distinct exterior förädlingsavel the breed is considered to be a "native" Just like rödkullan, gutefåret, linderödssvinet, göngegeten, Gotland rabbit, with several Swedish breeds. The term "native" we mean just that the races are old, adapted to their levnadsmiljö and unaffected by the intense förädlingsavel and crossings with the alien races. This also gårdshunden a heritage, a piece of living, Swedish / Danish history. From a genetic point of view are considered native breeds as genetic resources - genetic "reserves" in the more "original" genkombinatioer preserved than those remaining in the highly processed species. It is important that these genetic resources are managed in a sustainable manner. Breed club for the Danish / Swedish gårdshund is keen to breed can maintain its old world character and its status as a native. A hard-sided and breeding for certain exterior details are not desirable.

Current Situation

The Danish / Swedish gårdshunden seems to increase in popularity and in recent years has been around 300 puppies (including some individual dogs were imported from Denmark or mönstrats into) recorded a year (see Table 1). Since approval of the Kennel Club breed has been around. 3000 dogs registered in the country. As an indication of when data is missing dog dies, it is unclear exactly how many registered Danish / Swedish gårdshundar living today. But an estimated this could be a few thousand pieces. The number of undocumented individuals of the breed is unknown, but could certainly include a few hundred animals.

Table 1. Information gathered from Hundsport No 1-2 2001 and 1-2 2004

Antal registrerade dansk/svenska gårdshundar										
1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
109	144	133	165	145	200	226	273	223	339	294

Genetic Conservation status

A total of 126 dogs (96 Swedish and Danish 30) provides the race (so-called founders). These 126 animals made up of the dogs were numbered and the Danish dogs for which information on föräldradjur not registered in the Kennel Club database. It is likely, however, many of the dogs who was conscripted into 1987 in connection with the approval of the Kennel Club breed closely related to each other. It is also possible that the six dogs that mönstrats in later than 1995 (see Table 2) are related to one or more of the dogs that are already included in stamträdet although the information on that subject is missing. Further clarification of any släktförhållanden between the 96 Swedish dogs can only be done by the pedigrees of Swedish Dog Club (previously approved race as "Skanska terrier") fast (not computerized data). A review of these data is ongoing and will hopefully lead to more accurate information about relationships, between today's dogs.

Table 2. Dogs mönstrats into the Danish / Swedish gårdshundar after 1992 until 2003-03-01.

Namn	Registr.nr	Kön	Födelsedatum	Använd i aveln
Maxi	S47041/98	Tik	1993-06-20	3 kullar (13 valpar)
Mixan	S11512/99	Tik	1996-08-10	2 kullar (6 valpar)
Bebban	S44213/2000	Tik	1998-12-03	Nej
Rositta	S47796/2000	Tik	1999-06-15	1 kull (6 valpar)
Fia	S21109/2003	Tik		Nej
Toto	Ej klart	Hane		Nej

A genetic mapping stud book information from the individuals who are registered with the Kennel Club show that loss of genetic variation in the years since the breed was approved can be considered comprehensive. Only about 25% of the genetic variation among the 126 founderdjuren remain among dogs born in 1990 and later. In dogs born between 1997 and 2000 are only slightly more than 19% of the insert remains (Figure 1). Causes of the loss is mainly that all dogs were numbered not in use in breeding. Only 34 of the 96 "Swedish founders" have been breeding and some of them have making very few pups (Figure 2). Further loss depends on the continued breeding of animals in some cases, had little puppies, while a few isolated individuals have had many puppies. Due to no central registration of the dogs that die out it is impossible to say exactly how much of the original genetic variation that is left now live among dogs - but the trend is over 25% (hardly a dog born in 1989 and earlier are still living). Data on the size of the genetic losses will be amended also Swedish Dog Club pedigrees included in the analysis - the number of founder is significantly lower since many of the dogs that were numbered were not unrelated, but more or less closely related. So far work done has shown that total clarity in all släktskapsförhållanden between numbered dogs will not be achieved when säkerställd link between dogs that were numbered and stambokförda individuals of Swedish Dog Club of relatively large part is missing.

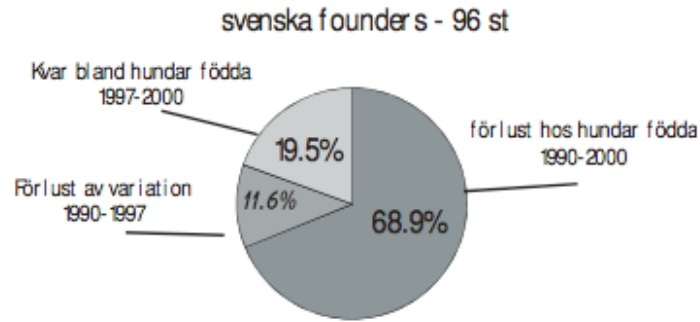


Figure 1. Loss of genetic variation from the 96 presumed unrelated dogs of Swedish origin who mönstrats in and form the basis of today's Danish / Swedish gårdshundar. These dogs' parents stand as "not registered" in the pedigree - probably many of the 96 dogs are closely related but this is not the Kennel Club information.

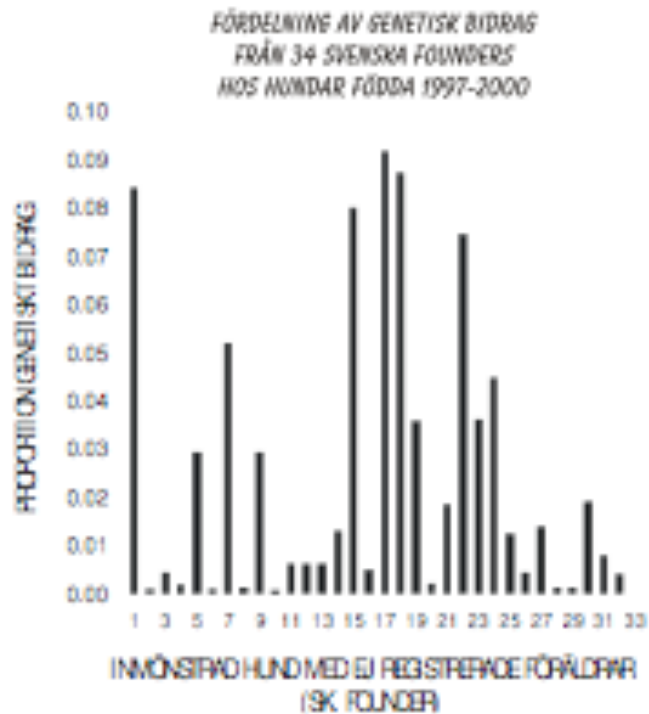


Figure 2. Genetic contribution of the 34 dogs that were numbered of Swedish descent whose parents are unknown (so-called founders) has been used in breeding. Added contributions from several of these dogs could lead to increased loss of genetic variation.

Until March 2003, a total of 168 males and 323 females used in breeding (of approx. 3000 registered individuals). The two males with the most puppies have contributed 114 and 100 puppies. Overall, however, only eight males receive more than 50 puppies. The vast majority (96 of 168) have fewer than ten puppies.

Table 3. Distribution of the number of pups among the 168 males who until 2003-03-01 used for breeding.

Antal valpar	Antal hanar
100 - 115	2
80 - 99	1
60 - 79	3
40 - 59	12
20 - 39	23
10 - 19	31
1 - 9	96

Table 4. Distribution of the number of pups among the 168 males who until 2003-03-01 used for breeding.

Antal valpar	Antal tikar
36 - 40	1
31 - 35	1
26 - 30	6
21 - 25	7
16 - 20	22
11 - 15	43
6 - 10	94
1 - 5	149

The two girls who received the most offspring have been born 37 or 31 pups (see Table 4). A bitch has had 37 puppies. The overwhelming majority of the brood are has become a top ten puppies. The skewed distribution in terms of number of pups per breeding contributes to the loss of genetic variation is so large that they are. Another consequence is that inbreeding has increased excessively fast. Meanwhile inavelsnivån relatively low in stock. Overall, only 22 individuals had a significantly hog inbreeding

(25% or higher, 25% obtained by brother-sister mating or parent-child mating, where individuals have 50% of their gene pool together). The overwhelming majority of the dogs have been inbred degrees of less than 10% (by comparison, the cousin mating leads to 6.3% inbreeding in the pups). It must be pointed out that these figures are based on the unrealistic assumption that the dogs that were conscripted into not related to each other. The further investigation of the older pedigrees will likely lead to a very different picture of inavelsnivåerna.

There is a large element of genes from Danish dogs in the Swedish population. Just under 25% of utgångsmaterialet is of Danish descent.

Health

A survey of health status gårdshundens ongoing since spring 2003, a survey of breed club members. The survey carried out in collaboration with Linda Laikre, Stockholm University and has a total blank January 31, 2004 333 questionnaires inkommit. Hälsoenkäten attached Skåningen 1 / 2003 which was published in May, and it is also available on the breed club's website. A preliminary compilation of 203 of the pending survey was conducted in connection with the Breeding Forum Linda Laikre led in August 2003. Among these 203 responses s balance even: 106 The first concerns the females and 97 of them males. Young dogs are strongly represented - all 91 of the surveys refer to dogs is 2 years and younger. Only 44 surveys refer to dogs that are 5 years and older. So far, only 10 Survey of dead dogs received.

A total of 12 different types of defects were reported among the 203 responses (Table 5) in addition to hip dysplasia. These defects occurring in frequencies between 0.5 and 3 percent of the reported material. Some of the diseases discussed below.

Table 5. Reported diseases and injuries among the 203 questionnaires received as of 30 July 2003.

Sjukdom/skada	Antal inrapporterade fall	Frekvens inrapporterade fall
Addisons sjukdom	1	0.5%
Allergi (mot människor och damm)	1	0.5%
Bettfel Underbett (3 st) Överbett (1 st) Tångbett (2 st)	6	3%
Epilepsi Förvärvat efter olycka (1 st)	2	1%
Hjärtfel	2 st	1%
Kryptorkism	3 st	1.5%
Legg Perthes	4 st	4%
Navelbräck	6 st	3%
Patella luxation	3 st	1.5%
Trång luftstrupe	1 st	0.5%
Tumör	5 st	5.5%
von Willebrands sjukdom	1 st	0.5%

Legg Perthes: The disease is also known as Perthes disease or Calvé disease. It represents a development disorder of the skeleton leading to bone in lårbenshuvudet broken down. The disease is very painful for the dog and its debut at about 1 year old. Commonly affected only on one hip, but surgery is required (where lårbenshuvudet removed). Besides the four cases reported hälsoblanketterna scanner avelsrådet to about 13 cases of the disease. The defect is considered hereditary and caused by a single gene that is required in two copies (from both the mother and father) for the damage to show itself. Legg Perthes, the damage along with höftledsdysplasin in dagsläget is most disturbing in terms gårdshunden.

Patellaluxation: patella can at this defect is moved from its normal outward or inward. Affected dogs may be partially or intermittently asymptomatic. More or less temporary halt may occur. In severe cases, chronic lameness and can give a kneeling gang. A hereditary component is considered to be in terms of defect.

Addison's disease: so the production of binjurebarkshormonet cortisol is impaired. The current risk of sudden death in so-called Addison-crisis. The disease has diffuse symptoms and can lead to depression, lethargy, weakness, but also "hyperactivity" are some of the characters. Lifelong treatment with corticosteroid requirements.

von Willebrand disease: a form of bleeding disorder. A defective protein that is normally involved in blodkoaguleringsprocessen leads to spontaneous bleeding or prolonged bleeding after injury or surgery. The defect is considered, caused by a dominant gene with incomplete penetrance (impact).

Legg Perthes

Along with hip dysplasia is considered Legg Perthes are the most serious health problems in Danish / Swedish gårdshund today. Besides the four cases reported through hälsoenkäterna is aware of 13 cases. Of these, however, five cases not fully characterized. There are also unconfirmed information from veterinary quarters that the defect is perceived as "not unusual" in gårdshunden. There is reason to believe that Legg Perthes can be inherited as an autosomal recessive allele - ie. as a "weaker" genes required in two copies (inherited from both mother and father) to defect to prove (Berit Wallin-Håkansson study of West Highland White Terrier). For the twelve cases of Legg Perthes in gårdshund s pedigree of Law. These pedigrees show that the origin of any individual Legg Perthes predisposition is not in any simple manner attributable to a single origin of dogs. At least three were numbered dogs must have carried the gene for explaining the occurrence known to date (one of the bitches that inmönstrats late Maxi S47041/98 Table 2 has had an offspring with Legg Perthes), but it is also possible that significantly more of the dogs were numbered bar gene. Given that several females and males that are used heavily in breeding has been isolated puppies with Legg Perthes is a risk that a possible predisposition has been widely spread in the stock.

Hip Dysplasia

Hip dysplasia is the most common health problem of Danish / Swedish gårdshundar. A requirement for valpförmedling by breed club since 2000 that the breeding animals both should be assessed and höftledsundersökta ua. alternative A or B with respect to hip dysplasia and no other negative comments as regards the hip. Breed club encourages höftledsröntgning of as many dogs as possible, and until 2001 was approx. 350 gårdshundar höftledsröntgats. Over 20% of them some level of HD and 13% have severe HD (Table 6).

Table 6. The number höftledsröntgade Danish / Swedish gårdshundar born in different years. In total, 16% of the dogs gave birth to the inclusive 2001 rayed.

Föd. år	ua	HD					Ej bedömda	Totalt röntgade	Totalt födda	% röntgade	% HD	% "lindrig" HD	% grav HD				
		A	B	1	C	2								3	D	E	
1978	1							1	4								
1980	1							1	13								
1986	1							1	27								
1987	2			1				3	37								
1988	3			1				5	86	1							
1989								1	68	1							
1990	5							5	115								
1991	3							3	106								
1992	2	1		1				4	90								
1993	5	2	1	2				10	129								
1994	6					2	1	9	135								
1995	9	3	3	5		2		22	134	16.4	31.8	22.7	9.1				
1996	19	4	1	2		1	3	31	162	19.1	22.6	6.5	16.1				
1997	18	5	2	2		1	2	32	156	20.5	21.9	6.3	15.6				
1998	15	12	7	3	5	2	2	49	197	24.9	30.6	16.3	14.3				
1999		34	10	1	11		3	61	238	25.6	27.9	19.7	8.2				
2000		48	17		6		4	75	260	28.8	13.3	8.0	5.3				
2001		20	7		4			33	200	16.5	18.2	12.1	6.1				
Totalt	90	129	48	18	26	8	6	13	6	2	346	2157	16.0	22.4	12.8	9.6	
Antal röntgade och bedömda				344													
Antal A, B eller ua				267													
Antal C eller 1				44													
Antal D, E eller 2, 3				33													

Mentality

A total of 60 Danish / Swedish gårdshundar Mental described. Of these, 37 obtained at a total of five beskrivningstillfällen which breed club arranged. Breed club has access to 45 minutes of description among those where only one case in which any form of aggressive behavior shown in one of the moments (torque 1c Contact Management, a case of option 1 Refuses management. Growls and / or tried to bite). The findings of mental descriptions are summarized in the so-called spider diagrams kontiunerligt updated on the Per Erik Sundgren's website (www.genetica.se). This graph shows that gårdshunden generally is lower than the average of the working dog breeds in terms of curiosity, activity, hunting and moving, play, connect, and some rädsreaktioner (övertäckningsmomenten) Gårdshunden is slightly higher than the average for working dogs with regard to certain threats and rädsreaktioner (torque with ghosts) . Manga gårdshundar has also proven to be skottberörda.

Breed club has identified antatet 0-classifications in official exteriörutställning distributed as a result of activity in 2001 and 2002. In 2001, there were 458 occasions when gårdshund shown at the exhibition, a total of 183 different dogs participated at these times (several of the dogs were thus appeared several times during the year - about one and the same dog shown at 5 exhibitions helped this individual therefore with 5 utställningstillfällen). Only one dog was awarded at a utställningstillfälle 1:00-price due. aggression against judges. The frequency of 0-price was thus in 2001 $1 / 458 = 0.0022$ (0.22%) or $1 / 183 = 0.0055$ (0.55%). In 2002, there utställningstillfällen 380 and 173 different dogs were shown. No 0-prize awarded it in 2002.

Exterior

Breedclub quest in terms of appearance of their breed is to preserve the "old type" of dog as it looked out at inmönstringstillfället and the old photos and pictures of individual dogs. Breed club for the Danish / Swedish gårdshund do not think that if some serious "issues" regarding the appearance of today's gårdshundar. Overall, the dog good material and it is important to manage this material in a reasonable manner. Some exterior features that are not fully typical, if true in the stock and the club bedsömer the following exterior features require attention henceforth regard utställningspremiering:

- The height - a tendency to increased size appears to present
- Färgteckningen - many dogs are övertecknade. White should predominate clearly when considering the dog from the sides / top. Colored sections to be used, in the form of "flattens" not large "chunks".
- Tails - manga tails are curled over the back (not allowed by the standard) - teeth - many dogs seem to lack a few teeth (mainly the PM1 and PM2)
- importance - some cases of obesity occurring. Gårdshunden will be hefty but not fat.
- Chest. Should be strong and hearty, and proportionally large in relation to the body, but it is important in the future that this move is not overdrive.

Breed club believes that too much focus currently is on;

-crosses. According to the ursprungliga breed standard (adopted in connection with inmönstringen) is the cross be gently curved. This text is no longer in rasstandrarden and many dogs, receive a reprimand for steep croup. Cross will however be gently curved and photographs of several of the numbered dogs show this karaktärsdrag. Heritage Breeds have often rounded cross, there is reason to believe that ancient dogs had more tendency to cross-rounded than today's dogs when they in many cases were used as circus dogs and in some cases even mastered the sla baklängesvolter.

Overall objective of the breeding work

Breed Club has adopted the following overall objective of breeding for the breed, as also in the future should be settled:

To achieve this objective, the breed club has adopted nedanstående general breeding recommendations. They too should henceforth be fixed.

Breed club GENERAL BREEDING RECOMMENDATIONS

Breed club for the Danish / Swedish gårdshund adopted nedanstående recommendations for breeding of the breed.

Minimized inavelsökning

Breeding stock should be chosen so that the level of inbreeding in the offspring does not become unnecessarily high. Generally, live close inbreeding be avoided as much as possible. In calculating the inbreeding of individual animals to be taken into account all known generations.

Retention of genetic variation

Breeding should be planned so that the loss of genetic variation does not happen too fast. The aim should be to increase the proportion of individuals in the population as the puppies.

Number of offspring per breeding animal

Healthy elderly males who still had not seen puppies should be given priority in the breeding process. Females who still had not seen puppies should be given priority. Is the female older than 4 years before the first litter live a veterinary's report in fitness in whelping obtained.

Single male or female should not leave more than 20-25 pups. Females may receive a maximum of 5 litters (Kennel Club rules). Mating between the female and male should not leave more than 10 offspring. Exceptions to this recommendation should only be done to minimize the loss of genetic variation.

The overall aim is to preserve the Danish / Swedish gårdshunden as a healthy, alert, capable, friendly and available farm and companion dog with it, has long documented, typical exterior.

The breeding work should be conducted so that the typical characteristics retained and the genetic variation that breed possesses not depleted. Breeding should be conducted without inkorskning of other races. Only the physically and mentally healthy animals will be used for breeding. Inavelsökningen in stock should be minimized. In calculating the inbreeding of individuals should all known generations considered.

Only healthy animals used for breeding

Only mentally and physically healthy animals used for breeding. Animals with congenital, severe, defects and diseases should generally not be used for breeding. Minor exterior defects can sometimes be tolerated. What is serious and tolerable decided after discussion within the club (including avelsrådet). The defects and diseases that have probably hereditary causes also observed caution in the use of close relatives of the affected animal in the breeding process. Animals who hold high risk of inherited defects and diseases should not be used for breeding. At such defect in which arvsgången considered autosomal recessive (the defect is found in the offspring of the gene is inherited from both mother and father), the same recommendations as for Legg Perthes (see below).

Hip dysplasia: Breeding stock should be assessed and höftledsröntgade A or B (or cleared under the old system) and without another remark defect on the hip.

Animals are assessed A or B, but where more than 60% of parents and siblings are assessed CE should not be used for breeding.

In the case of males who X-rayed after the age of 7 and never had problems with hips C can be tolerated. Males over the age of 9 years and have never had problems with her hip during her life time can be used for breeding without radiographic examination.

Legg Perthes: Dogs with Legg Perthes should not be used for breeding. Dogs with one or more full siblings who exhibit Legg Perthes should not be used for breeding. Dogs given one or more pups with Legg Perthes should not be used for breeding.
Pathellaluxation: Animals with pathellaluxation should not be used for breeding.

Navelbräck: Animals with navelbräck of such a magnitude that the bracket does not vanish but must surgery should not be used for breeding.

Bite and Teeth: Animals with frequent occurrence (eg undershot) should not be used for breeding.

Missing teeth (congenital): Animals that lack one or more rear molar (molars) and / or hörntänder should not be used for breeding. Animals with no more than three anterior molar (premolars) should not be used for breeding. Animals that do not have more than one front tooth should not be used for breeding. The use of animals that lack one or more teeth (except for only a few missing P1), breeding partner was all teeth.

Mentality: Only mentally healthy dogs should be used for breeding. Mental description of gårdshundar recommended in order to raise public awareness of the breed's temperament. First, it is desirable that a total of one hundred dogs Mental described to good statistical evidence must be obtained.

Exceptions: Exceptions to the above advice should only be done if the genetic "gain" of using a dog deemed to outweigh the risks of the spread of genes that give defects.

Exteriors requirements

Breeding stock should have obtained at least 2nd in quality in official shows. Females who are very small (less than ca. 5.5 kg) should generally not be used in breeding as the risk of caesarean section is considered major.

Exceptions: Exceptions to the above recommendations can be made if the genetic "gain" of using a dog is considered very high.

Puppy Brokering

Breedclub puppy brokering is currently only available to the hills after parents who are x-ray examination with respect to hip dysplasia (HD) and are assessed as A or B and no other negative comments with regard to hip. Furthermore, parent animals be made payable to official exterior exhibition and have received at least a 2nd quality. The latter rule can in some cases replaced by a exteriörbedömning by designated experts in the breed club for the Danish / Swedish gårdshund on the genetic gain with the use of a dog deemed to be particularly large.

STRATEGY for further breeding

Overall objective and the general breeding recommendations are to remain unchanged.

Reduced loss of genetic variation

Loss of genetic variation has been extensive over the years since the breed was approved by SKK 1987th To reduce the rate at which genetic variation is lost intends breed club for the Danish / Swedish gårdshund to promote:

1. As many dogs as possible are used for breeding. Överanvändning of individuals should be avoided (see breeding recommendations). Självfallet to the animals used in breeding to be physically and mentally healthy and show a good exterior (see breeding recommendations).
2. Genetic material in older individuals are utilized. Older animals not previously been used at stud or used on a small scale should be given priority in the breeding process. These individuals have a higher percentage of dogs that were numbered (founder-animal) genetic variation, and inasmuch as these dogs are used is a larger proportion of this variation to be. Older females not previously puppies should veterinärundersökas before use.
3. Genetically important individuals priority. With genetically important individuals referred to those bearing a high proportion of genes from the founder-animals that are

poorly represented among today's dogs. Figure 2 reveals for example that several of the 34 numbered dogs used for breeding only contributes to a minor extent with the genetic material. Dogs that carry genes from these underrepresented founders should be prioritized. The identification of genetically important animals should take place only when the link with the earlier stud book information is as complete as designed as available information permits. Furthermore, links to any likelihood that the only harmful genes made in connection with the identification of genetically important individuals.

4. Generation interval is increased. Genetic variation is lost through generations. When one föräldrageneration disappears the genes are not passed on to their puppies. With generationslängd refers to the average age of a bitch when she feeds her first litter that goes on in the breeding. At one generationslängd about two years will the loss of genetic variation be twice the rate as at a generationslängd of 4 years. The longer the generationslängden the less genetic variation is lost per unit time. From a conservation genetic perspective, it is therefore inappropriate to use young animals in breeding. (There are also other positive effects of avoiding young breeding animals - for example, that a more comprehensive evaluation of breeding animals' health and mentality is possible and that the dogs have time achieving good mental maturity with greater life experience).
5. 5th Records of the dead and cause of death gårdshundar rapids. To monitor how much genetic variation is still present in a population, it is necessary to know which individuals are still acquired. It is also important to know the animals that live in order to locate animals for breeding. Life is a character that is often affected by such inbreeding, and to analyze possible effects of inbreeding, it is essential with good knowledge of life. A survey of the reasons that dogs die is important for health information.

Good Health

The mapping of the Danish / Swedish gårdshundens health status will continue and a system for regular information to be communicated from dog owners to breed club will be prepared.

Reduced incidence of genetic diseases / defects, hip dysplasia (HD) The incidence of hip dysplasia is high in the breed. Reports submitted periodically to avelsrådet about animals that people are forced to kill or severely affected by höftledsproblem. Breed club intends to continue its work so that as many dogs as possible x-ray to the fullest picture possible of the occurrence should be. The rule of breeding animals must be assessed A or B on the hip (or cleared with old bedömningssystemet) to remain unchanged. Exceptions are made only for never fully healthy dogs in his lifetime never had problems with her hip. Such dogs are thus many times interesting to use in the breeding of genetically conservation purposes, but it can be difficult to sleep older dogs.

Other illnesses / injuries

Several diseases and injuries that are known or presumed to be inherited to occur in gårdshund. In addition to hip dysplasia, for example, Legg Perthes, Addison's disease, von Willebrand disease, patellarluxation, navelbråck, krytorkism and epilepsy found where. Breed club will continue to work with the Surveyor presence of these defects, and examine how kinship relationships looks among affected individuals. Animals showing these defects should not be used for breeding. As for serious injuries where knowledge of the likely arvsång there should not be full siblings or parents of affected dogs used in further breeding work (see the general breeding recommendations). In general, increasing the number of dogs used for breeding, the breed club to work towards a situation where individual harmful genes widely spreading is avoided. The matador breeding can be an individual breeding animals to spread malicious individual genes in such an extent that the latter will be difficult to breed away or reduce the occurrence of the defect.

Good mentality and exterior

Only mentally healthy dogs should be used for breeding. Breed club encourages mental description, but would not make demands on some reactions of this type. In contrast, självfallet individuals who exhibit strong aggression / strong fear not used for breeding. Breedclub requirements avelsrådgivning is that breeding must have obtained at least a 2nd quality at the official show. A second equivalent Classifications' good breeding results. This requirement would continue to apply.

Interim targets for BREEDING WORK 2004-2008

Breed club for the Danish / Swedish gårdshund adopt the following targets for breeding-related work during the five year period 2004-2008.

1. At least half of all dogs during the period reaches the age of one höftledsröntgas. Breed club continues and intensifierar work to reduce the incidence of hip dysplasia and Legg Perthes.
2. The incidence of Legg Perthes identified and a plan to reduce the prevalence has been established. There are already good knowledge of Legg Perthes-existence and common släktskapsbanden between affected dogs. A detailed survey of the number of affected dogs is important as well as an in-depth analysis of possible släktskapsband between numbered dogs and an analysis of whether the design of spread is consistent with the assumption of autosomal recessive inheritance (a "declining" genes required in duplicate for the damage to appear. there is currently nothing in the investigated material which contradicts such an inheritance, but a thorough check is needed.

3. 3rd At least 100 gårdshundar have mental described. It is important that as well informed as possible, receive the gårdshundens mentality. Such a large number gårdshundar as possible, mentally described to obtain a good statistical base will be obtained.
4. Genetically important individuals have been identified and as many as possible of those used for breeding. Genetically important individuals are those who carried genes that could be lost out of stock. They can also be such animals have a low probability that only some harmful genes (eg genes for Legg Perthes).
5. A system for sa good possible registration of individuals who have died have been prepared. To follow the loss of genetic variation, effects of inbreeding, and select animals for breeding, it is important to know which individuals no longer exists in the population.
6. A more detailed breeding plan to avoid losses of genetic variation has been established.
7. The incidence of HD among dogs born in the period reduced to 10%. The current the presence of slightly above 20% and this percentage should be halved in five years.
8. A system for continuous health and karaktärsdragsuppföljning has been prepared. To engage in breeding the best possible way, it is important that good knowledge is the existence of any diseases and injuries, and some, undesirable, exterior parts (eg ståndöron, frequent occurrence, and curled tail, unusual size, etc.).
9. Training in conservation genetic breeding planning. It is important that a good understanding of the breeding structure can affect the rate at which genetic material is lost, and how genetic defects can be spread are among breeders as well as dog owners. Breed club will continue its efforts to educate members of both avelslära as another dog knowledge.