Pet animals – housing, breeding and welfare

Andreas Steiger
Division of Animal Housing and Welfare, Vetsuisse-Faculty, University of Berne,
Bremgartenstrasse 109a, CH 3001 Berne, andreas.steiger@itz.unibe.ch

What are pet and companion animals?

The term “pet animal” is used in various ways, sometimes including, sometimes excluding the usual “companion animals” such as dogs and cats. The “European Convention for the Protection of Pet Animals” of the Council of Europe gives the following definition in a broad sense (Council of Europe 1987, article 1): “By pet animal is meant any animal kept or intended to be kept by man, in particular in household, for private enjoyment and companionship.” According to the explanatory report to this Convention, the definition of a pet animal covers animals sharing man’s companionship and in particular living in his household, animals intended for this purpose, animals kept to breed animals for this purpose, and stray animals and the first generation of animals born of stray animals. Excluded from this definition are, for instance, animals kept for the production of food, wool, skin or fur or for other farming purposes, those kept in zoos and circuses for exhibition and those kept for experimental or other scientific purposes. It was admitted that the inclusion of wild animals in the Convention might be considered as a recognition of the possibility of using these animals as pet animals, on the other hand, it was realised that to leave out wild animals would create a legal lacuna and that these animals would not be protected at all.

The growing importance of pet and companion animals

Worldwide the importance of pet and companion animals has grown. High percentages of the populations are owners of pet and companion animals, in particular in towns, with different percentages from country to country. The industry of animal feed and pet animal equipment as well as the number of pet animal shops is growing. The great majorities of veterinarians in practice are working in mixed practices with small and large animals or in small animal practices (Unshelm 1997, 2002). Specializations in small pet animal and exotic animal medicine (including treatment of reptiles) and in behavioural medicine (treatment of behavioural problems in particular of dogs an cats) are gaining in importance, this in veterinary practice and in veterinary schools of universities.

Animal welfare problems in housing of pet animals

There are numerous popular books, booklets and brochures on housing of many pet and companion animals on the market. Often the requirements of housing, in particular measures for boxes and cages, are taken over uncritically from source to source over many years, or the state of practice is taken as minimal norm or as recommendation without being questioned and without any scientific examination. From experiences of animal welfare organisations, of animal welfare authorities and of veterinarians it is known, that in practice often pet animals are not kept according to their biological needs and to scientific knowledge. Frequent faults in housing conditions of pet animals are in particular too small boxes or cages, therefore lifelong a lack of locomotion of the animals, unstructured boxes for small pet mammals, insufficient hiding possibilities for various pet species, single housing of very social animals such as guinea pigs, many pet birds and parrots, furthermore also insufficiently structured boxes for cats in cat shelters, inadequate feeding including
overfeeding, and many other conditions. Many diseases in pet animals are the consequences of faults in housing (Hollmann 1988, 1997). Species specific locomotion in most birds means flying, and not only hopping from perch to perch, and in small rodents running, climbing, jumping and digging, and not only walking some steps along a wall from edge to edge of a box, it means additionally behaviours as exploring, marking, hiding, nesting and other activities, which are often very restricted in cages (Hollmann 1997). Nevertheless measures of boxes and cages are not the only factor of housing, other important factors are a good microclimate and location of the cage, adequate structures and accessories, good feeding in quality and quantity, and careful treatment by the owner (Hollmann 1997). For pet birds, negative factors of housing are e.g. anthropomorphism, wrong judgement of the well-being of the animals, the role of the animal as status symbol or as object for representation, insufficient knowledge on behaviour, housing and feeding requirements, insufficient climate, additionally problems of adaptation of wild-caught birds (Kummerfeld 1997).

The main problems of pet owners with their animals were analysed by Falbesaner (1991) from 3000 letters to a pet magazine in 1987 and 1988: 14% of the questions concerned housing problems, 12% health problems and 11% behaviour problems; 29% of the letters concerned birds, 26% small pets (mammals, e.g. rodents), 16% dogs, 15% cats, 5% horses, 5% reptiles and the others further species. Behaviour problems most commonly appeared in dogs, birds, small pets, and cats, in this order. The main problem in birds was the acclimatisation of members of the same species. In dogs most problems arised with the human-animal-bond, particularly with the dominance of hierarchical consideration. The main problem with cats was the house-training, and in birds and small pet animals difficulties by lack of tameness were often reported.

For pet animals, many inadequate and even hazardous equipments and accessories are on the market. A list of such materials, which are in contradiction with the principles of animal protection, was published recently (TVT 1998, 1999) and includes e.g. bowls for hamsters, animal-boxes closed on all sides, synthetic cotton for hamsters, running wheels with broad spaces between rods, litter with odorous or colouring substances, feed troughs without cover plate, for pet birds round cages, cages with white lattice, cages with lattice with plastic or lacquer for psittacides, perches of plastic, perches and floors with sand-paper, inadequate toys, or chains for parrots on perches. Inadequate accessories for fish are e.g. goldfish-bowls, mini aquariums, tower aquariums and inadequate gravel, for reptiles e.g. mini terrariums with isles for water-tortoises, or leather jackets for iguanas. Inadequate accessories are also on the market for dogs and cats (TVT 1999).

Some circumstances are enhancing the risk of faults and animal welfare problems in pet animal housing, more than in farm animal housing, in animal experimentation and in other categories of animal housing (Steiger 1999, 2005): for pet animals there are no or only few state regulations on animal welfare, no special education is required for keeping animals in private household, often there is no “public control” of private housing conditions for animals, there is also less “public pressure” compared to farm animal housing and animal experimentation, there are no procedures of authorisation as e.g. for animal experimentation and sometimes for keeping wild animals, the market for equipment and accessories for pet animals is mostly free, and finally in research on housing of most pet animals there are more gaps than in research on other species.

Animal welfare problems in breeding of pet animals

For thousands of years man has caused animals to change by domestication (farm animals, horses, companion animals), by breeding and rearing wild animals for special purposes (such as the production of meat, milk, eggs and fur), by using animals in performance sports (horses, dogs, pigeons), by selecting animals for special appearance or behaviour (dogs,
cats, rabbits, poultry, small pet rodents, pet birds, ornamental fish), and by using laboratory animals and developing models for disease research. Animal welfarists and scientists have criticized several pedigree breeds of farm animals and companion animals. They are considered to be “defective breeds” or “extreme breeds” (in German “Qualzuchten”), since they have extreme morphological, physiological or behavioural characteristics. It is claimed or assumed that these characteristics lead to unnecessary suffering and to unacceptable restrictions in the life of these animals. This applies to certain breeds of cattle, swine, horses, dogs, cats, rabbits, pet rodents, poultry, turkeys, ducks, pigeons, pet birds, reptiles, amphibians and ornamental fish (Wegner 1993, 1995, 1997; Bechtel 1995; Peyer 1997; Wegner 1997; Bartels and Wegner 1998; Not 1998; Peyer and Steiger 1998; Stucki 1998; McGreevy and Nicholas 1999; Expert Group Germany 2000; Bartels 2002). The most active discussion on adverse breeding effects in companion animals has been in the German-speaking community, but discussion is also evident in the English-speaking community where the term “Animal Illfare” has been used (Ott 1996). Reviews on extreme breed types in domestic animals are presented by Bartels and Wegner (1998), in companion animals by a report of an Expert Group in Germany (2000), in dogs by Peyer (1997), in cats by Wegner (1995), Stucki (1998) and Steiger (2005), in exhibition poultry and cage birds by Stucki (1998), Not (1998) and Bartels (2002), and in small pet mammals, pet birds, reptiles and ornamental fish by Not (1998).

The Federation of Veterinarians of Europe (FVE) has issued a resolution on "Breeding and Animal Welfare" which "urges its member countries and the European Commission to consider the introduction of measures designed to safeguard the welfare of animals with respect to the risks inherent in selective breeding programmes, while preserving the unique characteristics and genetic advantages of European breeds" (Federation of Veterinarians of Europe 1999). The resolution continues: "Selective breeding programmes may cause animal welfare problems. It may become difficult or impossible for natural copulation or parturition to occur; offspring produced by selective breeding for certain specific, characteristics may be unable to express their natural behaviour; or they may be predisposed to hereditary, congenital, metabolic or infectious disease, disability or early death. The introduction and continuation of such selective breeding programmes may make it impossible for the breed to be maintained by natural means (…) The FVE believes that it is the function of the veterinary profession not only to treat sick and injured animals, but to promote and safeguard animal health and welfare. Its members believe that selective breeding of animals should not be used to introduce a welfare deficit into a species or breed, or to impair the ability of a breed or individual to express its natural behaviour throughout its natural lifespan. Furthermore, where selective breeding has already resulted in welfare disadvantages being introduced into any species or breed, the FVE urges veterinarians not only to treat individual animals humanely, but also to bring to the attention of the breeding organisations and the competent authorities in their countries the need for action to alleviate the welfare problems caused by selective breeding.”

The “European Convention for the Protection of Pet Animals” of 13 November 1987, edited by the Council of Europe, includes general rules on breeding of pet animals and an additional resolution concerning breeding of dogs and cats (see below, Council of Europe 1987, 1995a,b).

**Information and education on housing of pet animals**

Reasons for insufficient housing conditions of pet animals are often the lack of knowledge. This is recognised by authorities of animal welfare regulations in many countries. The importance of information means for owners of pet animals was shown by a survey by phone to 730 owners of various pet animals (Bhagwanani 1995, Steiger 1999, 2005). Under many other questions they were asked if their animals are social animals and how they were
keeping them. The owners knew quite well about the social requirements of their animals, but these were housed to a lower percentage in social conditions than according to the answers. There was an obvious lack between own knowledge and own handling (table 1).

Table 1: Questions to pet animal owners (Bhagwanani 1995)

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<tr>
<th>Interviewed owners of pet animals</th>
<th>Animals are declared as social animals</th>
<th>Own animals are housed in groups</th>
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<tr>
<td>Guinea pigs (64 persons)</td>
<td>81 %</td>
<td>58%</td>
</tr>
<tr>
<td>Pet birds (76 persons)</td>
<td>75 %</td>
<td>62 %</td>
</tr>
<tr>
<td>Rabbits (70 persons)</td>
<td>69%</td>
<td>58%</td>
</tr>
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<td>Hamster (34 persons)</td>
<td>24 %</td>
<td>27%</td>
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The “European Convention for the Protection of Pet Animals” deals with the matter too, the Council of Europe acknowledged the importance of information and education on housing of pet animals and in article 14 on information and education programmes gives some general rules (Council of Europe 1987): “The Parties undertake to encourage the development of information and education programmes so as to promote awareness and knowledge amongst organizations and individuals concerned with the keeping, breeding, training, trading and boarding of pet animals of the provisions and the principles in this Convention. In these programmes, attention shall be drawn in particular to the following subjects: a) the need for training of pet animals for any commercial or competitive purpose to be carried out by persons with adequate knowledge and ability; b) the need to discourage gifts of pet animals to persons under the age of sixteen without the express consent of their parents or other persons exercising parental responsibilities, gifts of pet animals as prizes, awards or bonuses, unplanned breeding of pet animals, c) the possible negative consequences for the health and well-being of wild animals if they were to be acquired or introduced as pet animals, d) the risks of irresponsible acquisition of pet animals leading to an increase in the number of unwanted and abandoned animals.”

This article aims at ensuring that publicity is given to the provisions of the Convention amongst private persons who are directly concerned by the implementation of some of the articles. It was agreed that on a number of issues, such as the training of animals by persons with adequate knowledge and ability, giving pet animals to children as presents or as prizes, the unplanned breeding of pet animals, the introduction of wild animals as pets and the irresponsible acquisition of pet animals, effective results could be obtained only by informing and educating private organisations and individuals and that accordingly Contracting parties should encourage the development of information and education programmes.

The elaboration and distribution of adequate, modern information means on pet animal housing and breeding is an important and promising task for animal welfare organisations, animal welfare authorities and animal housing and breeding associations.

Research on housing and breeding of pet animals

On an international level, there is a lack of research results on housing and breeding of pet animals, and much more is known on the most common farm animals cattle, pig and poultry, on laboratory rodents and alternatives to animal experimentation, and on stunning of slaughter animals, than on pet animals. Research on pet animals, at least small pets, is not frequent, due perhaps to less attractiveness of such research and less financial sources in this field compared to research on farm and laboratory animals or to dogs (table 2).

Table 2: Numbers of scientific publications according to a search in Pubmed (March 2005)

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<th>Species</th>
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Methods in research on housing are mainly a) comparison of animals kept in various housing forms (with clinical, morphological, ethological and physiological parameters), b) preference tests with animals (choice tests with free access to various housing forms or elements), c) operant-tests with animals (assessment of the degree of preference, of the strength of motivation for certain housing forms or elements, e.g. measurable by work or time for reaching a certain aim), d) epidemiologic investigations.

Some results of recent research on housing of pet animals concern the following aspects (Steiger 2005): With a “cat-stress-score” Kessler (1997) investigated the stress effects of high density in cat groups, single-housing versus group-housing, small cage size, and lack of socialisation in cats, other authors showed the stress effects of lack of hiding places for cats (Carlstand et al. 1993). Contributions on welfare of cats are presented by various authors (Mertens 1993, Turner and Bateson 2000, Wöhr 2002, Rochlitz 2002, 2005). In guinea pigs it was shown by preference tests, that guinea pigs together clearly prefer conspecifics versus dwarf rabbits as social partners (Sachser 1998). Gerbils need a dark nest with a tunnel and should not be separated too early from their offspring (Wiedenmayer 1995, Waiblinger 2002, 2004a,b). Hamsters can use adequate big running wheels in a reasonable way and show less stereotypies in deep litter and on big litter surfaces (Vonlanthen 2002, Gebhardt et al. 2004, 2005, Fischer 2005, Hauzenberger 2005, Hauzenberger et al. 2005). Running wheels for mice and hamsters may be constructed in various forms and are not always adequate for the animals (Mrosovsky et al. 1998, Banjanin and Mrosovsky 2000). In hand-reared, parent-reared and wild-caught grey parrots it was shown, that the breeding method, also the method of hand-feeding and the human contact, has an influence on behaviour and health of the animals (Schmid 2004a,b, 2005, Schmid et al. 2005).

Methods of research on extreme breeds of companion and pet animals include the comparison of animals with extreme characteristics with other, less extreme or “normal” breeding types, or the comparison of various breed types, by using the parameters morphology, behaviour, physiology, clinics, morbidity and mortality (as example research on crested ducks with radiography, computer assisted tomography, magnetic resonance imaging, and behaviour studies, Bartels 2002).

Some results of recent research on breeding of pet animals are dealing with brachycephaly and respiration difficulties in dogs (Balli 2004), with deafness in cats (Keller 1997), with anomalies of crane and brain in crested ducks (Bartels und Wegner 1998, Bartels 2002), with the behaviour of plumage care in pigeons (Bartels et al. 1994), and with alterations of eyes in canaries (Steinmetz et al. 2002, Wriedt et al. 2002). Critical aspects, which should be investigated, concern e.g. long hairs in the guinea pig, hamster and dwarf rabbit, impairing probably the temperature regulation and the fur hygiene, then the restriction of locomotion in the gibber canary, special feather forms in canaries, and breeding types in gold-fish and telescope-fish, which are restricting their behaviour of feeding and locomotion. Many aspects of extreme breeding types are open for research.

National animal welfare legislations on pet animals
National animal welfare legislations pay little attention to housing and breeding of pet animals. Some countries, such as Germany, Sweden and Switzerland, introduced general articles on breeding. Detailed regulations on housing of small pet and on companion animals are provided in Switzerland. Germany edited several expertises on housing of pet animals such as birds, parrots, ornamental fish, and on breeding of dogs, cats, rabbits and birds (BMVEL, expert Group Germany 2000).

Austria introduced in its new animal welfare law of 2004 (Bundesgesetz Österreich, 2004) the possibility of a type of „label“ for housing and other equipment for pet and companion animals: According to article 18 the Federal Minister of health and women is allowed to introduce on the level of an ordinance rules on labelling of series-produced housing systems and equipment for farm animals and of housing equipment and accessories for pet animals, if the requirements of the animal welfare law are fulfilled. These new and promising rules may in future give the impetus for many research projects on housing of pet animals, including accessories for these animals.

The European Convention for the protection of pet animals

The “European Convention for the Protection of Pet Animals” of 13 November 1987, edited by the Council of Europe, includes general rules on keeping, breeding, training, trading, commercial boarding, animal sanctuaries, advertising, entertainment, exhibitions, competitions, surgical operations, killing, reduction of numbers, information and education programmes (Council of Europe 1987).

For breeding of pet animals the Convention states in article 5 the following basic principles: “Any person who selects a pet animal for breeding shall be responsible for having regard to the anatomical, physiological and behavioural characteristics, which are likely to put at risk the health and welfare of either the offspring or the female parent. The explanatory report of this Convention comments on this rule as follows (Council of Europe 1987): Article 5 lays down the principle that, in the breeding of pet animals, care should be taken by those responsible for the breeding to ensure that the physical and mental health of the offspring and female parent are not put at risk. In the selection of specimens for breeding, care should be taken to avoid the transmission of behavioural patterns such as abnormal aggressive tendencies and hereditary defects: for example progressive retinal atrophy (leading to blindness), oversized foetal heads (preventing normal birth), and other physical characteristics required by certain breed standards which predispose to clinical conditions such as entropion and soft-plate deformities.”

On the basis of this Convention and its general rules, an expert committee in the Council of Europe elaborated and adopted in 1995 a) a “Resolution on the Breeding of Pet Animals”, b) a “Resolution on surgical operations in pet animals”, and c) a “Resolution on wild animals kept as pet animals” (Council of Europe 1995a). The resolution concerning breeding provides recommendations for the application and interpretation of the general rules of the Convention. It includes detailed descriptions of extreme breed types of dogs and cats, with examples of various breeds, and it asks and encourages breeding associations, including breeders, judges and owners, to reconsider breeding standards, to select the animals not only taking into account aesthetic criteria, to ensure, by good information and education, the interpretation of breeding standards in a responsible way and to raise public awareness to the breed problems. The resolution, which is not sufficiently widely known and applied, is presented in its full length:

The Parties of the European Convention for the Protection of Pet Animals, by virtue of the terms of reference laid down in Article 15;

- Recognising that these terms of reference imply the monitoring of the implementation of the provisions of the Convention and the development of common and co-ordinated programmes in the field of pet animal welfare;
- Anxious to encourage full respect of the provisions of the Convention;
- Recalling that Article 5 of the Convention provides for a selection of pet animal for breeding which takes account of the anatomical, physiological and behavioural characteristics which are likely to put at risk the health and welfare of either the offspring or the female parent;
- Aware that problems are encountered with the implementation of these provisions, in particular with the development of extreme characteristics detrimental to the health and welfare of the animals;
- Convinced that these problems are related for a large part to the way breeding standards are formulated and interpreted;
- Considering therefore that a revision of these breeding standards is necessary in order to fulfil the requirements of Article 5 of the Convention;

Agreed:
1. to encourage breeding associations, in particular cat and dog breeding associations:
   - to reconsider breeding standards in order, if appropriate, to amend those which can cause potential welfare problems, in particular in the light of the recommendations presented in the Appendix;
   - to reconsider the standards and to select the animals taking into account not only aesthetic criteria but also behavioural characteristics (for instance with regard to problems of aggressiveness) and abilities;
   - to ensure, by good information and education of breeders and judges, that breeding standards are interpreted in such a way as to counteract the development of extreme characteristics (“hypertype”) which can cause welfare problems;
   - to raise public awareness to the problems related to some physical and behavioural characteristics of the animals;
2. if these measures are not sufficient, to consider the possibility of prohibiting the breeding and for phasing out the exhibition and the selling of certain types or breeds when characteristics of these animals correspond to harmful defects such as those presented in the Appendix.

Appendix
- The Parties are convinced that in the breeding of several breeds or types of pet animals, mammals and birds, insufficient account is taken of anatomical, physiological and behavioural characteristics which are likely to put at risk the animals’ health and welfare.
- However, the Parties considered that problems connected with the breeding of cats and dogs should be addressed as a priority.
- The Parties strongly encourage cat and dog breeding associations to revise their breeding policies in the light of Article 5 of the Convention taking account in particular of the following guidelines:

Guidelines for the revision of breeding policies:
(The breeds mentioned in brackets are only examples in which these problems may occur)
- set maximum and minimum values for height or weight of very large or small dogs, respectively, to avoid skeleton and joint disorders (e.g. dysplasia of hip joints or elbows, fractures, luxation of elbow or patella, persistent fontanella) and collapse of trachea;
- set maximum values for the proportion between length and height of short-legged dogs (e.g. Bassethound, Dachshund) to avoid disorders of the vertebral column;
- set limits to the shortness of skull, and in particular the nose, so that breathing difficulties and blockage of lachrymal ducts are avoided, as well as disposition to birth difficulties (e.g. Persian Cats, especially the “extreme type”, Bulldogs, Japan Chin, King Charles Spaniel, Pug, Pekin Palacedog);
- prevent the occurrence of:
  -- a persistent fontanella (e.g. Chihuahua) to avoid brain damages;
  -- abnormal positions of legs (e.g. very steep line of hind legs in Chow Chow, Norwegian Buhund, Swedish Lapphund, Finnish Spitz; bowed legs in Bassethound, Pekin Palacedog, Shi Tzu) to avoid difficulties in movement and joint degeneration;
  -- abnormal positions of teeth (e.g. brachygnathia in Boxers, Bulldogs, Persian Cats) to avoid
difficulties in feeding and caring for the newborn;
-- abnormal size and form of eyes or eyelids (e.g. ectropion: Bassethound, Bloodhound, St. Bernard;
-- small deep lying eyes with disposition to entropion: Airedale Terrier, Australian Terrier, Bedlington Terrier, Bullterrier, Bloodhound, Chow Chow, English Toy Terrier, Jagdterrier, Newfoundland, Shar Pei; large, protruding eyes: Boston Terrier, Cavalier King Charles Spaniel, Dandie Dinmont Terrier, Brussels Griffon, Japan Chin, King Charles Spaniel, Pug, Pekin Palacedog, Shi Tzu, Tibet Terrier) to
avoid irritation, inflammation and degeneration as well as prolapse of eyes;
-- very long ears (e.g. English Cocker Spaniel, Bassethound, Bloodhound) to avoid disposition to
injuries;
-- markedly folded skin (e.g. Bassethound, Bulldog, Bloodhound, Pug, Pekin Palacedog, Shar Pei) to
avoid eczemas and in the case of furrows around the eyes irritation and inflammation of eyes;
- avoid or, if it is not possible to eliminate severe defects, discontinued breeding of:
-- animals carrying semi-lethal factors (e.g. Entlebucher Cattledog);
-- animals carrying recessive defect-genes (e.g. homozygous Scottish Fold Cat: short legs, vertebral column and tail defects)
-- hairless dogs and cats (lack of protection against sun and chill, disposition to significant reduction of
number of teeth, semi-lethal factor)
-- Manx-cat (movement disorder, disposition to vertebral column defects, difficulties in elimination of
urine and faeces, semi-lethal factor)
-- cats carrying “dominant white” (significant disposition to deafness);
-- dogs carrying “Merle factor” (significant disposition to deafness and eye disorders, e.g.: Blue merle Collie, Merle Sheltie, Merle Corgie, Merle Bobtail, Tigerdogge, Tigerteckel).

As a consequence of this “Resolution on the Breeding of Pet Animals” the parties involved in
its elaboration, including four international breeding associations, also agreed
on a “Declaration of Intent” at the Council of Europe in 1995. It was adopted at the same
Multilateral Consultation of Parties to the European Convention for the Protection of Pet
Animals on 10th March 1995. The declaration, which is also not sufficiently widely known and
applied, is presented here (Council of Europe 1995b):

**Declaration of Intent** (adopted on 10th March 1995 at the Multilateral Consultation of Parties to the
European Convention for the Protection of Pet Animals):

The Parties to the European Convention for the Protection of Pet Animals and the Fédération
Cynologique Internationale, the Fédération Internationale Féline, the Governing Council of the Cat
Fancy and the World Cat Federation agreed on the need to improve breeding and breeding standards
of cats and dogs in accordance with the principles set out in the Convention.

In particular, they agreed:
to contribute to the improvement of breeding standards, in particular with regard to surgical operations
for aesthetic purposes, taking in account the welfare of the animals;
- to promote the respect of these standards by the judges and the breeders;
- to facilitate the appropriate and continuing training of judges and breeders;
- to take necessary measures to control the breeding of animals with genetic or phenotypic
characteristics harmful to the welfare of the animals in order to prevent suffering of such animals;
- to develop information to the public in order to achieve responsible ownership in accordance with the
provisions of the Convention.

Both the “Resolution on the Breeding of Pet Animals” of the Council of Europe and the
“Declaration of Intent” emphasize the importance of contributions from several partners, such as
breeding associations, breeders, judges and owners, the state and authorities, to improve
aspects of animal welfare in breeding.

**Literature**
- Banjanin S., Mrsovscky, N., 2000, Preferences of mice, mus musculus, for different types of running wheel, Lab. Anim. 34, 313-318
- Council of Europe, 1995a, a) Resolution on the breeding of pet animals, b) Resolution on surgical operations in pet animals, c) Resolution on wild animals kept as pet animals, Multilateral Consultation of parties to the European Convention for the protection of pet animals (ETS 123), March 1995 in Strasbourg, Document CONS 125(95)29, Council of Europe, F 67075 Strasbourg-Cedex
- Council of Europe, 1995b, Declaration of intent, Multilateral Consultation of parties to the European Convention for the protection of pet animals (ETS 123), March 1995 in Strasbourg, Document CONS 125(95)29, Council of Europe, F 67075 Strasbourg-Cedex
- Expert Group Germany, Sachverständigengruppe BML, 2000, Gutachten zur Auslegung von § 11b des Tierschutzgesetzes, Bundesministerium für Ernährung, Landwirtschaft und Forsten BML, Ruchusstr. 1, D 53107 Bonn. Website at www.bml.de


Peyer N., 1997, Die Beurteilung zuchtbedingter Defekte bei Rassehunden in tierschützerischer Hinsicht, Diss. med. vet. Univ. Bern (Bezug bei Institut für Genetik, Ernährung und Haltung von Haustieren, Bremgartenstr. 109a, CH 3001 Bern)


- Waiblinger E., König B., 2004a, Refinement of pet and laboratory gerbil housing and husbandry, KTBL-Bericht 36. Int. Tagung Angewandte Ethologie in Freiburg. i. Br., 124-134
- Wegner, W., 1995, Kleine Kynologie (with appendix on cat breeding p. 353-400), Terra Verlag, Konstanz, Germany.
- Wiedenmayer Ch., 1995, The ontogeny of stereotypies in gerbils, Diss. phil. nat. Univ. Zürich

all 6257 words
without literature 4815 words (literature 1442 words)
without resolution 5324 words (resolution 933 words)
without resolution and literature 3882 words