

STANDING COMMITTEE OF THE EUROPEAN CONVENTION FOR THE PROTECTION OF ANIMALS KEPT FOR FARMING PURPOSES (T-AP)

RECOMMENDATION CONCERNING RATITES
(Ostriches, Emus and Rheas)

adopted by the Standing Committee on 22 April 1997
(In accordance with Article 9 of the Convention, the Recommendation will enter into force on 22 October 1997)

Table of Contents

PREAMBLE

GENERAL PROVISIONS

BIOLOGICAL CHARACTERISTICS OF RATITES

STOCKMANSHIP AND INSPECTION OF RATITES

ENCLOSURES, BUILDINGS AND EQUIPMENT

MANAGEMENT

CHANGES IN PHENOTYPE OR GENOTYPE

KILLING

SUPPLEMENTARY PROVISION

APPENDIX 1: TOPICS TO BE INCLUDED IN THE TRAINING OF RATITES FARMERS

APPENDIX 2: TECHNICAL DETAILS FOR THE CATCHING AND HANDLING OF RATITES

APPENDIX 3: OSTRICHES

APPENDIX 4: EMUS

APPENDIX 5: RHEAS

APPENDIX 6: GUIDELINES FOR BEDDING AND FODDER CHOP

PREAMBLE

The Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes,

Having regard to its responsibilities under Article 9 of the Convention for the elaboration and adoption of Recommendations to the Parties containing detailed provisions for the implementation of the principles set out in Chapter I of the Convention based on scientific knowledge concerning the various species of animals;

Aware also of the established experience in the implementation of the principles of animal welfare set out in Articles 3 to 7 of the Convention;

Considering that ratite farming should not be undertaken lightly and that anyone farming them has to be certain that they are able and willing to devote the finance and time needed to ensure the birds' health and welfare;

Considering the current high morbidity and mortality in many ratites sites compared with domesticated farm animal species and considering the fact that ratites, as not domesticated but still principally wild animals, are extremely susceptible to stress, prevention of stress in the animals by fulfilling their natural health and behaviour requirements is of the utmost importance;

Aware that the basic requirements for the health and welfare of livestock consist of good stockmanship, husbandry systems appropriate to the biological needs of the animals, and suitable environmental factors, so that the conditions under which ratites are kept fulfil the need for appropriate nutrition and methods of feeding, freedom of movement, physical comfort, the need to perform normal behaviour and the need for protection against adverse climatic conditions, attack by predators, injury, infestation and disease or behavioural disorder, as well as other essential needs as may be identified by established experience or scientific knowledge;

Concerned by the fact that the scientific knowledge and practical experience of keeping ratites under European conditions are limited and that therefore there is a great risk that producers attempt to introduce husbandry methods which are not suitable for the health and welfare of ratites;

Bearing in mind that the environment and management have to fulfil the animal's biological needs rather than trying to "adapt" the animals to the environment by procedures such as mutilations;

Considering that further research on the welfare and health of ratites should be encouraged and that relevant provisions in the Recommendation

shall be reviewed in the light of new scientific evidence;

Has adopted the following Recommendation concerning ratites.

GENERAL PROVISIONS

Article 1

1. This Recommendation applies to all ratites of the species ostrich, emu and common rhea bred or kept for the production of food, skin, feathers or other farming purposes.
2. Special provisions contained in Appendices to this Recommendation constitute an integral part thereof.

Article 2

1. No ratite taken from the wild shall be kept for farming purposes.
2. Nothing in this Recommendation shall affect the implementation of other instruments for the protection of animals or for the conservation of wild species.
3. No ratites of any species shall be kept for farming purposes if:
 - a. the conditions of this Recommendation cannot be met, or if
 - b. the animal belongs to a species whose members, despite these conditions being met, cannot adapt to captivity without welfare problem.

BIOLOGICAL CHARACTERISTICS OF RATITES

(*Struthio camelus*, *Rhea americana* and *Dromaius novaehollandiae*)

Article 3

1. When considering husbandry practices it should be borne in mind that some important biological characteristics of ratites are as follows:
2. Ratites are large, long necked, terrestrial birds with powerful legs adapted for running.

Male **ostriches** may grow to a height of more than 2 metres and females to about 2 metres and weigh up to 160 kg and 110 kg respectively. Under natural conditions, ostriches will daily range over an area of an average radius of up to 20 km in search of food.

Emus and **rheas** are smaller, reaching heights of up to 1.9 metres and 1.5 metres and weights of 55 kg and 40 kg respectively.

In ratites defence against predators depends on high vigilance based on acute vision and avoidance behaviour, including running away at high speeds.

Ostriches run at up to 70 kph and **rheas** are able to turn at right angles to alter course suddenly.

Under natural conditions, **ostriches** may reach ages of more than 50 years.

3. In the wild ratites are typically gregarious animals and their groups have a complex social structure. Group size depends on the natural resources available and the breeding status. Both males and females demonstrate considerable aggression. In the breeding season, a monogamous bond is formed, the larger female being dominant. A large territory is defended during laying.

Breeding groups of **ostriches** usually consist of one territorial male to 2 to 4 hens, one being the major hen. Construction of the nest, incubation of eggs and rearing the young is shared between the major hen and the male.

Rheas may congregate in mixed flocks, breaking up in the breeding season when males become generally solitary, females form small cohesive groups and yearlings remain as a flock.

Emus in the wild may be found alone, in pairs or in small groups.

In **emus** and **rheas**, the male alone incubates and rears the chicks.

During the breeding season ratites, especially males, usually become protective and may become aggressive. Chicks are precocious and leave the nest within a few days.

They are accompanied and protected by an adult, in **ostriches** for up to 9 months, and in **emu**, possibly for up to even 18 months.

4. Imprinting on, and habituation to, humans is possible and, in general, ratites are inquisitive and will respond to human contact. However, they remain animals which could be dangerous to man.

5. Ratites are mainly herbivorous, occasionally supplementing their diet with insects and small vertebrates. Ratites need a certain amount of grit (small stones) to aid digestion of coarse material. They readily swallow all

kinds of foreign bodies.

6. **Ostriches** and **emus** lack a preen gland and so do not have the ability to oil their feathers to provide a waterproof plumage.

7. Ratites are diurnal. Activity is mostly divided among feeding, walking, running, standing alert, preening and dust bathing.

Ostriches will bathe and **emus** and **rheas** will bathe and swim in water if it is provided.

STOCKMANSHIP AND INSPECTION OF RATITES

Article 4

1. Those who handle ratites must be familiar with their behaviour and be competent in their handling and management. They must be aware of the signs of disease or stress. This competence shall be assessed by a body in accordance with national legislation.

2. Prior to birds' arrival on a newly established farm a substantial period of training including practical experience is necessary for those who will handle ratites. Training shall include items listed in Appendix 1. Continued training is considered essential.

3. The possibility of official authorisation should be considered prior to setting up a farm for ratites.

Article 5

1. It is essential for the stockman to have close contact with ratites, particularly when the birds are young, to train them to respond to a distinctive call or inducement such as feed; and to continue this practice throughout their lives.

2. Before discarding any eggs, care should be taken to ensure that they do not contain any living embryos. If hatched artificially and without an adult ostrich or other bird being present, young chicks will congregate and remain inactive and may develop leg problems and problems of feeding behaviour. They shall therefore be encouraged to move around and be given specific care. Chicks are stimulated by an enriched environment. Those looking after young chicks shall visit them as frequently as possible each day and shall spend a significant amount of time with them to encourage them to feed, exercise and play.

3. As filial imprinting by chicks is important, careful consideration must be given as to how to give the chicks a suitable "parent figure" within the two days following hatching. If the chick worker is to fulfil this role, it should be

observed that she or he has to be with the chicks for nearly the entire day as separation from the parent figure causes considerable distress to the chicks. Moreover, the replacement of this person by an adult bird in due time should be considered in order to avoid sexual imprinting.

Article 6

1. Manual restraint is potentially dangerous to both handler and birds as ratites tend to react very quickly when frightened, frequently jumping and flailing with their strong legs. The wings and in particular the toenails can inflict serious injury on the handler or bird. Catching, handling and movement of ratites require special skills, in particular as stress due to capture and restraint has been implicated as a significant cause of fatalities. They should be handled gently and never rushed, taking advantage of the fact that they are better handled in subdued light. Hitting and prodding the birds shall be prohibited, including the use of an electrical baton. Technical details are presented in Appendix 2.

2. Chemical restraint shall not be used as a matter of routine to capture ratites. Due to the potential dangers of injury during recovery, chemical restraint should only be used as a last resort and always under veterinary supervision.

Article 7

Ratites kept for farming purposes shall not be used to achieve any other goal, including public spectacles or demonstrations, in particular ostriches shall not be ridden or raced.

Article 8

1. Ratites must be thoroughly inspected at least twice each day. Sick or injured birds must be segregated, when appropriate. At night a source of light strong enough for each bird to be seen clearly shall be available for the purpose of this inspection. If the birds are apparently not in good health, have difficulty in feeding or drinking or show signs of abnormal behaviour such as feather-pecking or stereotyped pacing, the stockman must take immediate steps to establish the cause and take immediate remedial action. If the remedial action taken by the stockman is not effective, a veterinarian or other expert must be consulted.

2. Pens and enclosures shall be inspected initially before the birds are admitted and cleared of any foreign objects which could be swallowed. Thereafter pens and enclosures shall be checked daily.

3. During the breeding season, the birds shall be disturbed as little as possible and they shall where possible be attended only by the stockman

known to them.

4. Mature birds shall be treated with caution at all times in order to avoid stress to the animals and panic reactions which could become dangerous for both animals and stockmen.

ENCLOSURES, BUILDINGS AND EQUIPMENT

Article 9

1. Farms shall be situated only in areas where climatic and other conditions allow birds to be kept outside most of the daytime in any season and where large areas of well-drained land can offer enough space for their need for exercise and grazing.

2. When accommodation for ratites is being considered all external environmental factors, such as noise, light, vibration, atmospheric conditions, pollution and risks such as fire and flood should be taken into account. Paddocks shall be established only on well drained soil and shall give access to shelters.

Article 10

1. Suitable, properly constructed handling facilities must be provided and specialised equipment must be used, in particular as fast flight is the natural ratite reaction in all fearful situations.

2. Suitably designed and constructed loading facilities and vehicles must be available. In particular, vehicle ramps shall allow birds to be loaded and unloaded without force.

Article 11

1. There must be a fence or other adequate barrier to prevent the escape of the birds from the farm and to make it difficult for unauthorised persons and predators to enter.

2. Fences shall be designed and constructed to prevent birds from becoming trapped in them or being injured. If mesh fences are used the mesh size must be such as to prevent the birds' heads and legs being caught. Fences shall be strong enough but elastic enough to withstand a bird's collision with them without causing injury. Fences must be highly visible to the birds to avoid collisions with fences when running fast. Adjacent paddocks for adult animals must be separated by a system which prevents aggressive interactions between birds, for example double fences with enough distance between them, simple fences with wind-breaker or natural hedge. Barbed wire must not be used. The use of electric fencing

shall be discouraged.

3. Warning notices about the danger to birds of disturbance or of objects thrown into the enclosure and the danger to people who might enter the enclosure shall be placed in prominent places outside the enclosures.

Article 12

1. When young or segregated birds have to be housed for longer periods, additional space shall be provided to fully meet the exercise needs of the birds.

2. There shall be sufficient trough space or feeding and water points to allow all animals to eat at the same time and designed so as to avoid undue competition for food, especially when it is rationed.

3. Housing shall be dry, well ventilated and draught free. Heating devices must be available when necessary to safeguard the animal's health and welfare.

4. Pens must have natural light and be equipped with additional artificial lighting where birds are temporarily confined indoors as ratites must have a light regime equivalent to 10 to 12 hours of daylight conditions. Additional artificial light systems designed so as to imitate natural light must be constructed so as not to cause health risks.

5. Floors of enclosures must be easy to clean and non-slippery, and preferably be solid. For young chicks insulated or heated flooring may be necessary.

6. All electrical installations at mains voltage shall be inaccessible to the ratites, well-insulated, safeguarded from rodents.

7. Pens shall be designed so that contact between breeding groups during the breeding period does not cause unnecessary stress.

Article 13

1. Paddocks shall have adequate space and cover to allow individuals to escape the unwelcome attentions of other birds, should be designed so as to prevent physical contact between different breeding groups and shall ensure that contact between birds does not cause unnecessary stress. A visual barrier between paddocks containing different breeding groups is recommended.

2. The paddock shall have a long side so the birds are able to run and no side shall be too short so as to cause risk of injuries for birds running at high speed. Acute angles between two sides must be avoided so as to

prevent subordinate animals becoming trapped.

3. A freely accessible shelter or pen must be provided to protect the birds from adverse weather conditions in particular rain, snow and sunlight.

4. Emus shall be provided with water for bathing, other than young chicks, which may drown even in shallow water.

5. In the case of natural breeding, provision must be made for suitable nesting areas.

MANAGEMENT

Article 14

1. In the management routine, it must be kept in mind that ratites are principally wild animals. Ratites of all ages can become stressed by changes in routine and, when unnecessary, these should be avoided.

2. a. Stock chosen for breeding must be fit, healthy and show no physical or behavioural abnormality.

b. Ratites are very sensitive to sound. Constant noise, even at low levels, must therefore be avoided and animals should be protected against sudden noise.

3. Ratites shall not be permanently housed.

4. Unless this is totally prevented by exceptional adverse weather conditions, ratites older than three months shall be given access to outside areas each day. However, if the animals are kept indoors, this period shall be as short as possible and never last more than 10 days per month.

5. Ratites shall be provided with dust bathing facilities.

6. To promote a normal behavioural and physical development, chicks older than 3 days must be encouraged to exercise outside at least four times each day for increasing periods of time. Under adverse weather conditions, this exercise shall be taken inside. For protection against climatic conditions the ratites shall be trained to utilize the shelters or houses during adverse weather conditions. Birds should be prevented from becoming excessively wet.

7. In order to provide young birds with as natural an environment as possible and early access to outside areas, hatching during the winter should be avoided.

8. Ratites must not be kept individually except for very aggressive birds or,

when necessary, sick, injured or bullied birds. When kept individually birds must have sight and sound of other birds except when veterinary advice decrees otherwise.

9. Considering the distress for the animals and the risk of suffering, special care shall be taken when ratites are transported and transport shall be minimised as far as possible; therefore the slaughter of ratites on farms should be considered.

Article 15

1. Enough space must be given each animal and group of animals. Overstocking increases the risk of abnormal behaviour such as excessive fighting, feather-pecking and of stress-related diseases.

2. The group size shall be decided depending on the age and sex of the animals and taking the available area into consideration.

3. If more than one breeding group is kept in a single area, sufficient extra space, cover and the possibility to separate groups in the case of severe fighting are especially important.

Article 16

1. The use of bedding is recommended for maintenance of the plumage and enrichment of the environment. Bedding must be maintained in a dry and friable state. The bedding must be a layer of absorbent material not attractive for the birds to eat, such as sand, sawdust or cut straw. For young chicks kept without their parents and before the age of three weeks, bedding shall not be used. After 3 weeks of age, bedding can be introduced gradually.

Indoor areas and small paddocks shall be cleaned regularly and droppings and feed waste removed daily.

2. If outside areas are icy, they shall be sanded to allow the animals to be given access to them.

Article 17

1. Adult ostriches shall have access to natural grazing. During the season of the year where grass is not available, they shall be provided with forage.

2. All birds must have appropriate access to adequate, nutritious, balanced and hygienic feed each day and to adequate supplies of water of suitable quality at all times. Ratites must have access to roughage from an early age. Guidelines for

size of feed structures are given in Appendix 6.

Chicks younger than three months should have continuous access to feed. Green food shall be offered at an early age.

When compound feed is given, care should be taken to ensure that it is safe and of the appropriate composition for ratites. In particular, care is needed in the diet formulation for young birds to avoid growth rates which may lead to joint or skeletal abnormalities. Mineral and other supplements should be provided as appropriate.

3. As sudden changes in the type of diet may cause digestive problems such as impaction and even death, such changes should be introduced gradually.

4. Methods of feeding and feed additives which cause injury or distress to the birds shall not be permitted.

5. Ratites must be allowed access at all times to suitable grit or stones to aid digestion. However, for the first weeks, chicks shall only be provided with grit in limited quantities.

Article 18

Care should be taken to maintain a stable social structure within a group. New birds brought to the farm should be left in their new surroundings for a few days with the minimum of disturbance. They shall be checked to ensure that they are healthy and free from infection or contagious diseases and infestations before being introduced to new groups.

Article 19

If ratites are ill or injured to such an extent that transport would cause considerable additional suffering, they must be treated or killed on the spot. Where ratites have to be killed, this must be done without delay and in accordance with Article 23.

Article 20

Each Contracting Party shall set figures for fences, dimensions of shelters, paddocks and enclosures area and group size based on the guidelines presented in the Appendices.

CHANGES IN PHENOTYPE OR GENOTYPE

Article 21

1. For the purpose of this Recommendation, "mutilation" means a

procedure carried out for other than therapeutic purposes and resulting in damage to or the loss of a sensitive part of the body or the alteration of bone structure, or causing a significant amount of pain or distress.

2. Mutilation and other surgical procedures must not be performed except in circumstances of veterinary need and then only by a veterinarian or under his supervision when permitted by national legislation.

3. Feathers must not be plucked from a living bird.

4. Feathers must only be clipped above the blood line.

5. Insertion of electronic devices for identification purposes is allowed.

Article 22

1. Breeding or breeding programmes which cause or are likely to cause suffering or harm to any of the birds involved shall not be practised. In particular, birds whose genotype has been modified for production purposes shall not be kept under commercial farm conditions unless it has been demonstrated by scientific studies of animal welfare that the birds can be kept under such conditions without detriment to their health or welfare.

2. In breeding programmes, particular attention shall be paid to criteria conducive to the improvement of birds' welfare and health, as well as to production criteria. Therefore, the conservation or development of breeds or strains of animals which would limit or reduce animal welfare problems shall be encouraged.

KILLING

Article 23

1. Killing must be done without causing undue pain, agitation or other forms of distress and by a person experienced in the techniques of killing unless in emergency when such a person is not immediately available.

2. The methods used shall either:

a. cause immediate loss of consciousness and death, or

b. rapidly render the animal insensible to pain and distress, until death supervenes, or

c. cause the death of an animal which is anaesthetized or effectively stunned.

Drowning and suffocation shall not be permitted.

3. The person responsible for the killing shall ensure that for each bird the requirements of paragraph 2 are fulfilled and that the animal is dead.

SUPPLEMENTARY PROVISION

Article 24

This Recommendation shall be reviewed within 5 years after coming into force.

APPENDIX 1: TOPICS TO BE INCLUDED IN THE TRAINING

OF RATITES FARMERS

General biology and behaviour
 Capture and handling
 General management procedures
 Health controls
 Signs of disease
 Signs of stress and distress

In addition stock keepers should know details of other items, many of which are set out in these recommendations as generalities

Biological characteristics - Zoology
 Nutritional and feeding requirements inc. stones (gravel) and grit (calcium source for laying birds)
 Exercise requirements
 Reproductive behaviour including egg handling, storage, incubation, hatching and rearing of young chicks (to 12 weeks)
 Space allowances for pens and enclosures
 Housing, environmental needs including shelter, and "hiding" places to avoid bullying or unwanted sexual overtures
 Fencing design and construction
 Catching and handling of birds of all ages
 Loading and unloading into vehicles
 Handling, nursing and treatment of sick birds including giving medicines by mouth or injection
 Hygiene and disinfection methods
 Dust and water bathing needs and means of provision
 Selection of breeding stock
 Record keeping
 Methods of emergency killing
 Animal health and welfare legislation including transport and slaughter

APPENDIX 2: TECHNICAL DETAILS FOR THE CATCHING AND HANDLING OF RATITES

The preferred method of lifting young chicks (from 0 to about 10 weeks) is with one hand under the body, gathering the legs with the other hand to stop kicking. When older and larger, the bird can be restrained by standing astride it, holding its body with handler's legs placed behind the wings, and with hands around the chest or base of neck area. Ratites must not be restrained by the legs, the feathers or a single wing as this can cause dislocation. It is recommended that at least three people are in attendance to restrain an adult animal.

In general, guidance and approach should be from behind. However, when a shepherd's crook is used in selecting a mature bird from a group, this should be done from the front. The crook should be used to hook the bird around the neck just below the head, and to pull its head down to below back level. The bird can then be restrained by placing the thumb of one hand in the side of beak while holding the back of the bird's head low with the other hand. This will prevent the bird kicking forward.

When catching and holding birds by the neck, great care must be taken to avoid damaging the neck, and, in particular, the bird should be prevented from moving backwards. The wings and tail can be used to guide the bird but care must be taken never to use a single wing. Birds must never be restrained by their legs. After catching, hooding is recommended, taking care not to obstruct the nostrils. Hoods shall not be left on for longer than is absolutely necessary.

Care should be taken when releasing birds to protect them from aggressive behaviour and injury from conspecifics.

APPENDIX 3: OSTRICHES

General provisions:

The height to the ceiling in buildings or shelters should for adult animals be not less than 3 meters.

The width of the door to the building or opening to the shelter shall be sufficient for all birds to enter or exit at the same time. The aperture shall be no less than 1.5 m.

A shelter should be closed on 3 sides and include a closing system on the fourth side, allowing the male to be isolated.

The fences should have a minimum height of 1,60 m for young ostriches (4-5 months) and 2 m for adults, with mesh fences on a minimum height

of 1,50 m, with a post at least every 4 m.

For all ostriches older than 5 days grit should be available. The provision of grit, especially in young animals should be done with care to prevent grit impaction. Sizes should be carefully considered and should be half to full size of the animal's toe-nail.

Guidelines for maximum figures for group size and minimum figures for space

d= days; w= weeks; m= months; m²= square meters;

Age	Maximum birds/Group	Buildings/Shelters		Paddocks	
		Min. area/ bird	m ² total area/ pen	Minimum m ² area/ bird(s)	Minimum m ² total area/ paddock
< 4 d	40	0,25	1		
4 d - 3 w	40	0,25 - 1,2	5	10	100
3 w - 6 m	40 ¹⁾	2 - 10	15	10 - 40	100-1000 ³⁾ ^{4) 7)}
6 - 12 m		10	30	800/3	1000 ^{3) 4)}
1 y- breeding age		10	30	1000/3	1000 ^{3) 5)}
adult birds	²⁾	10	30	2000/3 ⁶⁾	1000 ^{3) 5)}

¹⁾ This group size presupposes no differences in sizes between the animals

²⁾ If more than one breeding group is penned in a single area, sufficient extra space, cover and the possibility to separate groups in the case of severe fighting are especially important.

³⁾ The shortest side should not be less than 10 m.

⁴⁾ One side should be at least 50 m.

⁵⁾ One side should be at least 100 m.

⁶⁾ For each additional female 200 m² shall be added, for each additional male 800 m².

⁷⁾ This should be interpreted according to the age of the bird.

APPENDIX 4: EMUS

General provisions:

The height to the ceiling in buildings or shelters should for adult animals be

not less than 2,5 meters.

The width of the door to the building or opening to the shelter shall be sufficient for all birds to enter or exit at the same time. The aperture shall be no less than 1.5 m.

A shelter should be closed on 3 sides and include a closing system on the fourth side, allowing the male to be isolated.

The fences should have a minimum height of 1,60 m for young emus (4-5 months) and 180 cm for adults.

For all emus older than 5 days grit should be available. The provision of grit, especially in young animals should be done with care to prevent grit impaction. Sizes should be carefully considered and should be half to full size of the animal's toe-nail.

Guidelines for maximum figures for group size and minimum figures for space

d= days; w= weeks; m= months; m²= square meters;

Age	Maximum birds/Group	Buildings/Shelters		Paddocks	
		Min. area/ bird	m ² total pen	Minimum area/ m ² bird	Minimum m ² total area/ paddock
< 4 d	40	0,25	1		
4 d - 3 w	40	0,25 0,5	- 5	5	75
3 w - 6 m	40 ¹⁾	1	10	20	100-500 ³⁾ _{5) 7)}
6 - 12 m		2	20	150	500 ^{4) 5)}
1 y- breeding age		3 - 4	20	200	500 ^{4) 6)}
adult birds	1 + 1 ²⁾	5	30	250	500 ^{4) 6)}

¹⁾ This group size presupposes no differences in sizes between the animals

²⁾ If more than one breeding group is penned in a single area, sufficient extra space, cover and the possibility to separate groups in the case of severe fighting are especially important.

³⁾ The shortest side should not be less than 6 m.

⁴⁾ The shortest side should not be less than 7 m.

- 5) One side should be at least 50 m.
 6) One side should be at least 70 m.
 7) This should be interpreted according to the age of the bird.

APPENDIX 5: RHEAS

General provisions:

The height to the ceiling in buildings or shelters should for adult animals be not less than 2,5 meters.

The width of the door to the building or opening to the shelter shall be sufficient for all birds to enter or exit at the same time. The aperture shall be no less than 1.5 m.

A shelter should be closed on 3 sides and include a closing system on the fourth side, allowing the male to be isolated.

The fences should have a minimum height of 1,50 m for young rheas (4-5 months) and 170 cm for adults.

For all rheas older than 5 days grit should be available. The provision of grit, especially in young animals should be done with care to prevent grit impaction. Sizes must be carefully considered and should be half to full size of the animal's toe-nail.

Guidelines for maximum figures for group size and minimum figures for space.

d= days; w= weeks; m= months; m²= square meters;

Age	Maximum birds/Group	Buildings/Shelters		Paddocks	
		Min. area/bird	m ² total area/pen	Minimum m ² area/bird	Minimum m ² total area/paddock
< 4 d	40	0,25	1		
4 d - 3 w	40	0,25 0,5	- 5	5	75
3 w - 6 m	40 ¹⁾	1	10	20	100-500 ³⁾ ^{5) 7)}
6 - 12 m		2	20	150	500 ^{4) 5)}
1 y- breeding		3 - 4	20	200	500 ^{4) 6)}

age					
adult birds	1 + 1 ²⁾	5	30	250	500 ^{4) 6)}

¹⁾ This group size presupposes no differences in sizes between the animals

²⁾ If more than one breeding group is penned in a single area, sufficient extra space, cover and the possibility to separate groups in the case of severe fighting are especially important.

³⁾ The shortest side should not be less than 6 m.

⁴⁾ The shortest side should not be less than 7 m.

⁵⁾ One side should be at least 50 m.

⁶⁾ One side should be at least 70 m.

⁷⁾ This should be interpreted according to the age of the bird.

APPENDIX 6: GUIDELINES FOR BEDDING AND FODDER CHOP

Height of ratite	Size of bedding or fodder chop
< 30 cm	5 - 10 mm
30 - 45 cm	10 - 15 mm
45 - 60 cm	15 - 20 mm
60 - 75 cm	20 - 25
75 cm - 1 m	25 - 30 mm
1 - 1,5 m	30 - 35 mm
> 1,5 m	35 - 50 mm

Bedding should preferably not be used for chicks under 3 weeks of age. If it is used it must be in small quantities.
