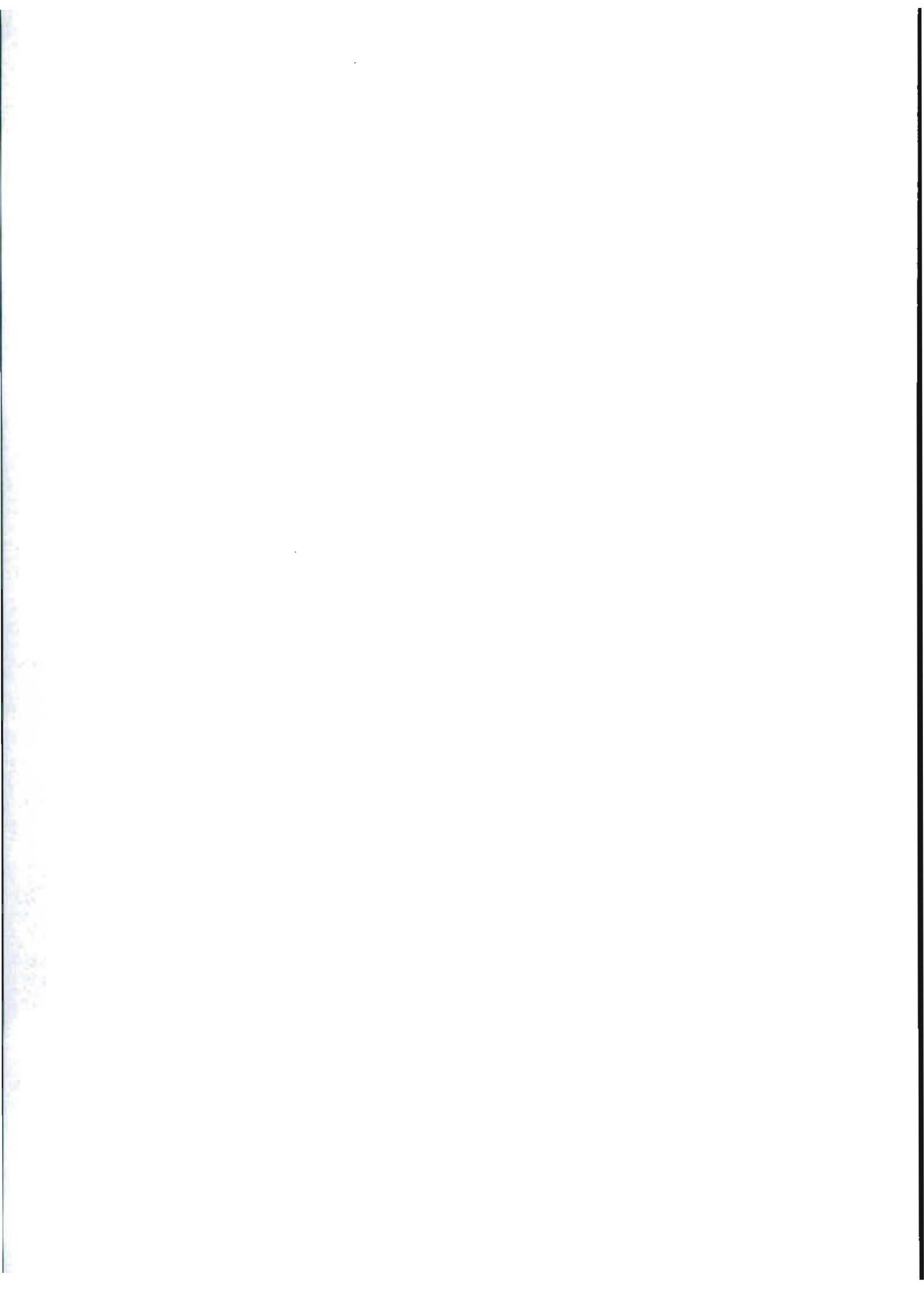




Report on the Welfare of Pigs Kept Outdoors

May 1996



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1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

Minister of Agriculture, Fisheries and Food
Secretary of State for Scotland
Secretary of State for Wales

7 May 1996

I have pleasure in submitting the Farm Animal Welfare Council's Report on the Welfare of Pigs Kept Outdoors which is to be published on 14 May. This considers the welfare implications for pigs farmed out-of-doors and pays particular attention to stockmanship, management and site selection.

Our Report gives details of current practice within the industry in this country and goes on to suggest changes which we believe would improve the welfare of the pigs. Most of our recommendations are for controls by code provision. The existing Pig Welfare Code, issued by the Agriculture Departments, concentrates on the welfare of pigs kept inside and it may be appropriate to draw up a separate document for outdoor pigs. Whatever the Government decides, we hope that implementation will be initiated as soon as possible. The Council would be happy to assist.

The Report also calls for research to supplement knowledge where the scientific evidence is sparse: for example, the needs of young piglets for water and the development of methods to introduce analgesia or anaesthesia to reduce the level of short-term and long-term pain associated with tooth-clipping and tail-docking.

Recognising that there are economic considerations for the industry and that, ideally, improvements to animal welfare should be applied across the European Union, we look to the Government to urge its EU partners to adopt welfare standards similar to ours. I shall be sending copies of the published report to the European Commission and the Council of Europe.

I hope that the Government will consider these proposals and carry out its usual consultation at an early date; and that when unilateral action is required it will be carried out quickly.

With kind regards,

A handwritten signature in black ink that reads "Colin Spedding". The signature is written in a cursive, flowing style.

Professor Sir Colin Spedding
Chairman
Farm Animal Welfare Council

PART I

INTRODUCTON

BACKGROUND

1. The Farm Animal Welfare Council (FAWC) was established in 1979. Its terms of reference are to keep under review the welfare of farm animals on agricultural land, at market, in transit and at the place of slaughter, and to advise Agriculture Ministers of any legislative or other changes that may be necessary. The Council has the freedom to consider any topic falling within this remit.
2. FAWC has produced one other report concerning the welfare of pigs which was the Assessment of Pig Production Systems (1988).
3. The Council was asked by the GB Agriculture Departments to consider the on-farm welfare of pigs kept outdoors and to make recommendations to Ministers. Accordingly, a working group of FAWC members was established and asked to provide advice to the Council. This report summarises the study and makes recommendations on behalf of the Council. Our membership is at Appendix A.

METHOD OF INVESTIGATION

4. The working group carried out an extensive consultation exercise, obtained oral and written evidence from experts in outdoor pig production and carefully examined scientific data. Visits were made to a number of outdoor pig farms, both large and small; a seminar was held with invited experts from industry and research bodies; and oral and written evidence was taken from animal protection societies.
5. Those who gave evidence and information are listed at Appendix B and we would like to thank all who participated. In particular, the Council is indebted to Mr Tony Walker of ADAS who attended the working group meetings and visits and provided expert advice; and Dr Jane Guise of Cambac JMA Research who also attended many of our meetings.

PHILOSOPHY OF APPROACH

6. The welfare of an animal includes its physical and mental state and we believe that good animal welfare implies both fitness and a sense of well-being. Any animal kept by man must, at least, be protected from unnecessary suffering.
7. We believe that the welfare of an animal whether on farm, in transit, at market or at place of slaughter should be considered with reference to the 'five freedoms'. These freedoms define ideal states rather than standards for acceptable welfare. They form a logical and comprehensive framework for the analysis of welfare within any system together with the steps and compromises necessary to safeguard and improve welfare within the proper constraints of an efficient livestock industry.

FREEDOM FROM HUNGER AND THIRST

- by ready access to fresh water and a diet to maintain full health and vigour.

FREEDOM FROM DISCOMFORT

- by providing an appropriate environment including shelter and a comfortable resting area.

FREEDOM FROM PAIN, INJURY AND DISEASE

- by prevention or rapid diagnosis and treatment.

FREEDOM TO EXPRESS NORMAL BEHAVIOUR

- by providing sufficient space, proper facilities and company of the animal's own kind.

FREEDOM FROM FEAR AND DISTRESS

- by ensuring conditions and treatment which avoid mental suffering.

8. The Council has considered how those with responsibility for the care of livestock can help to ensure that these freedoms can be provided. It concluded that those in charge of livestock should practice:

- caring and responsible planning and management;
- skilled, knowledgeable and conscientious stockmanship;
- appropriate environmental design;
- considerate handling and transport; and
- humane slaughter.

These general requirements can be applied to outdoor pigs as well as to other farmed animals and we kept them and the five freedoms in mind during our study.

PART II

OUTDOOR PIG PRODUCTION METHODS

INTRODUCTION

9. Since the domestication of pigs, outdoor systems have been an important part of pig production. As far back as the 9th century, pigs were reported to be kept in large groups to scavenge for food in the forests. In the 18th century, the increase in population and the enclosure of land encouraged greater control over pig production. This led firstly to the cottager's sty and eventually to the intensive housing based industry we have today.

DEVELOPMENT OF THE OUTDOOR PIG INDUSTRY

10. Large scale outdoor pig production was started in this country in the 1950s by Richard Roadnight in Oxfordshire. The Roadnight System developed as a break crop to fit into the arable rotation on the farm. Sows were simply run in large groups in fenced paddocks, farrowing twice per year. Weaned piglets were removed from the fields at about eight weeks and the sows put back into pig. Although the details of production methods have changed, this basic principle is still largely used today.

11. The Roadnight System increased in popularity in the 1960s and during this period about 5% of the UK breeding herd were in outdoor systems. Although there were not many herds, the average herd size was high, often up to 400 sows. As the basic requirement for outdoor production is a light, free-draining soil in a low rainfall area, most of the production then, as now, was located in the south of England, East Anglia and along the east side of Britain as far north as Aberdeen.

12. This situation remained static until the 1980s, after which there was a rapid increase in the proportion of the national herd kept outside. At the present time it is estimated that between 18 and 20% of the UK breeding herd is kept outdoors and in some areas of the country this is increasing.

13. The major reasons for the recent increase in outdoor production have been commercial. Indoor production has been under severe pressure. Continual low margins have resulted in a lack of re-investment, which has made many units uncompetitive. The capital that has been invested has often been directed at the need to comply with legislation. This includes welfare legislation, such as the impending ban on stalls and tethers, and also pollution control. These factors have combined to provide circumstances in which many farmers have opted to cease pig production.

14. Businesses wishing to expand and fill the gap left by those indoor producers who have left the industry, have found outdoor systems offer many opportunities.

a) Capital cost is significantly lower. For example, equipment costs for outdoor production are in the order of £250 to £350 per sow. In comparison, an

equivalent indoor unit could cost up to £1,500 per sow, taking into account the necessary services and manure storage facilities. Although these figures exclude the capital value of the land, many farmers have found that renting land on short-term agreements is better suited to the mobile nature of outdoor production.

- b) Using improved breeds and management techniques, performance and production can be comparable with indoor systems. The results of national recording systems show that indoor herds only average about 1 pig reared per sow per year more than outdoor herds.
- c) During the late 1980s the threat of falling arable margins, particularly on the light lands traditionally less suitable for cereals, made arable farmers look for alternative forms of income.
- d) Many companies, such as feed suppliers and abattoirs, have encouraged outdoor production by offering contract schemes to producers. Under these schemes, the company supplies the stock, the feed, the marketing and the technical support. The farmer provides the site, labour, equipment, straw and water in return for a management fee based on the number of pigs in his or her care and their performance. These schemes are particularly attractive to new entrants to the industry because of the significantly reduced working capital requirements.
- e) There are currently no planning restrictions for outdoor units. This has been a major advantage over new indoor units as objections to the possible production of odours from the latter mean that applications tend to take a long time and be expensive.
- f) There are fewer pollution restrictions for outdoor units. In contrast, many indoor units have been faced with capital expenditure for improving collection and storage of slurry, dirty water and solid manure to meet the required standards. However, we understand that there may be restrictions in the future on stocking rates for outdoor units, especially in areas such as Nitrate Vulnerable Zones.
- g) There are perceived welfare advantages for outdoor pig production compared with indoor systems. In some cases, but not all, these advantages have been realised in terms of premiums for niche market products. Most of the major retailers offer pig meat products produced in "traditional" or "high welfare" systems. These are largely, but not exclusively, based on outdoor production systems.

15. The UK is almost unique in having a suitable balance of relatively low rainfall and temperate climate suitable for outdoor production. It therefore has the largest outdoor pig herd in Europe. Other countries where there is some outdoor production include France and Denmark. There is also a growing outdoor pig industry in the United States of America.

16. The low pig prices in 1993 and 1994, together with two wet winters, have forced many producers out of production especially in the higher rainfall areas. However, it is anticipated that the proportion of pigs kept in outdoor systems will continue to rise. Currently expansion may be held back by the lack of availability of

suitable sites. This is affected by the maintenance of high arable margins, area payments and set aside.

CHANGES IN PRODUCTION METHODS

17. The following sub-paragraphs list the most significant changes which have occurred in outdoor pig production since it was first seen on a large scale in the 1950s. Improved welfare has not necessarily been an objective of the changes and they are mentioned primarily to illustrate the present nature of the industry:

a) Genetics:

Traditionally sows were of the Saddleback breed. Later the Saddleback x Landrace, known as the "Blue", was used. During the recent increase in outdoor pig production, Duroc crosses have replaced the Blue. The Duroc shares the same characteristics of hardiness and good mothering ability with the Saddleback but has significantly better growth and carcass characteristics and a resistance to sunburn. Despite improved breeding and selection, the progeny from outdoor pig production systems tend to have poorer carcass quality, in terms of backfat depth, than equivalent pigs from indoor units. Reports suggest that progeny from outdoor pigs tend to have an average of 1 mm more back fat.

b) Nutrition:

Outdoor pig production has benefited from the general improvement in the knowledge of the nutritional requirements of pigs. This has led to feeds that efficiently provide the nutritional requirements of the stock.

c) Health:

Generally, outdoor pigs suffer the same diseases as those kept indoors. However, because of the much lower stocking densities, enteric and respiratory diseases tend to be less of a problem. Potentially, parasites can be a problem but these can be adequately controlled by a good preventive programme.

d) Equipment:

There has been little development in the general design of huts but farrowing huts, in particular, have benefited from improved size and shape, the addition of doors and fenders and the provision of insulation and ventilation flaps. A more recent development is the introduction of large "tents" constructed out of large straw bales and tarpaulins, which are used to accommodate groups of sows at service and in the early stages of pregnancy.

e) Fencing:

A major development since the days of the Roadnight System has been the use of electric fencing to create paddocks in fields. Sows easily train to electric fences and two or three stranded fences will normally keep adult animals in their paddocks.

f) Paddock layout:

The introduction of electric fences has allowed a paddock system to be created. There are two main types of paddock layout as follows:

(i) The conventional system is used for most herds and can accommodate large numbers, sometimes up to 1,000 sows. Paddocks are normally rectangular in blocks of four, separated by roadways. They can be laid out to take into account the natural shape and size of fields. Normally paddocks will be allocated for the various parts of the herd such as gilts, a training area, service, dry sows and farrowing.

(ii) The radial system is a more recent development more suitable for smaller herds, say from 150 to 300 sows. Wedge shaped paddocks are laid out within a large circle and gated into a small handling and access area at the centre. There is normally a wide track around the perimeter fence and access to the centre which allow servicing of the paddocks. Most operations involving pig movement and handling can be carried out single-handed in this system.

g) Feed delivery:

Until recently, feed was delivered into the paddocks by hand. Now there is increasing use of automatic feeders that throw the pig nuts into the paddocks from a bulk trailer controlled from the tractor. These have the advantage of saving labour and providing a wider distribution of feed.

h) Water:

Traditionally, water is supplied in cattle type troughs. A recent development has been the introduction of the wallow type trough which, in addition to providing drinking water, allows the sows to keep cool.

TYPES OF OUTDOOR PRODUCTION SYSTEM

18. The main type of outdoor production system involves paddocks for farrowing sows, in-pig dry sows and service paddocks for weaned sows and boars, usually in weekly groups depending on the herd size. Progeny are normally weaned at about three weeks of age and either moved off the field into permanent buildings or into specialist weaner accommodation set up in the field until they reach 10 to 12 weeks of age. Outdoor finishing systems are rare.

19. Accommodation for weaners usually comprises a monopitch structure with an insulated roof and provision for ventilation, but no floor, and an outside run made from hurdles. A deep straw bed is provided for a group of 30 to 50 weaners. Feed and water are available on an ad lib basis. The hut is moved to a clean site between batches or if conditions in the run become too wet.

20. Many service systems involve mixing sows at various stages. The most common system involves introducing a small number of sows to a group of boars each week for 3-4 weeks. This becomes a stable group during the dry sow period until the pigs are re-mixed with sows of the same stage of pregnancy prior to farrowing.

21. A recent development from Denmark, currently being tried in the UK, is the system of keeping sows in dynamic groups from service. A typical system for a 400 sow herd would involve four dynamic groups of 32 sows and four boars housed in a straw bale structure with a tarpaulin cover and access to the paddock (although there is also the possibility of allowing access to a permanent building). Sows are weaned into a separate paddock where they are fed generously or ad lib for about four days. When they show first signs of oestrus they are transferred into one of the dynamic groups and aggression is not normally a problem because of oestrus and boar activity. Four sows are removed each week when seven to eight weeks in-pig and mixed with other sows at the same stage in dry sow paddocks. This system offers better control over service and boar activity. We welcome this, and the further development of individual boar penning and fully controlled service, which help to avoid potential problems to sows and boars from excessive mating.

ORGANIC FARMING

22. The outdoor farming of pigs is a method that is close to the ideals of organic farming. Recognised organic standards (e.g. UKROFS and the Soil Association) require high levels of stockmanship and exacting attention to animal welfare to ensure healthy stock while avoiding routine drug use. Organic standards-setting authorities allow conventional veterinary treatments where their uses are indicated, but with extended withdrawal periods for animals or products which are to be marketed under an organic label.

23. We welcome this flexible approach and emphasise that, should a pig farmed outdoors show signs of disease or injury, immediate effective treatment must be given. The welfare of organically farmed pigs should not be compromised and where the use of conventional drugs, including vaccines and anthelmintics, is indicated, they must be administered even if this affects the timing or value of the sale of finished pigs (see paragraph 105).

24. It is important that those considering the establishment of an organic unit should take advice from one of the organisations which sets standards for enterprises of this nature.

PART III

THE WELFARE ISSUES

INTRODUCTION

25. We have considered the welfare of pigs kept in outdoor units against the ideals listed in the five freedoms (paragraph 7). We conclude that outdoor pig keeping can achieve the objectives of the five freedoms but is particularly susceptible to variations in management, stockmanship, climate and site suitability. All these factors are dealt with in detail in this report.

26. Pigs can be provided with *freedom from hunger and thirst* through proper management and stockmanship which ensure that adequate food and water are available daily and are distributed in a manner which minimises competition. Account should be taken of climatic conditions, for example the possibility of cold winter weather which could cause water to freeze.

27. *Freedom from discomfort* can be achieved through the provision of appropriate shelter (e.g. huts) which should keep the pigs comfortable in all weather conditions. This shelter should include a comfortable, dry resting area, be free from draughts and should be properly maintained.

28. If the pigs are to be *free from pain, injury and disease* it is essential that the herd is adequately managed, inspected at least daily and equipment is properly maintained. Action must be taken promptly to respond to any problems discovered. There may be short-term pain caused by management procedures such as tagging but long-term pain should be avoidable.

29. Pigs kept outdoors have a great deal of *freedom to express normal behaviour*, although those which are nose-ringed are denied the freedom to root. Provision of straw or other suitable bedding material will encourage nesting.

30. *Freedom from fear and distress* is seldom completely achieved in any farming system and there are times when fear stimulates avoidance action by animals. Stockmen can minimise fear and distress by careful supervision and responding to problems during, for example, feeding, mixing and handling.

31. We believe that outdoor pig-keeping has the potential to provide all the conditions required for good welfare. However, the achievement of these conditions is dependent on high stockmanship, good management, site selection and the right choice of stock (see paragraph 148). Even if these are right, in order to achieve acceptable standards of welfare, all pigs kept outdoors **must** be provided with:

- **easy access to adequate food and water**
- **a comfortable, dry lying area**
- **effective prevention or control of disease and injury**
- **conditions which permit expression of natural behaviour**
- **inspection, at least daily, by a competent stockman**

32. We describe below how these may be achieved and discuss several important welfare issues which must be considered.

STOCKMANSHIP

33. The stockman is the most significant influence on the welfare of the pigs in his or her care and must plan and execute an effective daily routine whatever the weather conditions.

34. Outdoor pig-keeping calls for a high degree of dedication by management and stockmen. Looking after an outdoor unit is physically arduous and requires the stockman to be physically fit. In short, a high calibre of person who is prepared to work hardest when the conditions are worst, is needed to operate an outdoor unit effectively. The stockman must be willing to work alone and have a sympathetic attitude to the pigs, together with an ability to recognise the needs of the animals and respond to them.

35. Anyone new to pig-keeping should receive appropriate training before being placed in sole charge of the animals. Those who already have experience of indoor units will still need to learn about the special needs of the outdoor herd. It may be possible to achieve the necessary level of knowledge through on-farm training from experienced outdoor pig stockmen but it may also be necessary for the newcomer to attend an appropriate training course run by an approved agricultural trainer. The industry should ensure that all training is validated by encouraging trainees to enter schemes such as the National or Scottish Vocational Qualifications. NVQ level two is the minimum level of competence for those being left in sole charge of outdoor pigs. Management has a major role to play in motivating stockmen and this includes making arrangements for adequate training and, where necessary, the updating of knowledge.

36. It is essential to ensure that sufficient staff are employed to carry out effectively all necessary tasks throughout the year. There will be times when additional staff and equipment will be required to cope adequately with increased workload due to circumstances such as extreme weather conditions.

Recommendations

37. *Newcomers to outdoor pig-keeping should obtain appropriate training from experienced outdoor pig stockmen and/or from approved agricultural trainers.*

38. *Those responsible for the management of the unit should ensure that the animals are cared for by sufficient, well-motivated, properly trained stockmen.*

39. *The industry should take steps to ensure training is validated.*

SITE SUITABILITY

40. Selection of a suitable site is one of the most important decisions for the outdoor pig farmer because an unsuitable site will greatly increase the potential for poor welfare. When planning a new unit it is essential that the selected site is

satisfactory, including plans for future movement. The industry, together with agricultural consultants, may wish to consider the development of a computer model which should take into account factors such as stocking density, rainfall and soil type to assist in the determination of site suitability.

41. Waterlogging and poaching of the ground are the main causes of problems on unsuitable sites so, ideally, the paddocks should be in a low rainfall area on a light top-soil overlying a free-draining sub-soil with the absence of sharp stones likely to cause foot damage. A good, well-established grass sward provides additional drainage on some soil types and protects the soil should it become waterlogged which is of particular importance in farrowing paddocks. Lower stocking density and the rotation of paddocks help reduce the effects of wet weather.

42. Whilst sloping fields can aid drainage, excessive slopes should be avoided particularly for farrowing paddocks because bedding and piglets can roll in the hut increasing the risk of overlying. Sites which are susceptible to flooding should be avoided. Natural shelter is important especially in areas with a high risk of wind chill. Further information about site selection is at Appendix C.

Recommendations

43. *Before establishing a new unit, newcomers to outdoor pig-keeping should take impartial expert advice about site suitability. We understand that this advice exists within agricultural consultancies and the industry and we look to such organisations to make appropriate expertise easily available to those concerned at reasonable cost. Pigs should not be moved onto a site which is judged to be unsuitable.*

44. *When planning to move pigs onto a site it is essential that full consideration is given to site selection. This should include ensuring that the site is free-draining, has suitable topsoil, is not susceptible to flooding, has adequate access and takes advantage of natural shelter. There should also be plans for movement to follow-on sites in future years.*

45. *The industry should consider the development of computer models to assist with the selection of a suitable site for outdoor pig-keeping.*

46. *Each site should be individually assessed and steps taken to meet the following criteria:*

- *easy access to food and water - a site which can become badly waterlogged is unacceptable because the pigs will find it difficult to reach food and water.*
- *a comfortable, dry lying area - by providing appropriate bedding in the shelter and, where necessary, outside. A well-drained site will keep bedding in good condition and minimise the movement of wet mud into the hut.*
- *control of health problems attributable to the site - isolation from other pig units will reduce the risk of cross-infection. A break from pigs of six months or more where disease or parasites have been evident will reduce the risk of carry*

over of infection. Sites with a predominance of sharp stones, which cause injury to the feet, are inappropriate and should be avoided.

- conditions to permit expression of natural behaviour - the site should provide an adequate area which the pigs choose to use (in all but extreme weather conditions) for exercise, exploration and social behaviours.*
- inspection, at least daily, by the stockman - site conditions and lay-out of site must allow the stockman access to inspect, feed and service the unit in all weather conditions.*

CLIMATIC CONDITIONS

47. We have already advised that the ideal site for keeping pigs outdoors is on a light and free-draining soil in an area of low rainfall. Heavy rainfall, strong winds, high temperature and extreme cold can all affect welfare standards on a pig unit.

Rainfall

48. This should preferably be below 750mm annually (which is the figure recommended by both ADAS and many of the other consultancies offering advice about pig farming) but rainfall must also be considered in relation to soil type and ground conditions. There are parts of the UK where annual rainfall exceeds 750mm but where the excellent soil composition allied to good management allow a unit to perform satisfactorily. Conversely, a marginal soil type is only likely to be suitable in an area of low rainfall and will be unacceptable where the rainfall is high. Clearly there is an important interaction between rainfall and soil types and we stress that careful site selection is the key to avoiding excessively muddy conditions. Provision of a suitable floor-board or waterproof cover over the ground inside the huts may be necessary on some sites.

Cold

49. Piglets are extremely susceptible to chilling and should have access to an area where they can be sufficiently warm to maintain their body heat. This can be achieved by allowing them to lie next to the sow on dry bedding in a draught-free hut. Chilled piglets have a reduced resistance to disease, are lethargic and often fail to suck properly. In the early stages of growth, cold conditions predispose piglets to disease which often results in scouring and increased mortality. As the pig grows its ability to survive low temperatures improves, but growth rates are reduced and feed conversion suffers.

50. Adult pigs are resistant to cold conditions in the short-term, but the ultimate effects are loss of body condition, reproductive failures and high culling rates. Additional feed increases the supply of dietary energy and thereby increases heat production. In practice, feed levels are raised to maintain body condition and therefore the consequences of excessive cold are increased feed costs (see paragraph 121). Good management is important during periods of cold weather, especially on sites where winter temperatures are particularly low, and all pigs should be provided with shelter which is draught-free and has a deep straw bed. In the absence of these resources welfare may suffer. Where cold and wet conditions

combine, particular problems prevail: bedding is more likely to become wet and lose its insulation characteristics and food is likely to be lost in wet and muddy conditions.

51. The use of insulation in a farrowing hut can be beneficial by reducing condensation and heat loss when pigs make contact with the sides. However, experience indicates that insulation makes little difference to air temperature in the hut or to pig performance levels. Heat loss can be significantly reduced from a hut by using a flap of a plastic curtain over the doorway.

Wind and snow

52. Wind can contribute to wet bedding by driving rain or snow into the shelters. It can also increase air speed through the huts reducing the temperature of the pigs, a particular concern during cold spells. Site selection should take account of natural shelter and huts should be draught-free, fixed securely to the ground and backed into the prevailing wind with the entrance adequately protected.

53. Snow can be a hazard if it blows into shelters, shorts-out electric fencing or makes access to the pigs difficult. Local features in the landscape may reduce snow cover and should be taken into account when determining the siting of an outdoor unit. Plastic flaps over doorways during the winter help to reduce both wind and snow getting into the huts although potential problems with condensation may arise if the huts are not insulated. It is essential that there is access to the site in all weather conditions so that food and water can continue to be provided.

Heat stress and sunburn

54. Pigs subjected to excessively high temperatures are likely to suffer heat stress. When a pig's body temperature rises beyond its normal limits the animal becomes heat stressed. The first sign is panting and, if the body temperature continues to rise, the pig collapses and may die. Heat stress not only causes suffering but it also reduces productivity and affects fertility. It can lower the feed intake of lactating sows thereby reducing their milk production and culminating in adverse effects on their piglets. It is essential that pigs are provided with sufficient water, both for drinking and in wallows, during periods of high temperature (see paragraphs 123 and 124).

55. Farrowing huts can become very hot in summer, so it is important to keep the interior as cool as possible in order to encourage the sows to remain with their piglets. This may be achieved by using an adjustable ventilation opening at the rear of the hut and/or insulation to reduce solar heat gain. The greatest benefits of insulation in farrowing huts are likely to be seen in hot weather.

56. Pig breeds vary in their susceptibility to sunburn which can pose a major welfare problem if suitable precautions, such as the provision of wallows and shade, are not taken. Traditionally wallows are constructed in the paddocks using water from a bowser, overflowing water trough or water jet. On certain soils, and where sows have nose-rings, it may be necessary for a hole to be dug by the stockman. The provision of a suitably muddy wallow improves evaporative heat loss and provides a durable layer of mud on the body which will protect the pig from sunburn for a

period after wallowing. However, there is a potential danger in the farrowing paddock as the sow may spend excessive periods in a wallow and leave her piglets unattended for so long that they suffer or even die. It is therefore extremely important to keep the inside of the farrowing hut as cool as possible so that there is no disincentive in returning to it.

57. Information about the avoidance of heat stress is contained in a MAFF publication *Heat Stress in Pigs - Solving the Problem* which is available free from MAFF Publications, London, SE99 7TP (tel: 0645 556000) - quote ref PB 1316.

Recommendations

58. *Areas of high rainfall should be avoided, particularly where poor drainage is also a consideration. Sites exposed to high wind and where long periods of extreme cold, frost and snow might be expected are also unsuitable.*

59. *During winter months, shelters should be well-bedded and draught-free. Sheltering the doorways by siting the huts with their backs to the prevailing wind, and perhaps by the use of plastic flaps over the doorways, is necessary to minimise the possibility of bedding becoming wet through seepage or driven rain or snow.*

60. *During summer months, farrowing huts should be insulated and effectively ventilated and water must be easily accessible.*

61. *Shelters should be of sufficient weight, or effectively secured to the ground, to prevent movement by wind or by sows.*

62. *Wallows containing a suitable, muddy material should be provided, particularly for dry sows, throughout periods of hot weather.*

63. *Those responsible for the keeping of pigs outdoors should familiarise themselves with the MAFF Publication *Heat Stress In Pigs - Solving the Problem*.*

STOCKING DENSITY

64. Stocking density will vary according to the interaction between climate, drainage and stockmanship. Careful judgements must therefore be made to calculate the correct stocking density for a particular site. As a general rule, stocking densities for breeding sows vary between 15-25 sows per hectare (6-10 sows per acre) but it is necessary to set the level to match the quality of the site. Ideally, 4-6 hectares (10-15 acres) of clean ground per 100 sows should be available each year, with the ground clear of pigs for at least six months between batches. It is important for the pig-keeper to make a careful assessment of the ground conditions on a new site **before** setting a stocking density and we would encourage a low stocking density initially, with the option of increasing stocking density in the light of experience.

65. Whilst we suggest an overall stocking density of 15-25 sows per hectare, we recognise that the density within each paddock can be higher than this. For example, in a recent survey of management and welfare in outdoor pig production

systems, it was stated that average stocking densities in service, dry sow and farrowing paddocks can be 33, 27 and 19 pigs per hectare respectively (reference: Abbott, T A, Hunter, E J, and Guise, H J (1994) Survey of management and welfare in outdoor pig production systems in "Welfare of Extensively Farmed Animals", Scottish Centre for Animal Welfare Sciences, Edinburgh, 3 September 1994).

SET-ASIDE

66. An aspect which affects the availability of suitable land, which in turn may affect stocking density, is the interpretation of the rules of the set-aside scheme. Pig producers argue that in principle it should be possible to place pigs on land after the end of the set-aside period in August but before the end of the restriction period in mid-January. The problem occurs in the requirement that arable producers do not gain from the agricultural use of land that has been set-aside, the principle that is, of course, at the centre of the scheme.

67. Current set-aside rules require tenant farmers to change sites during January which is often the worst time of year for the movement, and thus the welfare, of pigs. During the winter months site conditions inevitably will be bad, especially as tractors will rut the site for the rest of the pig occupation. We suggest that these rules are reviewed to enable tenants to enter set-aside land in the autumn as currently practised by owner occupiers. In addition, the rules reduce the availability of suitable ground and encourage the use of non-grassland. This in turn may force producers to use land within the arable rotation, that does not have adequate ground cover, to the detriment of the pigs welfare.

Recommendations

68. *The stocking density on an outdoor unit should be such that ground conditions are satisfactorily maintained and likely to provide the conditions set out in paragraph 46. On an ideal site it is likely that this will be achieved at a maximum stocking density of about 25 sows per hectare (10 sows per acre) across the site.*

69. *Stockmen should carefully monitor ground conditions in the paddock and where these prove unsatisfactory an adjustment of stocking density, or other management changes, must be introduced.*

70. *We recommend that the set-aside rules are modified in regard to their effect on tenant outdoor pig farmers and urge the Government to open discussions with the European Commission on this point.*

MANAGEMENT OF UNITS

71. Paragraphs 33-39 deal with the importance we attach to good stockmanship. The following paragraphs cover in more depth the action which should be taken by the stockman to protect the welfare of the pigs.

72. Daily inspection of the pigs **must** be undertaken, this is a requirement of the Welfare of Livestock Regulations 1994. As part of the inspection the stockman

benefits. We believe research is needed into the age at which pigs are nutritionally, immunologically and psychologically best suited to weaning.

Farrowing hut design

87. A wide range of different designs of farrowing hut have been seen on the outdoor units visited. There is no clear agreement about the optimum size or design required to ensure that the hut allows the sow to exhibit her normal behaviour, whilst offering the best protection and conditions for the piglets. Guidance is also required on the benefits of insulation, ventilation and ease of management by stockmen. Accommodation should be designed to take account of adverse weather conditions. Badly designed huts can result in poor welfare.

Recommendations

88. *We endorse the provision in the Welfare of Livestock Regulations 1994 requiring the stockman to inspect pigs thoroughly at least once a day to check they are in a state of well-being. This is a helpful legal minimum. However, we recommend the Welfare Code requires inspection of farrowing sows and piglets at least twice daily.*

89. *Where sows at the time of farrowing are found to be in difficulty, immediate and effective action must be taken and, where necessary, veterinary advice should be obtained. This is already a requirement of the Welfare of Livestock Regulations 1994 and could usefully be reflected in the Welfare Code which is often more accessible to farmers than the legislation.*

90. *We recommend the provision of isolation and acclimatisation facilities for replacement breeding stock.*

91. *We recommend that adequate facilities should be provided to enable pigs to be trained to electric fences and that such fences should be checked at least daily.*

92. *Where weaner or finishing pigs are kept in outdoor systems, adequate provision should be made to protect pigs from extremes of weather.*

93. *No pig should be weaned at less than three weeks of age unless there is a justifiable, unexpected reason e.g. "the welfare or health of the dam or piglets would otherwise be adversely affected".*

94. *We recommend that research is commissioned to establish the age at which pigs are nutritionally, immununologically and psychologically best suited to weaning.*

95. *Research should be carried out to ascertain the optimum size and design of farrowing huts, including the benefits of insulation, ventilation and ease of management by stockmen.*

HEALTH AND DISEASE

96. In general, pigs in outdoor units have high health status due to low stocking density and reduced infectious challenge. Whilst treatment may be more difficult

outdoors, one advantage of this method of pig-keeping is that infection dilution occurs in the open air and lower stocking densities and stress levels tend to keep the animals in better condition: so outdoor pigs are generally healthier than those kept indoors. However, where disease occurs the implications for outdoor units are serious due to the difficulty in isolating the pig and administering treatment. Prevention is always better than cure and we concur with the advice given by the Pig Welfare Advisory Group, that a preventive health programme should be drawn up in conjunction with a veterinary surgeon and incorporating a vaccination, a anthelmintic programme and effective control of external parasites which cause disease.

97. Any disease can cause welfare problems and stockmen should be aware of this and take preventive action where possible. This may be achieved using routine vaccination programmes. Whilst many diseases may be controlled by vaccination, routine protection against *E. coli*, swine erysipelas, clostridial diseases and porcine parvovirus should be seriously considered. Outdoor pigs are still susceptible to the usual range of pig diseases and therefore constant vigilance and prompt action is essential. Veterinary assistance should be sought if the stockman's immediate action is not effective.

98. In order to maintain herd health it is important to start with high health status stock and to isolate them, as far as practicable, from other herds. Stockmen must be on the lookout for injury, disease and contamination of the site by birds and wild animals and treat the pigs as soon as symptoms occur. Separate inspection/isolation facilities should be available and can be achieved by the use of electric fencing to isolate a small area which includes a well-bedded, draught-free hut. It is accepted that problems due to re-mixing after a period of separation may preclude this option. Nonetheless, it may be necessary to isolate a sick animal particularly if it is being bullied by its companions.

99. It is important to monitor the health of boars and to deal quickly with any deterioration whilst the animals are still within their social group. This is particularly the case if a boar is lame, because activity in the service paddock could exacerbate the problem. Should a boar not respond to treatment whilst in the group it should be removed although there are likely to be difficulties in re-introducing the animal. This emphasises the need for early treatment whilst still in the group.

100. Systems that use groups of boars in service paddocks increase the risk of injury through continuous contact with sows, especially those on heat. This is reflected in higher ratios of boars to sows and higher culling rates. For these systems boars selected for their robustness should be used.

101. Systems that allow individual housing of boars and supervised services reduce the risk of injury and allow boars to be used of a higher genetic potential, more suitable for the market requirements.

¹ The pig Welfare Group prepared, in 1993, a series of booklets about pig keeping which included Booklet 8, Outdoor Sows. All are available from MAFF Publications, London SE99 7TP (tel: 0645 556000).

should look for signs of injury or illness, ensure that food and water are freely available and make any necessary adjustments in the event of a problem. We believe an inspection once a day is the absolute minimum and that inspection of farrowing sows and piglets should be carried out at least twice each day. The stockman should look inside every farrowing hut during his or her rounds.

73. Where possible, pigs should be kept in stable groups to reduce the amount of mixing. If systems incorporating dynamic groups for dry sows are used, a high degree of management is required at mixing. If excessive aggression occurs, advice should be sought to reduce the problem or alternative systems employed. Pigs should always be handled quietly and firmly, to avoid unnecessary pain or distress. A good stockman will have a beneficial effect on the temperament of the herd.

74. We endorse the provision in the existing Welfare Code for pigs that sows and gilts should be managed so as to be in suitable body condition at the time of farrowing. Pigs on outdoor units seldom experience difficulties at farrowing but where problems occur it is essential that reaction is swift and effective. Moving the sow into facilities which permit assistance should be considered and, if necessary, veterinary help sought.

75. We have heard evidence that sows which farrow in individual paddocks have improved welfare and slightly improved performance. Since this complies with the sow's natural tendency to seek isolation at farrowing, we urge producers to offer sows individual farrowing paddocks wherever possible.

Acclimatisation

76. Replacement breeding stock introduced from another unit, especially an indoor unit, should be acclimatised to the conditions of an outdoor site before integration with the rest of the herd. The duration of their isolation from the main herd should be at the recommendation of a veterinary surgeon. Pigs reared on indoor units will be particularly susceptible to extreme weather conditions so a suitable site and appropriate accommodation, shade and wallows should be provided. The pigs' awareness of, and level of training to, electric fencing and water supply should also be considered.

Fencing

77. Most outdoor units now use electric fencing systems to create paddocks. These should be properly constructed and maintained, with an appropriate current to protect the security of the stock, to avoid animals leaving the site and to keep groups of animals apart. This is particularly important between groups of boars. Pigs easily learn to respect electric fences, but adequate training facilities should be provided. All fences should be checked at least daily and any problems such as slack or broken wires or earthing should be rectified immediately.

Weaners and finishing pigs

78. Pigs are often weaned into field-based systems and for some markets it is a requirement for pigs to 30 to 40 kg liveweight. Outdoor finishing of pigs on a commercial basis is rare.

79. Newly weaned pigs are particularly susceptible to chilling, so huts should be designed and managed to minimise the effects of extremes of temperature. They should be insulated and be provided with ample straw bedding. Good management of ventilation openings is essential to control the degree of heat loss from the huts according to the ambient conditions.

80. In order to prevent the risk of disease transfer, weaner huts should be moved onto a clean site between batches. Straw should be provided in the dunging area to avoid the piglets getting wet and chilled. If conditions become very wet, the huts should be moved to a clean site.

81. As weaners are generally kept in large groups, it is important to provide ample lying area in the huts to avoid competition for space. In addition, adequate provision of feed and water should be made including plans for getting supplies to the huts in bad weather.

82. Where finishing pigs are kept outdoors, accommodation should be provided that allows adequate space and access to feed and water, including plans for getting supplies to pigs in bad weather. It should also protect pigs from extremes of temperature by providing a dry, draught-free, well-bedded lying area and shade and wallows. Suitable handling facilities for moving pigs from the pens without causing them undue stress should be provided.

83. Suitable hospital pens should be provided for ill or injured pigs. These should provide conditions where competition for space, feed and water is significantly reduced (see paragraph 106).

Early-weaning

84. It is FAWC's view that piglets should not be weaned at less than three weeks of age. This has been embodied in the Welfare of Livestock Regulations 1994 which state that:

"Piglets must not be weaned from the sow at an age of less than three weeks unless the welfare or health of the dam or piglets would otherwise be adversely affected."

85. We have been told of the increasing use of ISO-weaning (segregated early weaning), which was developed in the United States. It is claimed that weaning pigs earlier than three weeks may offer benefits from the higher passive immunity derived from the dams colostrum. However, we are concerned that such practices have nutritional and practical disadvantages and may not comply with present legislation. We ask Ministers to seek from the industry clear, qualitative evidence of the adverse effects on either sows or litters which are avoided by such early weaning.

86. Some argument was presented to us that the minimum weaning age should be increased above three weeks of age. Although we have some sympathy with these views and, in particular, accept that the younger the weaning age the greater the behavioural problems found after weaning, we do not yet have sufficient information to be confident that a higher weaning age will have definite welfare

Lameness

102. During its visits the working group did not find that lameness in outdoor pigs was a major problem although foot lesions were fairly common. The prevalence of lameness depends on the season and the type and condition of the land in use. Wet ground, particularly that containing sharp stones, may lead to severe damage to the feet. Land which is badly poached and then baked dry in summer or frozen in winter can also cause problems. Advice about lameness may be found in a free MAFF booklet *Lameness in Pigs* which is available from MAFF Publications, London SE99 7TP (tel: 0645 556000) - quote ref PB 1148. Where necessary veterinary advice should also be sought.

Stone-chewing

103. Some units experience stone-chewing which causes damage to the pig's teeth. If stones are swallowed death may be caused in extreme cases. The reasons for stone-chewing are not fully understood but it could be a stereotypy.

Recommendations

104. *We recommend that each herd should have a written health and welfare programme produced, where necessary, with veterinary advice setting out health and husbandry activities concerning the whole of the cycle of production. This should help to ensure that routine prophylactic measures are given at the correct time, at the correct dose and to the appropriate animals. This programme should be reviewed and updated annually.*

105. *The health of a pig farmed outdoors should not be compromised and if signs of disease or injury are noticed, immediate effective treatment must be given.*

106. *We endorse the Welfare of Livestock Regulations 1994 requirement which states that "sick or injured pigs shall, where necessary, be isolated in suitable accommodation with dry, comfortable bedding".*

107. *Handling facilities should be available which effectively enable the inspection and, where necessary, treatment of sows and boars.*

108. *We recommend that the Government commissions research regarding the re-introduction of boars back into social groups after removal for treatment. Such research should lead to clear practical advice on whether, and if so in what way, boars should be re-introduced to paddocks after treatment.*

109. *We encourage the use of individual housing systems for boars and supervised services. Attention should be given to avoid excessive mating activity between boars and sows.*

110. *Appropriate treatment for lame animals must be given as soon as is practicable.*

111. *Those responsible for the keeping of pigs outdoors should familiarise themselves with the MAFF booklet *Lameness in Pigs*.*

112. *We recommend that research is undertaken to discover the causes of stone-chewing in outdoor pig herds.*

FOOD AND WATER

Food

113. The Welfare of Livestock Regulations 1994 state that:

"All pigs shall be fed on a wholesome diet appropriate to their species, age, weight and behavioural and physiological needs, which is fed to them in sufficient quantity to maintain them in good health and to promote a positive state of well-being."

"All pigs must be fed at least once a day. Where pigs are housed in a group and do not have continuous access to feed, or are not fed by an automatic feeding system, each pig must have access to the food at the same time as the others in the feeding group."

114. Unlike indoor production, where it is possible to monitor carefully body condition of each sow and take remedial nutritional action, the outdoor herd can be more difficult to manage. Food provision should be adjusted according to weather conditions. It therefore requires a high degree of management skill to react to changing weather so as to optimise feed inputs. From the point of view of pig welfare, the most important requirement is to ensure that sufficient food reaches all animals. Food is presented to outdoor pigs in a variety of ways (e.g. by hand or by a mechanical feeder, which should be kept off the paddock to avoid rutting) most of which are quite capable of achieving good welfare but it is essential that feed is kept in good condition and is widely distributed so that all pigs can gain easy access to it without undue competition. There should be a suitable, well-drained feeding area and this is particularly important if the food is scattered directly on to the ground. There are other feeding systems under trial and provided these facilitate the even distribution of food to all sows we welcome their development.

115. We understand there are some units where the intake of sand with food which has been scattered on the ground is sufficient to cause injury or, in extreme cases, death. Where this occurs, alternative methods of feeding, for example the use of troughs or the provision of a material such as rubber belting to feed on, should be introduced.

116. It is important for sows to farrow in good body condition and to have received adequate food and water to support the onset of milk production. Modern strains now being used require particular attention to be paid to the levels of nutrition prior to first farrowing to ensure that a sufficient level of fat is present to cope with outdoor conditions. This requirement is also important for lean strains of boar when they are first introduced. It is accepted that immediately after farrowing the sow may wish to remain with her piglets and may therefore choose not to eat or drink for 24 hours. The stockman should take care during this period when the sow will be particularly protective of her young.

117. Indoor units provide piglets with creep feed at a young age to prepare them for a dry food diet after weaning. As yet, no practical method of feeding creep to very young pigs on outdoor units has been devised so very careful management will be necessary at weaning to ensure that all piglets take to dry food. We do not know whether sucking pigs which do not receive supplementary feed are adversely affected and believe that this should be the subject of research.

Recommendations

118. *All pigs must be fed daily a wholesome, appropriate diet to maintain them in good health and to promote a positive state of well-being.*

119. *The pig-keeper should ensure that food is properly stored to keep it in a good, wholesome condition and in a location to ensure sufficient quantities to cater for emergencies (e.g. disruption of supply due to adverse weather).*

120. *Food should be distributed widely and evenly to avoid aggression between animals or an alternative method to ensure even consumption should be used.*

121. *The feed intake should be adjusted to take account of the effect different weather conditions have on the body condition of the pigs in the group e.g. extra food should be provided in cold weather.*

122. *Research should be undertaken to establish the nutritional requirements of young pigs on outdoor units with specific reference to the implications of their not receiving supplementary feed prior to weaning.*

Water

123. The Welfare of Livestock Regulations 1994 state that:

"All pigs shall be provided with an adequate supply of fresh drinking water each day. Feeding and watering equipment must be designed, constructed, placed and maintained so that contamination of the pigs' feed and water is minimised."

124. Water is required not only for drinking but also to make wallows (see also paragraph 56), so the site must be properly supplied throughout the year. Flow and pressure from the mains or a borehole should be established to provide an adequate supply to the site. The troughs should contain sufficient water for at least a day and there should be adequate access appropriate to the number of sows in the group. Farrowing sows, in particular, should have a continuous supply of water and during periods of interrupted supply should be allowed to drink at least twice a day.

125. On outdoor units where sows have a tendency to chew stones, which are then often dropped into the water trough, it is important to remove the stones frequently to maintain the effectiveness of the trough.

126. Arrangements should be made to ensure an adequate supply of water to all stock in all weathers. Particular attention is needed at times of freezing conditions. Furthermore, the stockman should ensure that damage to water pipes by the sows,

which often happens during periods of hot weather, does not disrupt provision of water. The use of a bowser can ensure effective supply where necessary.

127. Many farmers place fenders around the entrance to the farrowing hut to keep the litter together and prevent the piglets from mingling with other sows which may result in competition from cross-sucking. These fenders retain the young piglets often until weaning but allow the sow to come and go as she pleases. However, in summer sows may abandon piglets for several hours while they use wallows. Special care should be taken in hot conditions to ensure that piglets which do not receive adequate milk do not become dehydrated. The provision of easily accessible water to prevent dehydration should be considered. We believe that there may be advantages in providing water within the fender but acknowledge the absence of scientific evidence. We therefore recommend research is undertaken to establish the water requirements of sucking piglets. Should this research demonstrate that these piglets do need water we suggest further research to develop a means to provide water within the fender.

Recommendations

128. *Research should be undertaken to establish the needs of sucking pigs for water with a view to the provision of fresh water to those piglets which are retained in farrowing huts by fenders. Should this research indicate a need for water further work should be commissioned to devise a means to provide water in the fender. We would expect that all such research should be completed within five years of this report.*

129. *An adequate water supply should be provided appropriate to the number of sows in the group and especially to farrowing sows. Good access to the water trough should be maintained.*

MUTILATIONS

130. Mutilations can cause considerable pain and therefore constitute a major welfare insult to farm animals. FAWC considers that, on ethical grounds, the mutilation of livestock is undesirable in principle. However, there are systems throughout farming where such procedures may be necessary to avoid worse problems, largely due to aggression, as the animals grow. In this study we have considered nose-ringing, tooth-clipping, tail-docking, castration and individual identification by ear notching or tagging. We are concerned about the present position regarding nose-ringing, tooth-clipping and tail-docking. We believe that without effective analgesia these will inflict pain on the pig.

131. At the outset, we wish to state that all farmers should consider carefully the necessity for performing any mutilation on pigs and we hope that as many as possible will choose to avoid these operations. However, we recognise that there will be farms on which these procedures are considered essential for the reasons set out below. If the operations are performed they must be carried out in a manner which minimises pain and distress to the animal.

132. High standards of hygiene are essential. Correct use of equipment (especially the maintenance of sterile conditions for syringes, needles and tail-docking and tooth-clipping implements), proper use of dosing guns and correct methods of tail-docking and tooth-clipping, are of great importance in the application of preventive measures against disease. These procedures, if incorrectly carried out, have the potential to cause injury (e.g. abscesses after tooth clipping, gum injuries and mouth damage) and thus prejudice the welfare of the pigs.

Nose-ringing

133. Normal exploratory behaviour by rooting cannot be expressed when sows are nose-ringed because the ring is inserted with the specific intention of it causing discomfort should the sow attempt to dig and root. Ringing in itself can result in considerable distress to the sow when the procedure is carried out, especially when wire rings are lost and have to be regularly replaced and this type of ring is particularly inappropriate.

134. It is FAWC's opinion that there is little from a welfare point of view to justify the practice of nose-ringing. Some outdoor pig-keepers consider ringing essential in order to prevent rooting and to maintain the grass sward. We have been told that many are required by tenancy agreements to nose-ring pigs. We recognise that a grass sward can be advantageous, particularly in farrowing paddocks where insulating and cooling effects are beneficial in hot weather and where ground conditions can be maintained at a better standard. It is also claimed that on some sites sows will dig deep nests within the hut, with the resultant risk of overlying of her piglets, although this can be resolved by providing and maintaining adequate bedding. However, many units do not nose-ring and claim to experience no management difficulties.

135. There is a need to assess the efficacy of nose-ringing and to establish the extent of acute and chronic pain which occurs during and after the operation. It is also necessary to establish the motivational state underlying rooting needs and the frustration caused by prevention of rooting. The trust between the animal and the stockman is likely to be significantly affected by the carrying out of this stressful operation as soon as the gilt arrives on the farm.

Tail-docking and tooth-clipping

136. The Welfare of Livestock Regulations 1994 state:

"Neither tail-docking nor tooth-clipping shall be carried out routinely but only when there is evidence, on the farm, that injuries to sows' teats or to other piglets have occurred or are likely to occur as a result of not carrying out these procedures. Where tooth-clipping appears necessary, this shall only be carried out within seven days of birth."

137. Tail-docking is undertaken if farmers consider that there is a risk of tail biting developing at the finishing stage. Thus if pigs are destined for intensive finishing it will usually be carried out. A recent survey of management and welfare in outdoor pig production systems (see paragraph 65) indicated that some 58% of units surveyed practised tail-docking. It is recommended that management practices and environmental design should be geared towards minimising the incidence of tail biting, so reducing the need for this mutilation.

138. If piglets are to have their tails docked, the law requires the operation should be carried out in the first week of life only, if it is performed by a non-veterinarian without anaesthetic. Clean equipment should be used and the procedure must be quick and sever the tail completely. The use of an antiseptic wash between pigs is recommended. Should an older piglet need to be tail-docked, it is a legal requirement that this operation must be undertaken by a veterinary surgeon using an anaesthetic.

139. Tooth-clipping is widely carried out by pig farmers (68% of outdoor pig production systems covered by the survey mentioned above) to minimise the damage to sow's teats and to the cheeks of other piglets in the litter. However, the act of tooth-clipping exposes the pulp cavity so there is a potential for poor welfare, although the extent of any problem is not fully understood at present. Thus, we believe there is a need to establish the extent of chronic and acute pain that occurs during and after the operation. We also recommend that if teeth are to be clipped at the same time as tails are docked, the equipment used should be thoroughly disinfected between each operation.

Castration

140. Castration is a mutilation which should be avoided wherever possible. However, nowadays, very few pigs in the UK are castrated compared with 25 years ago, when the industry castrated nearly all male pigs principally to avoid meat quality problems and to fulfil subsidy requirements. The industry is now able to produce good quality pigmeat, without castration, using improved techniques developed over the years which enable pigs to be slaughtered before reaching sexual maturity and, therefore, largely avoiding the possibility of the carcass being affected by "boar taint" or other perceived meat quality problems.

141. We saw no evidence of castration during our visits and we do not believe it is practised much, if at all, by the outdoor pig industry. Should market trends change and demand older pigs at higher slaughter weights, there may be a risk of the re-introduction of castration to avoid boar taint. If that occurs, it will be necessary for us to re-assess the situation as we are opposed to the re-introduction of this operation.

Animal Identification

142. Animal identification is difficult on outdoor units. Ear tattoos and tags are often difficult to read due to dirt. For this reason ear notching was often used in the past. This represents an unnecessary mutilation. The advent of electronic ear buttons is therefore welcomed on welfare grounds. The ear button provides a unique electronic identity which can be read with a hand held transponder reader and data logger. The logger has the potential to store necessary management information and to record data in the field. The development of equipment which is suitable and sufficiently robust to be used on outdoor units will facilitate better recording of individuals and as a consequence contribute to their welfare.

Recommendations

143. *We strongly advise that mutilations should not be carried out routinely but*

*only when it can be clearly demonstrated that the animals would otherwise suffer to a greater extent than as a consequence of the operation. We believe that steps should be taken to eliminate, or at least minimise, the pain caused by **all** mutilations. These points should be strongly made in the Welfare Code which should include reference to the appropriate legislation.*

144. Research should be undertaken to establish the extent of a pig's motivation to root and the effects of depriving the animal of this natural behaviour by nose-ringing. This should be completed within five years of our report.

145. Research should be undertaken into the most effective, least painful and minimally invasive methods of nose-ringing. We expect this research to be completed within five years of this report when we intend to review the evidence and consider whether to recommend to Ministers that nose-ringing of pigs be prohibited.

146. Research should be undertaken to establish whether practical methods could be developed to introduce analgesia or anaesthesia to reduce the level of short-term and long-term pain caused by teeth-clipping and tail-docking. We expect this work to be completed within five years of this report at which point we would wish to consider whether the operations should be prohibited.

147. If tooth-clipping and tail-docking are carried out at the same time, we recommend that separate equipment is used and is thoroughly disinfected between operations.

CHOICE OF BREED

Genotype

148. The breed of pig selected by the farmer must be suited to outdoor production and it is not acceptable simply to turn out sows which have spent their lives indoors should the farmer decide to convert to outdoor production. The pig should be of a hardy type, able to cope with most climatic conditions in this country, and with good mothering instincts. The breeding companies have reacted to market demands and have developed genotypes which are both hardy and which produce a carcass quality and production efficiency which compares well with pigmeat produced indoors.

Aggression

149. It is the practice in the UK to select relatively docile sows for outdoor production on the basis that they are easier to manage and have good mothering instincts. As a result, injury arising from aggression between animals is relatively rare. The large space available for avoidance and escape, together with proper management attention, also help to reduce aggression. The protective instincts of sows with strong mothering ability should be recognised as being distinct from general aggression towards other stock.

Recommendations

150. *Breeding companies, and those responsible for the selection of breeding stock*

to be kept on outdoor enterprises, must ensure that only those strains of pig with the genetic potential to thrive in the conditions provided are used.

151. When choosing pigs attention should be paid to the need for good temperament and mothering ability. New entrants to the industry should seek independent advice to ensure the correct stock is selected.

PREDATION

152. Foxes will take piglets up to a relatively large size and disturbance of the sows can also lead to increased piglet mortality. As a result, some producers have found it necessary to erect an electrified boundary fence to deter attacks. Members of the crow family (crows, rooks and magpies) can also attack young piglets.

153. Plastic flaps over hut entrances (see paragraph 53) may help reduce mortality due to predation and it may also be necessary to introduce a pest control programme.

Recommendation

154. *Where foxes are a problem effective control measures should be introduced.*

HOT AIR BALLOONS

155. Pigs can be severely distressed by an over-flying hot air balloon which can result in a group of pigs breaking fences, mixing and fighting. Consequently many farmers try to keep balloons away from their outdoor stock by informing clubs of their whereabouts and asking them to avoid over-flying the unit as far as this is possible.

156. The British Balloon and Airship Club (BBAC) has agreed a code of conduct with the NFU and depending on the level of balloon activity most areas will have a BBAC Landowner Relations Officer. The address and telephone number of this officer should be held by the local NFU Secretary. Informing balloon clubs of the farm's whereabouts also seems to be a sensible precaution.

PART IV

SUMMARY OF RECOMMENDATIONS

A. Controls by Code Provision

1. *Newcomers to outdoor pig-keeping should obtain appropriate training from experienced outdoor pig stockmen and/or from approved agricultural trainers (paragraph 37).*
2. *Those responsible for the management of the unit should ensure that the animals are cared for by sufficient, well-motivated, properly trained stockmen (paragraph 38).*
3. *Before establishing a new unit, newcomers to outdoor pig-keeping should take impartial expert advice about site suitability. We understand that this advice exists within agricultural consultancies and the industry and we look to such organisations to make appropriate expertise easily available to those concerned at reasonable cost. Pigs should not be moved onto a site which is judged to be unsuitable (paragraph 43).*
4. *When planning to move pigs onto a site it is essential that full consideration is given to site selection. This should include ensuring that the site is free-draining, has suitable topsoil, is not susceptible to flooding, has adequate access and takes advantage of natural shelter. There should also be plans for movement to follow-on sites in future years (paragraph 44).*
5. *Each site should be individually assessed and steps taken to meet the following criteria:*
 - *easy access to food and water – a site which can become badly waterlogged is unacceptable because the pigs will find it difficult to reach food and water.*
 - *a comfortable, dry lying area – by providing appropriate bedding in the shelter and, where necessary, outside. A well-drained site will keep bedding in good condition and minimise the movement of wet mud into the hut.*
 - *control of health problems attributable to the site - isolation from other pig units will reduce the risk of cross-infection. A break from pigs of six months or more where disease or parasites have been evident will reduce the risk of carry over of infection. Sites with a predominance of sharp stones, which cause injury to the feet, are inappropriate and should be avoided.*
 - *conditions to permit expression of natural behaviour – the site should provide an adequate area which the pigs choose to use (in all but extreme weather conditions) for exercise, exploration and social behaviours.*
 - *inspection, at least daily, by the stockman – site conditions and lay-out of site must allow the stockman access to inspect, feed and service the unit in all weather conditions (paragraph 46).*

6. *Areas of high rainfall should be avoided, particularly where poor drainage is also a consideration. Sites exposed to high wind and where long periods of extreme cold, frost and snow might be expected are also unsuitable (paragraph 58).*
7. *During winter months, shelters should be well-bedded and draught-free. Sheltering the doorways by siting the huts with their backs to the prevailing wind, and perhaps by the use of plastic flaps over the doorways, is necessary to minimise the possibility of bedding becoming wet through seepage or driven rain or snow (paragraph 59).*
8. *During summer months, farrowing huts should be insulated and effectively ventilated and water must be easily accessible (paragraph 60).*
9. *Shelters should be of sufficient weight, or effectively secured to the ground, to prevent movement by wind or by sows (paragraph 61).*
10. *Wallows containing a suitable, muddy material should be provided, particularly for dry sows, throughout periods of hot weather (paragraph 62).*
11. *Those responsible for the keeping of pigs outdoors should familiarise themselves with the MAFF Publication Heat Stress In Pigs - Solving the Problem (paragraph 63).*
12. *The stocking density on an outdoor unit should be such that ground conditions are satisfactorily maintained and likely to provide the conditions set out in recommendation 5. On an ideal site it is likely that this will be achieved at a maximum stocking density of about 25 sows per hectare (10 sows per acre) across the site (paragraph 68).*
13. *Stockmen should carefully monitor ground conditions in the paddock and where these prove unsatisfactory an adjustment of stocking density, or other management changes, must be introduced (paragraph 69).*
14. *We endorse the provision in the Welfare of Livestock Regulations 1994 requiring the stockman to inspect pigs thoroughly at least once a day to check they are in a state of well-being. This is a helpful legal minimum. However, we recommend the Welfare Code requires inspection of farrowing sows and piglets at least twice daily (paragraph 88).*
15. *Where sows at the time of farrowing are found to be in difficulty, immediate and effective action must be taken and, where necessary, veterinary advice should be obtained. This is already a requirement of the Welfare of Livestock Regulations 1994 and could usefully be reflected in the Welfare Code which is often more accessible to farmers than the legislation (paragraph 89).*
16. *We recommend the provision of isolation and acclimatisation facilities for replacement breeding stock (paragraph 90).*
17. *We recommend that adequate facilities should be provided to enable pigs to be trained to electric fences and that such fences should be checked at least daily (paragraph 91).*

18. *Where weaner or finishing pigs are kept in outdoor systems, adequate provision should be made to protect pigs from extremes of weather (paragraph 92).*
19. *No pig should be weaned at less than three weeks of age unless there is a justifiable unexpected reason e.g. "the welfare or health of the dam or piglets would otherwise be adversely affected" (paragraph 93).*
20. *We recommend that each herd should have a written health and welfare programme produced, where necessary, with veterinary advice setting out health and husbandry activities concerning the whole of the cycle of production. This should help to ensure that routine prophylactic measures are given at the correct time, at the correct dose and to the appropriate animals. This programme should be reviewed and updated annually (paragraph 104).*
21. *The health of a pig farmed outdoors should not be compromised and if signs of disease or injury are noticed, immediate effective treatment must be given (paragraph 105).*
22. *Handling facilities should be available which effectively enable the inspection and, where necessary, treatment of sows and boars (paragraph 107).*
23. *We encourage the use of individual housing systems for boars and supervised services. Attention should be given to avoid excessive mating activity between boars and sows (paragraph 109).*
24. *Appropriate treatment for lame animals must be given as soon as is practicable (paragraph 110).*
25. *Those responsible for the keeping of pigs outdoors should familiarise themselves with the MAFF booklet Lameness in Pigs (paragraph 111).*
26. *All pigs must be fed daily a wholesome, appropriate diet to maintain them in good health and to promote a positive state of well-being (paragraph 118).*
27. *The pig-keeper should ensure that food is properly stored to keep it in a good wholesome condition and in a location to ensure sufficient quantities to cater for emergencies (e.g. disruption of supply due to adverse weather) (paragraph 119).*
28. *Food should be distributed widely and evenly to avoid aggression between animals or an alternative method to ensure even consumption should be used (paragraph 120).*
29. *The feed intake should be adjusted to take account of the effect different weather conditions have on the body condition of the pigs in the group e.g. extra food should be provided in cold weather (paragraph 121).*
30. *An adequate water supply should be provided appropriate to the number of sows in the group and especially to farrowing sows. Good access to the water trough should be maintained (paragraph 129).*
31. *We strongly advise that mutilations should not be carried out routinely but only when it can be clearly demonstrated that the animals would otherwise suffer to a*

greater extent than as a consequence of the operation. We believe that steps should be taken to eliminate, or at least minimise, the pain caused by all mutilations. This point should be strongly made in the Welfare Code which should include reference to the appropriate legislation (paragraph 143).

32. If tooth-clipping and tail-docking are carried out at the same time, we recommend that separate equipment is used and is thoroughly disinfected between operations (paragraph 147).

33. Breeding companies, and those responsible for the selection of breeding stock to be kept on outdoor enterprises, must ensure that only those strains of pig with the genetic potential to thrive in the conditions provided are used (paragraph 150).

34. When choosing pigs attention should be paid to the need for good temperament and mothering ability. New entrants to the industry should seek independent advice to ensure the correct stock is selected (paragraph 151).

35. Where foxes are a problem effective control measures should be introduced (paragraph 154).

B. General Recommendations

36. The industry should take steps to ensure training is validated (paragraph 39).

37. The industry should consider the development of computer models to assist with the selection of a suitable site for outdoor pig-keeping (paragraph 45).

38. We recommend that the set-aside rules are modified in regard to their effect on tenant outdoor pig farmers and urge the Government to open discussions with the European Commission on this point (paragraph 70).

39. We recommend that research is commissioned to establish the age at which pigs are nutritionally, immununologically and psychologically best suited to weaning (paragraph 94).

40. Research should be carried out to ascertain the optimum size and design of farrowing huts, including the benefits of insulation, ventilation and ease of management by stockmen (paragraph 95).

41. We endorse the Welfare of Livestock Regulations 1994 requirement which states that "sick or injured pigs shall, where necessary, be isolated in suitable accommodation with dry, comfortable bedding" (paragraph 106).

42. We recommend that the Government commissions research regarding the re-introduction of boars back into social groups after removal for treatment. Such research should lead to clear practical advice on whether, and if so in what way, boars should be re-introduced to paddocks after treatment (paragraph 108).

43. We recommend that research is undertaken to discover the causes of stone-chewing in outdoor pig herds (paragraph 112).

44. *Research should be undertaken to establish the nutritional requirements of young pigs on outdoor units with specific reference to the implications of their not receiving supplementary feed prior to weaning (paragraph 122).*

45. *Research should be undertaken to establish the needs of sucking pigs for water with a view to the provision of fresh water to those piglets which are retained in farrowing huts by fenders. Should this research indicate a need for water further work should be commissioned to devise a means to provide water in the fender. We would expect that all such research should be completed within five years of this report (paragraph 128).*

46. *Research should be undertaken to establish the extent of a pig's motivation to root and the effects of depriving the animal of this natural behaviour by nose-ringing (paragraph 144).*

47. *Research should be undertaken into the most effective, least painful and minimally invasive methods of nose-ringing. We expect this research to be completed within five years of this report when we intend to review the evidence and consider whether to recommend to Ministers that nose-ringing of pigs be prohibited (paragraph 145).*

48. *Research should be undertaken to establish whether practical methods could be developed to introduce analgesia or anaesthesia to reduce the level of short-term and long-term pain caused by teeth-clipping and tail-docking. We expect this work to be completed within five years of this report at which point we would wish to consider whether the operations should be prohibited (paragraph 146).*

APPENDIX A

MEMBERSHIP OF THE FARM ANIMAL WELFARE COUNCIL

Professor Sir Colin R W Spedding CBE – Chairman
Dr M R Baxter
Mr G Berry
Dr W J M Black MBE
Professor D M Broom
Mr J A R Dewhirst
Mr T C Harris
Mrs F F Hodgson
Mr C Hollands OBE
Mr A R Lucas
Mrs J A MacArthur Clark
Mr R Macpherson
Miss C A Milburn
Dr M Pattison
Mr F E Shields MBE
Mr P F Staines MBE
Mr J G Thomas
Mrs J M Turnbull
Mr A Watkins
Dr A C Winter

Mr C B Atkinson, Revd. A L Birbeck and Mrs T M Wickham stood down in 1995

APPENDIX B

THOSE WHO GAVE EVIDENCE AND ASSISTANCE

Bibby Agriculture Ltd
Bicton Agricultural College
BOCM Pauls Ltd
British Pig Association
British Retail Consortium
British Society of Animal Science
Cambac JMA Research
Compassion in World Farming
Cotswold Pigs Development Company
Daisy Hill Pigs Ltd
Dalgety Agriculture
Department of Agriculture, State of Missouri
Farm and Food Society
Grampian Country Food Group
Greenhill Pigs
Institute for Animal Health
Larkmead Veterinary Group
Livestock Auctioneers Association
Ministry of Agriculture, Fisheries and Food
National Farmers' Union
National Pig Development Company
New Forest Commoners Defence Association
Newsham Hybrid Pigs Ltd
Peninsular Pigs (Sales) Ltd
Pig Improvement Company
Pig Veterinary Society
Rare Breeds Survival Trust
Royal College of Veterinary Surgeons
Royal Society for the Prevention of Cruelty to Animals
Royal Veterinary College
Sandbridge Farm House Bacon
Scottish Agricultural College
Scottish Pig Industry Initiative
Scottish Society for the Prevention of Cruelty to Animals
Thames Valley Pigs Ltd
Universities Federation for Animal Welfare
University of Aberdeen
University of Bristol
University of Cambridge
University of Leeds
University of Oxford
University of Plymouth
Verderers of the New Forest

and the farmers, stockmen and veterinarians who members of the working group met during visits.

APPENDIX C

SITE SUITABILITY FOR OUTDOOR PIGS

1.0 SELECTING A SUITABLE SITE

The physical and climatic conditions of a particular site are critical in determining whether it is suitable for outdoor pigs. However, the management of the site is also important, as marginal sites require a higher standard of management in order for them to be acceptable.

The main criterion in selecting a site must be to avoid waterlogged conditions. The main factors that effect this are as follows:

1.1. Physical factors

1.1.1 Soil type

A light, free-draining soil is ideal. Generally these will have a high content of sand, or possibly silt, but a low content of clay. Soils have varying proportions of these three ingredients so it is impossible to draw a fine line between suitable and unsuitable soils.

1.1.2 Drainage

The underlying structure of the soil is also important. Free-draining subsoils such as gravel, chalk and limestone will allow topsoils to dry out more quickly and reduce the time spent waterlogged. Therefore a marginal soil type could be more suitable if the subsoil is free-draining.

1.1.3 Rainfall

Ideally an outdoor pig unit should be sited in a low rainfall area to avoid waterlogging of soils. However, there is an important interaction with soil types. A marginal soil type will be more suitable in an area of low rainfall than where the rainfall is higher.

1.1.4 Topography

Although this factor does not directly affect waterlogging, it is still an important consideration. Sloping fields can be an aid to drainage, but should be avoided for farrowing paddocks. On slopes, bedding and piglets can roll in the hut increasing the risk of overlying. Also, natural shelter is important especially in areas with a high risk of wind chill. The location of the site should take into account the risk of any natural hazards. In particular, sites susceptible to flooding should be avoided because it can take a considerable time to move pigs to safety.

1.2. Management factors

1.2.1 Ground cover

This has a very significant effect on the waterlogging properties of a soil. A good, well-established grass sward provides additional drainage and protects the soil from damage when it is waterlogged. Good ground cover

can offer behavioural benefits, possibly through its insulation and therapeutic properties. Any nutritional value to pigs from eating grass or other ground cover is negligible.

1.2.2 Stocking Density

This is the factor over which the stockman has most control. Relatively high stocking rates are possible on the lighter, free-draining soils in the low rainfall areas. They need to be reduced on less suitable sites to avoid poaching damage to waterlogged soils. The practical maximum stocking density will depend on all the physical and management factors discussed in this section.

1.2.3 Paddock management

By rotating paddocks, being flexible with systems and allowing wetter areas to rest, less suitable sites can be managed to reduce the effect of poaching waterlogged soils.

2.0 PROBLEMS CAUSED BY AN UNSUITABLE SITE

Waterlogging and poaching are the main problems associated with unsuitable sites.

2.1 Access to paddocks

In many cases this affects the stockman rather than the pigs directly. In particular, restricted access with tractors along roadways can cause delays in providing feed, water and straw to paddocks and also affect the movement of pigs between paddocks. Extra time spent carrying out these routines prevents stockmen carrying out other duties related to looking after the stock, such as observation, medication etc.

2.2 Access within the paddocks

Waterlogging within the paddocks makes movement of both stockmen and pigs difficult. This restricts access to feeding areas, water troughs and the huts.

2.3 Feeding areas

Wet, muddy areas should be avoided as the food will get trampled in and be wasted. As a result, all pigs in a group may not have their appropriate ration.

2.4 Wet beds in huts

A dry, strawed lying area is essential for all pigs. Wet conditions in the paddocks allow mud to be trampled into the huts, thus wetting the beds. This can be minimised in wet weather by using a "doormat" of straw in front of the hut. Young piglets are especially at risk from chilling if their beds are wet.

2.5 Health

Continuous wet conditions can cause foot problems in sows and increase the risk of chilling of piglets. This can itself increase the incidence of diseases.

3.0 SUGGESTED ASSESSMENT OF THE SUITABILITY OR UNSUITABILITY OF A SITE

In order to assess the welfare implications of a site for outdoor pigs, the "five freedoms" should be considered. Because the management factors are so important, the physical characteristics alone are not sufficient to determine the suitability of the site. Each site should be individually assessed and judged on the following basis:

- A dry area for the distribution of feed.
- A dry, comfortable lying area in the huts.
- The ability of pigs to move freely between huts, water and feeding area, without having to go into the waterlogged areas.
- The ability of a stockman to be able to get feed, water and straw to the paddocks, to move pigs as required and carry out stockmanship tasks.
- Absence of health problems attributable to the conditions of the site.

These conditions will most easily be provided on a light, free-draining soil in a low rainfall area. However, good management and stockmanship are essential to ensure that these criteria are met and that the welfare of the pigs is not at risk.

FARM ANIMAL WELFARE COUNCIL: REPORT ON THE WELFARE OF OUTDOOR PIGS

This report makes recommendations to Agriculture Ministers about the welfare of pigs kept outdoors. It considers all aspects of the pigs' welfare, paying particular attention to stockmanship, good management, site selection and the right choice of stock. The Council suggests changes to the "Code of recommendations for the welfare of livestock : pigs" and calls for research on specific items.

