

ABNORMAL BEHAVIOURS IN FARM ANIMALS

1. Introduction

In the CEC countries many people worry about the welfare of farm animals housed in our modern and intensive husbandry systems. This concern is also apparent from a number of CEC symposia (references I-IV) held on welfare, health and productivity of farm animals. During these seminars scientific reports were presented and discussed by experts in the field of ethology, genetics, veterinary sciences and animal production. In these discussions it appeared that the concept of animal welfare was difficult to define in such a way that everybody could handle it unambiguously. Welfare had to do with being healthy and showing a minimum of abnormal physiology and behaviour. This report deals with the occurrence of abnormal behaviours and especially with the question of which behaviours are called abnormal by the experts in the field. The frequent use of terms like "abnormal or disturbed behaviour" suggests some basic consensus on the type of behaviour meant.

Especially after the CEC seminar December 1981 at Hohenheim (Ill), there was a strong need to have an overview of those farm animal behaviours, that, according to all or most experts, are considered as abnormal or disturbed. For that purpose a simple inquiry (appendix 1) was sent to 46 experts or representatives in all CEC member states. Again, the aim was not to find a definition of abnormal behaviour (which implies a definition of animal welfare), but to make a list of such behaviours upon which all or most experts agree. An important point was to describe these behaviours in such a way that everybody interested in the theme could recognize them as observable phenomena.

The answers of 32 experts were received. Their answers have been summarized in a so called "First report on the CEC inquiry on abnormal behaviours in farm animals". This report was distributed (November 1982) among the experts who had contributed and among all national representatives. In this way all contributors had the possibility to correct or to revise the first report. At the CEC conference in Mariensee (December 1982) Drs. Broom, Buchenauer, Duncan and Wiepkema were asked to take care of the final report. Dr. Wiepkema was asked to prepare the final version.

A number of corrections were received and have been added to or integrated in the present report. This report was accepted as a C.E.C.-report at the Celle-meeting (July 1983) of the Expert Group Animal Welfare.

This report only deals with abnormal behaviours that:

- 1) can be observed in cattle, pigs and poultry;
- 2) are performed by many animals in a given husbandry system (> 5%);
- 3) when performed take a substantial amount of time (hours per day).

According to the applied ethologist (being the expert with respect to the normal behaviours of domestic animals) the nature of the behaviours, their frequency and their intensity may indicate serious abnormality or disturbance of the animals involved. Since man is responsible for the occurrence of such abnormal or disturbed behaviours (listed below) they have to be considered as undesirable.

The structure of the report is the following. First there is a concise representation of categories of abnormal behaviours and examples of them. Secondly these abnormal behaviours are classified per species and husbandry system. For those who wish more detailed information a third survey of all mentioned behaviours includes a) definition of the behaviour; b) its biological significance (frequency, causation, function), and the literature pertaining to this point; c) the reasons why the behaviour is called abnormal.

Thereafter the report indicates on which point research is needed and finally a list of the relevant literature has been presented. In this list we have restricted ourselves to contributions written in English or German. Relevant papers in Danish, Dutch or French can be found via the present references.

2. Categories of abnormal behaviour

2.1 Injurious behaviours including all those behaviours whose performance is detrimental for the actor and/or receptor.

Examples:

<i>Behaviour</i>	<i>Performers</i>	<i>Housing*</i>
Tail biting	Fattening pigs	Modern no bedding
Tail/ear biting	Piglets	"
Sucking penmates	"	"
Coat licking	Veal calves	Crates
Sucking penmates	"	Group housing
Urine sucking	"	"
Feather pecking	Laying hens	Battery cages
Cannibalism	"	"
Feather pecking	"	Floor housing
Cannibalism	Laying hens	Floor housing
Feather pecking	Broilers	"
Cannibalism	"	"

* The housing system is mentioned primarily to help the reader to appreciate where the behaviour can be observed. It does not mean that the housing system as such is always the cause of the abnormal behaviour involved.

2.2 Stereotyped behaviours, fixed in form and orientation, performed repetitively, no obvious function.

Examples:

<i>Behaviour</i>	<i>Performers</i>	<i>Housing</i>
Bar biting	Tethered sows	Modern no bedding
Sham chewing	"	"
Weaving	"	"
Sham chewing	Fattening pigs	"
Tongue playing	Veal calves	Crates
"	"	Group housing
"	Dairy cattle	All systems
"	Fattening bulls	Group housing
Stereotyped pacing	Laying hens	Battery cages

2.3 Abnormal body movements and/or locomotion (apart from those resulting from wounds, disease and so on).

Example:

<i>Behaviour</i>	<i>Performers</i>	<i>Housing</i>
Abnormal lying down or standing up	Cattle	Slatted floor housing

2.4 Redirected behaviours performed in the absence of adequate substrate and/or those occurring with abnormal high frequency or intensity.

Examples (only those not mentioned before)

<i>Behaviour</i>	<i>Performers</i>	<i>Housing</i>
Licking	Veal calves	Crates
Sham ruminating	"	"
Sham dustbathing	Laying hens	Battery cages
Leaning	Dairy cattle	Cubicle system
Dog-sitting	"	"
Milk-sucking	"	Various systems
Wood gnawing	Fattening bulls	Slatted floor housing
Mouthing prepuce	"	"
Mouthing coat	"	"
Hysteria	Laying hens	Floor housing

2.5 Apathetic behaviour (the animal appears to be uninterested in what happens in its environment)

Exemple (possible but not proven)

<i>Behaviour</i>	<i>Performer</i>	<i>Housing</i>
Motionless sitting on hind quarters	Tethered sows	Modern no bedding
" "	Fattening pigs	" "

It will be clear that in the foregoing the categories are not mutually exclusive: one and the same behaviour may belong to more than one category of abnormal behaviour.

3. Abnormal behaviours per species and housing system

3.1 *Tethered sows*: bar biting, sham chewing, motionless sitting on hindquarters, weaving.

3.2 *Fattening pigs* – no bedding: tail biting, sham chewing, motionless sitting on hind quarters.

3.3 *Piglets* – no bedding: ear/tail biting, sucking penmates.

3.4 *Veal calves* – crates: licking, coat licking, tongue playing, sham ruminating.

3.5 *Veal calves* – group housing: sucking at each other, urine sucking, tongue playing.

3.6 *Dairy cattle* – cubicle system, but also in loose housing: dog-sitting, abnormal lying down or standing up, milk sucking, tongue playing.

3.7 *Fattening bulls* – various systems: wood gnawing, tongue playing, mouthing prepuce, mouthing coat, urine sucking.

3.8 *Laying hens* – battery cages: feather pecking, cannibalism, stereotyped pacing, sham dustbathing.

3.9 *Laying hens* – floor housing: feather pecking, cannibalism, hysteria.

3.10 *Broilers* – floor housing: feather pecking, cannibalism.

4. Abnormal behaviours: definition, significance and further details

4.1 *Sows kept for breeding (tethered)*

Bar biting (related to bar gnawing, comparable to chain chewing)

Definition: Biting or gnawing at accessible bars of the enclosure. This biting may be directed at various parts and may be (or become) stereotyped. Often specific sliding movements along the bar are seen. Hypersalivation may occur.

Significance: Occurs in many animals. Possible causes: restraint and lack of substrate. Function unknown.

References: 7, 16.

*Abnormality**: Absent under free conditions, stereotyped, non-adaptive.

Sham chewing (associated with sham sucking and teeth grinding)

Definition: Chewing in a stereotyped way without food, hypersalivation.

Significance: Occurs in many animals. Causation and function unknown.

References: 7, 16.

Abnormality: Does not occur when suitable substrate is present.

Motionless sitting on hind-quarters

Definition: Sitting like a dog and often leaning on the side walls or bars. Head down, eyes somewhat closed.

Significance: Occurs in some animals.

References: 7, 16.

Abnormality: Absent in sows on straw, may indicate apathy.

* Under this heading the arguments have been summarized as used by the experts when calling the behaviour under consideration abnormal.

Weaving

Definition: Swaying the head rhythmically and stereotyped (e.g. freq. of 50/min.). Sitting or standing position.

Significance: Occurs frequently, causation and function unknown.

References: 7.

Abnormality: Absent under free conditions, stereotyped.

Mentioned less frequently: cannibalism, eating young.

4.2 Fattening pigs (no bedding)

Tail biting (preceded by or associated with nibbling and rooting at penmates, may lead to cannibalism)

Definition: Mouthing or nibbling the tail of a penmate. This may develop into biting and damaging the tail. Cannibalism may be the result. Biting tail may be associated with biting other parts of penmates (e.g. ears).

Significance: Occurrence variable, or unpredictable, number of animals involved may be high. Causation: frustration of subdominant pigs, high density, abnormal climatic conditions, boredom, modified by early experience, absence of bedding.

References: 4, 12.

Abnormality: Causing severe injuries, economic loss, seldom present under free conditions, redirected behaviour, disturbing social interrelationships, dammed up aggression, frustrated rooting drive, regression of sucking drive.

Sham chewing (associated with teeth grinding and stereotyped head movements)

Definition: Chewing in a stereotyped way without food. Hypersalivation.

Significance: Occurs in many animals. Causation and function unknown.

References: 13.

Abnormality: Vacuum behaviour, a form of selfstimulation, expresses boredom.

Motionless sitting on hind quarters

Definition: Sitting on hindlegs (like a dog), often leaning on side wall or bars. Head down, eyes somewhat closed.

Significance: Occurs in many animals. Causation and function unknown.

References: 13.

Abnormality: May indicate severe apathy.

Mentioned less frequently: back sitting, anal massage and faeces eating (associated with tailbiting), massaging and preputial sucking, urine drinking, excessive belly nosing, high frequency of defaecation, huddling (low ambient temperature or when frightened).

4.3 Piglets (no bedding)

Ear/tail biting

Definition: Biting at ears or tails of littermates, which may lead to light injuries.

Significance: Occurs in many animals, causation and function unknown. May be forerunner to later severe tailbiting.

References: 8, 11, 14.

Abnormality: Does not occur on straw bedding.

Sucking penmates (may be associated with belly nosing and urine drinking)

Definition: After (early) weaning sucking at ears, tail, prepuce and other parts of penmates.

Significance: Occurs in many animals, caused by early weaning. Function unknown.

References: 8, 11, 14.

Abnormality: Detrimental behaviour associated with decreased food consumption. Piglets become aggressive.

Mentioned less frequently: Asynchrony of behaviour.

4.4 Veal calves (crates)

Licking (associated with gnawing, biting, scraping and sucking at parts of the crate)

Definition: Excessive licking and other oral activities at parts of the crate.

Significance: Occurs in many animals, may be related to anaemia, caused by a shortage of roughage? Function unknown.

References: 15, 20.

Abnormality: Absent when with mother cow.

Coat licking

Definition: Excessive licking of own coat or coat of neighbours, swallowing of hair.

Significance: Occurs in many animals, causation and function unknown.

References: 15, 19.

Abnormality: Leads to hairballs in rumen.

Tongue playing (associated with rolling eyeballs)

Definition: Different stereotyped tongue movements: tongue out of mouth and swaying from left to right, folding the tongue backwards and sucking on it, rolling up and unrolling tongue.

Significance: Occurs in many animals, causation and function unknown.

References: 15.

Abnormality: Redirected or stereotyped behaviour.

Sham ruminating

Definition: Ruminating without roughage in the mouth.

Significance: Occurs in most animals. Causation: lack of roughage.

References: 15.

Abnormality: Vacuum behaviour.

Mentioned less frequently: tail sucking, turning around and getting stuck, impairment of locomotion, standing still and looking out.

4.5 Veal calves (group housing)

Sucking at each other (associated with urine sucking)

Definition: Sucking at mouth, ears, teats, navel, penis or tail of other calves.

Significance: Occurs in many animals, causally related to feeding (occurs mostly after drinking - bucket fed). Function unknown (shortage of fluids?).

References: 17, 18, 19.

Abnormality: Absent when calf with mother, or when fed with automatic feeder. Detrimental effects. May be the fore-runner of intersucking in adult cows.

Urine sucking

Definition: Sucking and drinking urine (also own urine).

Significance: Occurs in many animals. Causation: shortage of fluids? Function unknown.

References: 19.

Abnormality: Detrimental, redirected activity.

Comment: The calf being sucked seems to like it.

Tongue playing

Definition: See previous section: Calves in crates.

Significance: Occurs in many animals. Causation and function unknown.

References: 3,19.

Abnormality: Absent when calf is with mother, stereotyped.

Mentioned less frequently: Atypical lying down rear first (slatted floor). There occurs a high amount of abomasal injuries.

4.6 Dairy cattle (cubicle system, loose housing)

Leaning

Definition: Laying the head on another cow or some suitable object. Duration for up to 10 minutes.

Significance: Occurs frequently in some cows. Causation and function unknown.

References: 21.

Abnormality: Absent on pasture, is related to higher densities.

Dog-sitting

Definition: Sitting on the hind quarters.

Significance: Moderate occurrence, may have to do with difficulties in lying down or standing up in cubicle system.

References: no.

Abnormality: Rare on pasture.

Milk sucking

Definition: Sucking at the teats of another cow and milk drinking.

Significance: Occurs in some animals, causation and function unknown.

References: 22.

Abnormality: Maladaptive, detrimental, animals very fixed in this behaviour.

Tongue playing

Definition: Rolling movements of an extended tongue.

Significance: Occurs in some animals, causation and function unknown.

References: no.

Abnormality: Stereotyped.

Mentioned less frequently: Apathy, impairment of resting patterns, calf stealing.

4.7 Fattening bulls (various systems)

Wood gnawing (associated with licking, gnawing objects)

Definition: Biting and gnawing at wooden fittings, swallowing wooden materials.

Significance: Occurs in many animals. Caused by lack of roughage?

References: 1.

Abnormality: Absent when roughage is provided.

Tongue playing

Definition: Cf. Dairy cattle.

Significance: Occurs in many animals. Causation and function unknown.

References: 1.

Abnormality: Stereotyped.

Mouthing prepuce (and scrotum).

Definition: Sucking and licking at prepuce of conspecifics.

Significance: Occurs in many animals. Causation and function unknown.

References: no.

Abnormality: Absent on pasture.

Mouthing coat (also ears and tail)

Definition: Nibbling at coat, ears or tail of conspecifics: directed at hair.

Significance: Occurs in many animals, causation and function unknown.

References: no.

Abnormality: Absent on pasture.

Urine drinking

Definition: Licking penis of other bull, followed by urine drinking, same bull urinates.

Significance: Occurs in many animals. Causation and function unknown.

References: no.

Abnormality: Redirected activity.

Abnormal lying down (associated with abnormal standing up)

Definition: Bending of tarsal joints more pronounced than that of carpal joints: dropping on left or right thigh, lowering on carpal joints followed by sternal ground contact.

Significance: Occurs frequently in calves and young cattle housed on perforated or slatted floors. Causation: gaps in the ground material.

References: 2.

Abnormality: Absent on a solid floor with or without litter.

Mentioned less frequently: Nose pressing, vacuum mounting.

4.8 Laying hens (battery cages)

Feather pecking (may develop into cannibalism)

Definition: Pecking and pulling feathers of other birds. Sometimes eating these feathers.

Significance: Occurs in many animals. Causation unknown, but certain factors predispose birds to feather peck; genetic components, high light intensity, absence of litter, large group size. Function unknown.

References: 9.

Abnormality: Detrimental, redirected activity. It seems unlikely that this could be derived from any form of social grooming.

Cannibalism

Definition: Pecking at vent area, tissue (mainly of the back), or toes of other birds. This pecking is followed by eating the "tissue" pecked.

Significance: Occurs in several animals and can spread to many. Causation and function unknown, but different types may have different causal factors.

References: 9.

Abnormality: Highly detrimental.

Stereotyped pacing (associated with escape movements)

Definition: A form of restless locomotion, with steps higher than normal. Typical is its frantic and stereotyped character.

Significance: Occurs in animals of certain breeds, often in the pre-laying period. Causation, some form of severe frustration. Function unknown.

References: 5, 6, 23.

Abnormality: Egg may be retained longer than normal. Bird may damage itself by rubbing against cage wall during performance.

Sham dustbathing

Definition: Comparable to but different from normal dustbathing and performed in the absence of adequate substrate.

Significance: Occurs in many animals. Causation and function unclear.

References: 10.

Abnormality: Not leading to the normal effect (required for maintenance of body surface and/or feathers).

Mentioned less frequently: Head shaking, head and body lifting, being pushed and pushing.

4.9 Laying hens (floor housing)

Feather pecking (may develop into cannibalism)

Definition: See laying hens, battery cages.

Significance: Occurs in many animals. Causation related to density and absence of litter, function unknown.

References: 9.

Abnormality: Detrimental and redirected, sometimes stereotyped.

Cannibalism

Definition: See laying hens, battery cage.

Significance: Variable occurrence. Causation and function unknown.

References: 9.

Abnormality: Highly detrimental.

Hysteria

Definition: Synchronous manifestation of flight of all group members. Overriding all other behaviour. Sometimes leading to piling up at one end of the house.

Significance: Variable occurrence; causation: large groups, high densities. Function unknown.

References: no.

Abnormality: Absent under less crowded condition. Over-reaction.

Mentioned less frequently: Stereotyped pacing before oviposition, crowding and suffocation, overgregariousness on nesting sites.

4.10 Broilers (floor housing)

Feather pecking (may develop into cannibalism)

Definition: See laying hens.

Significance: Starts with a few animals, but later on may occur in many. Further see laying hens.

References: 9.

Abnormality: Detrimental.

Cannibalism

See laying hens, group housing.

Mentioned less frequently: Overaggressiveness, litter eating, polydipsia, polyhagia (referring to drinking or eating large amounts).

5. Research needed

The survey of abnormal behaviours given above represents the aim of the original inquiry, namely, obtaining a list of well described abnormal behaviours in farm animals upon which most if not all experts agree. This list is not complete and exhaustive, but many abnormal behaviours not mentioned are so closely related with the ones inserted here, that the given list can be considered as representative for the abnormal behaviours performed by farm animals in present day intensive husbandry systems.

Although the description of the different behaviours is sufficient to recognize them in practice, numerous questions on the biological significance and abnormality remain unanswered. As has been indicated, we often don't know the causation and function of a specific behaviour; moreover, in many cases one and the same behaviour is called abnormal for quite different reasons. These question-marks, uncertainties and differences in interpretation emphasize the significance of already existing research projects and/or suggest new ones.

To bring some order in the problems suggested by the present inventory we have selected 10 points of research. They are presented below in an order that does not claim an order of priorities.

Ten research points:

- 1) Analysis of causation and function of all those abnormal behaviours listed above for which this is unknown. Special emphasis on injurious behaviours like tail biting in pigs, urine sucking in veal calves, feather pecking and cannibalism in hens.
- 2) Analysis of causation and function of stereotyped behaviours with an emphasis on their development and their physiological counterparts. Urgent problems exist in tethered sows, crated veal calves and battery-kept laying hens.
- 3) Analysis of the relationship among abnormal behaviours, physiological parameters of stress, relevant changes in immune responses, and organic injuries (wounds, stomach lesions a.o.) of farm animals in chronic stress situations. What is the significance of coping? Do farm animals really develop some form of apathy (motionless sitting a.o.)?
- 4) More insight is needed into the frequency of abnormal behaviours if we want to relate their occurrence with existing husbandry systems. A practical rule could be that an abnormality may not occur in more than 1% or 5% of the animals in a given system. Lower frequencies occur by chance, higher frequencies suggest a relationship. Present data on frequencies of abnormal behaviours are insufficient.
- 5) Analysis of the causation and function of two little understood but quite different behaviours in hens. a) Dustbathing. For what sort of reasons should hens dustbathe?, and b) Hysteria. What causes and prevents hysteria of hens living in large groups?
- 6) Is it possible to select against some abnormal behaviours? In fact the whole field of behavioural genetics in farm animals is largely underdeveloped.
- 7) Analysis of alternative husbandry systems for sows, fattening pigs, veal calves and laying hens is urgently needed. This approach has to be an integrated one comprising biological, production, technical and economic aspects.
- 8) Analysis of the way the farmer deals with his animals. There is growing evidence that the way of handling farm animals deeply influences their behaviour and production.
- 9) Analysis of the housing of sow and piglets. How can they be kept in an optimal way? Relevant questions also concern the need of teeth clipping and castration.
- 10) Last but not least, there is much research needed on our theories about animal behaviour. At the moment quite different languages and models are used which sometimes seem to contradict each other. Our thinking on abnormal behaviours has to become more homogeneous and consistent in order to produce scientifically justified statements and to become reliable for all parties involved.

6. References

C.E.C.-Seminars

- I Moss, R. (ed.). The laying hen and its environment. Nijhoff, Den Haag, 1980.
- II Sybesma, W. (ed.). The Welfare of Pigs, Nijhoff, Den Haag, 1980.
- III Bessei, W. (ed.). Disturbed behaviour in farm animals. Hohenheimer Arbeiten, Heft 121, Eugen Ulmer, Stuttgart, 1982.
- IV Signoret, J.P. (ed.). Welfare and husbandry of calves, Nijhoff, Den Haag, 1983.
- V Baxter, S.H., M.R. Baxter and J.A.C. MacCormack (eds.). Farm animal housing and welfare, Nijhoff, Den Haag, 1983.
- VI Smidt, D. (ed.) Indicators relevant to animal welfare. Nijhoff, Den Haag, 1983.

Literature

1. Andreae, U., 1980. Verhaltenskriterien als tierschutzrelevante Indikatoren bei Mastbullen und Mastkälbern. *Landbauforschung Völkenrode, Sonderheft 53*, 67-73.
2. Andreae, U. und D. Smidt, 1982. Behavioural alterations in young cattle on slatted floors. In: C.E.C.-Seminar III, pp. 51-60.
3. Andreae, U., J. Unshelm und D. Smidt, 1980. Handhabung von Kälbern in Gruppenhaltung. *KTBL-Schrift 254*, 89-96.
4. Breddermann, W., 1968. Ein Beitrag zur Vorbeuge des Kannibalismus (Schwanzbeissen) der Schweine durch Kupieren des Schwanzes bei drei Tage alten Saugferkeln. Diss. Tierärztl. Hochschule, Hannover.
5. Duncan, I.J.H., 1970. Frustration in the fowl. In: B.M. Freeman and R.F. Gordon (ed.), *Aspects of Poultry Behaviour*. Br. Poultr. Sci. Edinburgh, pp. 15-31.
6. Duncan, I.J.H. and D.G.M. Wood-Gush, 1972. Thwarting of feeding behaviour in the domestic fowl. *Anim. Behav.* 20, 444-451.
7. Fraser, D., 1975. The effect of straw on the behaviour of sows in tether stalls. *Anim. Prod.* 21, 59-68.
8. Fraser, D., 1978. Observations on the behavioural development of sucking and early weaned-piglets during the first six weeks after birth. *Anim. Behav.* 26, 22-30.
9. Hughes, B.O., 1982. Feather pecking and cannibalism in domestic fowl. C.E.C.-Seminar III, pp. 138-146.
10. Martin, G., 1975. Ueber Verhaltensstörungen von Legehennen im Käfig, *Angew. Ornithologie* 4, 145-176.
11. Marx, D., 1969. Beobachtungen zur Verhaltensweise von Ferkeln während der mutterlosen Aufzucht. *Berl. Münch. Tierärztl. Wschr.* 82, 25-29.
12. Putten, G. van, 1969. An investigation into tailbiting among fattening pigs. *Brit. Vet. Journal* 125, 511-517.
13. Putten, G. van, 1980. Objective observations on the behaviour of fattening pigs. *Anim. Regul. Stud.* 31, 105-118.
14. Putten, G. van and J. Dammers, 1976. A comparative study of the well-being of piglets reared conventionally and in cages. *Appl. Anim. Ethol.* 2, 339-356.
15. Putten, G. van and W.J. Elshof, 1982. Inharmonious behaviour of veal calves. In: C.E.C.-Seminar III, pp. 61-71.
16. Sambras, H.H., 1982. Sauenhaltung - Wie sie ist und wie sie sein könnte. In: D.W. Fölsch und A. Nabholz (HrSg.). *Ethologische Aussagen zur artgerechten Nutztierhaltung*. Tierhaltung Bd. 13, Basel, pp. 49-70.
17. Stephens, D.B., 1974. Studies on the effect of social environment on the behaviour and growth rate of artificially reared British Friesian male calves. *Anim. Prod.* 18, 23-34.
18. Stephens, D.B., 1982. A review of some behavioural and physiological studies which are relevant to the welfare of young calves. In: C.E.C.-Seminar IV, pp. 47-69.
19. Unshelm, J., U. Andreae and D. Smidt, 1982. Behavioural and physiological studies on rearing calves and veal calves. In: C.E.C.-Seminar IV, pp. 70-78.
20. Webster, A.J.F. and C. Saville, 1982. The effect of rearing systems on the development of behaviour in calves. In: C.E.C.-Seminar IV, pp. 168-184.
21. Wierenga, H., 1982. The influence of the space for walking and lying in a cubicle system on the behaviour of dairy cattle. In: C.E.C.-Seminar V, pp. 171-180.
22. Wood, P.D.P., G.F. Smith and M.F. Lisle, 1967. A survey of intersucking in dairy herds in England and Wales. *Vet. Rec.* 81, 396-398.
23. Wood-Gush, D.G.M., 1972. Strain differences in response to sub-optimal stimuli in the fowl. *Anim. Behav.* 20, 72-76.

The usefulness of an inquiry on abnormal or disturbed behaviour (P.R. Wiepkema)

(written before the inquiry took place)

If an ethologist wants to define, that is to categorize, abnormal or disturbed behaviour patterns of animals kept by man, he becomes engaged in a taxonomic problem. Just like taxonomists the ethologist tries to reduce a group of biological phenomena (e.g. tail biting in pigs, tongue-playing in calves etc. or for the taxonomist e.g. rats, pigs, cows, monkeys etc.) to the same denominator (e.g. abnormal behaviour or in the taxonomists case e.g. Mammalia). However, in contrast with the taxonomists the (applied) ethologists often discuss the common denominator (abnormal behaviour) without being explicit as to the phenomena (behaviour patterns and animals) at stake. Due to the inherent vagueness of the adjectives abnormal or disturbed, there is no real consensus among ethologists as to which behaviour patterns belong to the class of abnormal behaviour. Of course, applied ethologists have described aberrant behaviour patterns of their animals and have interpreted them as indicators of some unacceptable disturbance. However, in all probability these behaviour patterns represent a class of heterogeneous phenomena, because of differences in causation, function or methods of the observer.

I think we can produce a classification and a definition of abnormal or disturbed behaviour, if we can agree which observed and well described phenomena we want to bring together. By this I mean that it must be worthwhile and feasible to make, for a limited group of animals (e.g. cows-calves, pig(lets) and fowl), a list of specified behaviour patterns which we all agree to be abnormal or disturbed and unacceptable.

If we succeed in making such a list some of our problems become much more transparent. First we restrict ourselves to a circumscribed group of phenomena. This must enable us to categorize them into one or more classes of abnormal behaviours and to define their characteristics in a biological way. Further for each of these behaviours we have to investigate (if not already done) their causation and/or function in order to make adequate proposals to prevent or to minimize their occurrence in practice. Finally this list and our knowledge about the behaviours presented on it enable us (applied ethologists) to make clear to our politicians, which behaviour patterns of the domestic animals mentioned are unacceptable (and for what reason) and to propose specific changes in existing husbandry systems that prevent or minimize the occurrence of the same abnormal or disturbed behaviour patterns. To start the procedure this simple inquiry should determine which behaviour patterns of "their" animals applied ethologists want to call abnormal in the sense of indicating a serious disturbance of the organism. The abnormality may be in the pattern, or the frequency, or the context of the behaviour. This inquiry may show on which of these behaviours most of us agree.

Inquiry: abnormal behaviours of farm animals

Please complete one form for each behaviour and species, age, sex, strain, purpose.

Questions:

1. What is the species of your animals?

- Cattle
- Pig
- Fowl
- Other

2. What is the age, sex and strain of your animal?

- Age =
- Sex =
- Strain =

3. For what purpose are your animals kept? (e.g. breeding, egg-production etc.)

4. What is the housing system your animals are living in when they perform the abnormal behaviour? (e.g. battery cage, pens with slatted floors etc., state floor space per animal, group size and other specifications).

5. What is the name of the behaviour (e.g. urine sucking, feather pecking, etc.).

6. Definition of the behaviour. You are requested to describe briefly all the observable parameters of the behaviour necessary to identify it. This includes form, intensity, frequency, orientation. Give your description without any interpretation. Keep in mind that your description must enable other people to recognize this behaviour in their own animals. The answer to question 6 is the most crucial one of the whole inquiry.

7. How does the behaviour develop? That is, where and when does it originate and throughout what part of the animals life does it occur?

8. How common is the behaviour?

Frequency per animal per day high
moderate

Percentage of animals in these conditions showing the behaviour

- > 15%
- 1-5%
- < 1%

9. Which other abnormal behaviours are associated in time with the one mentioned under 5 and 6? Mention these associated behaviours briefly here or use this place to describe those abnormal behaviours you want to add to the one already described under 5 and 6.

10. For what reason do you call the behaviour abnormal? Give very briefly your arguments.