# **EMUS**

Code of practice for keeping emus in Western Australia

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# **PREFACE**

The Code of practice for keeping emus in Western Australia is based on *The Australian Model Code of Practice for the Welfare of Animals - husbandry of intensively reared emus* and has been adapted for use in Western Australia. The original *Model Code* was prepared for the Standing Committee on Agriculture and Resource Management (SCARM) and endorsed by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) for use as a national code. It was prepared in consultation with the relevant industry organizations and State agencies.

This code has been prepared to assist all persons handling or using emus in Western Australia, and reference to this code is made in Regulations provided under Section 25 of the *Animal Welfare Act 2002* for the purposes of a defence against cruelty. It is not intended to be used for either audit or compliance purposes.

This Western Australian version of the code is supported by the livestock industries and the Department of Agriculture. It is based on current knowledge and technology. It will be reviewed in the future on a needs basis, to take account of advances in the understanding of animal physiology and behaviour, technological changes in animal husbandry and their relationship to the welfare of animals.

For anyone using animals for scientific purposes, as defined in the *Animal Welfare Act* 2002, this code should be read and used in conjunction with the "scientific use code".

Further copies of this code are available from the Department of Local Government and Regional Development or from the internet at: <a href="http://www.dlgrd.wa.gov.au">http://www.dlgrd.wa.gov.au</a>

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# 1 INTRODUCTION

### 1.1

This Code is intended as a guide for all people responsible for the welfare and husbandry of emus that are bred and/or reared in captivity. Unless a licence has been granted, it is illegal to capture and farm wild emus in Western Australia.

### 1.2

The Code is based on the knowledge and technology available at the time of publication and may need to be varied in the future. The emu industry is evolving rapidly and it is inevitable that stock handlers will encounter circumstances with emus that are not currently covered by this Code. When this occurs it is essential that commonsense should prevail and that previous experience with stock should be utilized to the fullest so that emus are handled humanely.

### 1.3

Emus are kept in situations which vary from extensive grazing to close confinement and housing. Whatever the form of husbandry, owners, managers and handlers of emus have a responsibility for the health, welfare and considerate treatment of the birds under their control.

#### 1.4

The basic behavioural, anatomical and physiological needs of emus are considered in this document, irrespective of the degree of intensive husbandry practised, or the climatic conditions to which the emus are exposed.

### 1.5

The importance of competent stocksense in animal welfare cannot be over-emphasized. A competent stockperson must be able to recognize the early signs of distress or disease in emus so that the cause can be identified, and prompt, appropriate remedial action taken.

### 1.6

The basic requirements for the well-being of emus are:

- appropriate and sufficient food and water to sustain health and vitality;
- sufficient area to maintain their well-being and in which to exhibit normal behaviour;
- protection from predation;
- protection from disease, including disease that can be exacerbated by management;
- protection from extremes of climate, particularly during certain phases of their lives:
- and protection from pain, distress, suffering and injury.

#### 1.7

The management practices and stocking rates on all emu farms should be such that they are compatible with sustainable agriculture policies.

#### 1.8

There is a considerable diversity of opinion on the maximum stocking density that is allowable for different classes of emus. The densities outlined in this Code are conservative, but are based on the experience gained from farming emus under a variety of conditions.

# 1.9

Emus have been studied in natural conditions for many years, but have been managed in confined conditions only for a few years; consequently this Code should be reviewed at least every three years until a better understanding is gained of the needs of captive-bred emus.

#### 1.10

.Any dimensions or measurements quoted are provided for advice only, and are not intended to be prescriptive.

# 2. HOUSING

#### 2.1 General

- 2.1.1 Persons intending to erect new housing and yards, or to modify housing that has been used for other species should seek advice from the Department responsible for agriculture and others with appropriate expert knowledge. Well designed and constructed buildings and yards can provide an ideal environment for rearing and breeding emus.
- 2.1.2 The type of housing and yard dimensions required by emus will vary with the geographic location of the emu farm, the age of the emus, the management practices to be employed and the stocking density. The stocking density must be reviewed regularly and adjusted, according to the age of the birds, the flock size, the house or paddock conditions, the behavioural needs of the birds and the likely occurrence of disease.
- 2.1.3 All emus need to be protected from extremes of climate, and emus that are kept in yards or an extensive range must be provided with adequate shade and protection from the elements.

# 2.2 Chicks (0–12 weeks old)

### 2.2.1 General

Emu chicks may be reared extensively under natural conditions, or intensively in buildings in which acceptable levels of temperature, humidity, fresh air, light and hygiene can be achieved and maintained. Chicks require special attention until they lose their 'stripe' appearance, which usually occurs by 12 weeks of age.

#### 2.2.2 Natural conditions

Eggs may be incubated by the male under field conditions in either breeding pens or under open range conditions. Where breeding pens are utilized, wire netting to a height of 450 mm must be provided on all fences to prevent the chicks escaping, or being injured by emus housed in adjacent pens. The hen could attack her own chicks once they hatch. It is therefore recommended that either the hen be removed before the first chicks hatch, or the chicks be removed to a rearing shed.

Where breeding pairs are housed under free-range conditions, the range must be inspected daily and all chicks must be removed from the range as they hatch.

### 2.2.3 Intensive rearing

- 2.2.3.1 Floors and other surfaces. Floors and other surfaces should be designed, constructed and maintained so that they are non-slip, minimize the risk of injury and disease, and adequately support emu chicks so that they can stand and move freely. Deep litter floors should be checked frequently to ensure they are dry and friable. The litter should not be allowed to become caked, wet, or excessively dusty. Chicks should not be allowed to walk on bare concrete floors or those made of wire.
- 2.2.3.2 Space. Stocking density should be reviewed periodically and adjusted, taking into account the age of chicks, flock size, temperature, ventilation, lighting, quality of housing and occurrence of disease. Chicks should have access to extensive runs at an early age, but due consideration must be given to the climatic conditions. Under good management and housing conditions, it is recommended that chicks be housed in groups of up to 25 for the first 4 weeks of life at a shed density of up to 3 chicks per m². The provision of an additional outside run is optional. From 5 to 12 weeks of age chicks can be housed together in groups of up to 100 at the same shed density but, in addition, access to an outside run of 5 m² per chick must be provided.
- 2.2.3.3 Lighting. Where emus do not have access to daylight, they should be exposed to artificial light for at least eight hours per day. The effect of abnormally long periods of light (in excess of 16 hours) on the growth of chicks is uncertain and may be detrimental. A 'blackout' training period each day is recommended from one day of age to prevent panic should lighting fail.

For the first few days after hatching young chicks reared away from their father require a high light intensity of about 40 lux on the food and water so they can learn to find it. Light intensity may then be reduced to a minimum of 20 lux.

2.2.3.4 Ventilation. Where chicks are reared intensively, fresh air is required at all times to prevent the accumulation of water vapour, heat, ammonia, hydrogen sulphide, carbon dioxide, carbon monoxide and dust particles. The presence of ammonia may be a problem where there is poor ventilation, and it is usually a reliable indicator of the build up of noxious gasses. In enclosed buildings, ammonia levels should not be allowed to exceed 20 parts per million (ppm) of air, measured at bird level, without immediate corrective action being taken. (A level of 10–15 ppm of ammonia in the air can be detected by smell. An ammonia level of 25–35 ppm will cause eye and nasal irritation in humans).

# 2.3 Juvenile (blackhead) emus (12 weeks to 6 months old)

Young emus require protection from the extremes of temperature, rain and wind. At this age, emus may be kept in groups of up to 250 and should be housed initially in sheds at a maximum density of 2 per m<sup>2</sup>. They should be provided with an outside run of at least 40 m<sup>2</sup> per chick. Older blackhead chicks should be reared entirely in open conditions, depending on the prevailing weather conditions.

# 2.4 Yearling emus (6-18 months old)

Yearlings should be housed in open conditions and provided with at least 60 m<sup>2</sup> per yearling.

### 2.5 Mature emus

#### 2.5.1 Free range

Emus that have been reared in separate yards until 55 weeks of age should not be housed at a density of greater than 16 birds per hectare, that is 625 m<sup>2</sup> per bird.

### 2.5.2 Breeding pairs

Where emus are kept as breeding pairs under optimal conditions, each pair should be provided with a minimum pen size of  $20 \text{ m} \times 20 \text{ m}$ , which should be securely fenced. This applies to well-drained, high rainfall areas with plenty of vegetation to provide protection and to obscure the bird's view of adjoining pens. In low rainfall areas and where there is little vegetation, these dimensions should be increased; a pen size of  $50 \text{ m} \times 50 \text{ m}$  has been found to be satisfactory for breeding pairs.

# **3 EQUIPMENT**

### 3.1

All equipment to which emus have access must be designed and maintained to avoid injury or pain to the birds.

### 3.2

Feeders and waterers should be checked for efficient operation at least once each day. Automated hatchery equipment should have adequate back-up systems, which should include an alarm system or generator in case of a power failure.

# 4 PROTECTION FROM PREDATORS AND HAZARDS

#### 4.1

Emus should be protected from predators and, if necessary, from each other. Electric fences can be used to discourage predators and are particularly useful in affording protection to young emus.

### 4.2

Accommodation should be sited where it is safe from the effects of fires and floods.

- 4.2.1 New buildings in which birds are housed should incorporate sufficient exits to allow for emergency evacuation of the building.
- 4.2.2 Yards should be designed so that emus can be evacuated readily in case of an emergency.
- 4.2.3 Fire-fighting equipment should be available. Fire hoses should be capable of delivering water of sufficient volume and pressure to control a fire in any building or part of any building.
- 4.2.4 When planning new buildings, the use of construction materials with a high fire resistance should be considered. All electrical and fuel installations should be planned and fitted to minimize the fire risk.

#### 4.3

The use of toxic substances (for example herbicides and pesticides) should be in such a manner as to avoid any risk to emus.

# **5 FOOD AND WATER**

#### 5.1 Food

- 5.1.1 Emus other than newly hatched chicks should have access to adequate quantities of appropriate food at least once each 24 hours. The period for newly hatched chicks may be extended to not more than 48 hours. Experience may require that this period be altered in the future.
- 5.1.2 Emus should receive a diet containing adequate nutrients to meet their requirements for good health and vitality. Emus should not be provided with food that is deleterious to their health. Young chicks should not be fed fibrous or coarse food as it may become impacted and cause an obstruction.
- 5.1.3 Medicated food or water, should be supplied only under the supervision of a veterinarian familiar with emus, as the overuse or mixing of medicaments, or the medicament itself, may cause toxic injury.
- 5.1.4 Where it is proposed to slaughter emus that have received medications, professional advice should be sought to ensure that chemical residues do not contaminate the carcase.
- 5.1.5 When using mechanical systems for delivery of food, alternative methods of feeding should be available. There should be enough food on hand, or ready means of obtaining food, in the event of failure of supply.
- 5.1.6 Where chicks and yearlings are reared in groups, multiple feed points should be provided in each pen.

### 5.2 Water

- 5.2.1 Emus should be provided with sufficient drinkable water to meet their physiological requirements. Under no circumstances should emus be deprived of water for more than 24 hours.
- 5.2.2 When an emu farm is first established, or when a new water source is accessed, the water should be tested for mineral content and microbiological contamination and advice obtained as to its suitability. As the composition of water from bores, dams or water holes may alter with changes in flow or evaporation, the water may require more frequent monitoring to ascertain its continued suitability.

5.2.3 Where chicks and yearlings are reared in groups multiple water points should be provided in each pen.

# 6 HANDLING AND YARD FACILITIES

### 6.1

Boundary fences are to be constructed in accordance with the requirements of the licensing authorities. Internal fences for adult emus must be adequate to contain them; the minimum height and their construction is a subject of ongoing research.

### **6.2**

All fences in handling yards and on transportation facilities should have smooth sides with no projections or 'footholds'. These fences should be solid sided so that the emus cannot see outside the confines of the yard or race. Conventional yards can be used if some form of cladding such as plywood, tarpaulin or hessian is placed on the inside of the rails so that a solid, non-see-through barrier is presented to the emus. Emus will behave in a more orderly manner when placed in such an environment.

# 7 SPECIAL REQUIREMENTS

# 7.1 Inspections

The frequency and level of inspection should be related to the needs of the emus, but should be at least once each day. Inspections are best made at feeding times. More frequent inspections may be required during hot weather, during outbreaks of disease, or when groups of emus have been mixed. Checks should be made of the effectiveness of any automated feeding or watering systems where these have been installed.

#### 7.2 Health

- 7.2.1 All persons responsible for the care of emus should be made aware of the signs of ill-health. These include separation from other emus, lethargy, refusal to eat, changes in faeces or urine, vomiting, coughing, panting, lameness, and swellings on the body or legs. If unable to identify and correct the causes of ill health, the manager should seek advice from a veterinarian preferably one familiar with emus.
- 7.2.2 Emu farmers should operate an effective programme to prevent infectious disease, and internal and external parasitism. Particular attention should be paid to the stocking densities used for yearling and adult groups as aggressive behaviour and injuries may occur during the breeding season, when the stocking density is high. Sick and injured emus should be treated as soon as possible, and isolated if necessary. Records of sick animals, deaths, treatment given and response to treatment should be maintained to assist disease investigations.
- 7.2.3 Dead emus should be removed promptly and, if not required for post-mortem examination, disposed of in a hygienic manner, for example, by deep burial.
- 7.2.4 Emus with an incurable sickness, injury or painful deformity should be slaughtered humanely.

### 7.3 Transportation

The following recommendations are based on current knowledge and will be subject to review as the industry's experience with transportation increases.

7.3.1 The duration of all journeys should be as short as possible, as transportation can be a stressful experience.

- 7.3.2 The successful transportation of adult emus starts with orderly, well-disciplined husbandry practices which are imposed on emu chicks from when they are a day old, so that the emus are used to being handled and moved about the farm. When possible, emus older than 55 weeks should not be transported between December and June each year. This may vary depending on the location and sexual maturity of the emus.
- 7.3.3 Chicks up to 12 weeks of age should be transported in groups of no more than 20, with partitions placed between adjacent groups. The transport vehicle should be dimly lit and provide fresh air, but the chicks must be protected from chilling, and extremes in temperature.
- 7.3.4 Yearling and adult emus should be transported in vehicles which are fully enclosed, but which provide sufficient ventilation for the comfort of the birds. The transport vehicle should be divided into compartments, each containing no more than 10 emus, and should be dimly lit. The roof of the vehicle should be 20 cm or more above the height of the pelvis of the largest emu occupying the compartment, when the emu is standing erect. The floor surfaces should provide a firm but soft footing for the birds and should be capable of absorbing any moisture associated with faeces and urine. The housing density in the transport vehicle should be varied with the size and age of the emus so that a comfortable environment is provided. It is recommended that the densities do not exceed 8 birds per m² for birds less than 7 kg liveweight, 3 birds per m² for birds weighing 25–30 kg and 2 birds per m² for mature birds of 35–45 kg live weight.

### 7.4 Records

The maintenance of good records is an integral part of good farm management. Adequate records will assist in the detection of any husbandry, health or breeding problems. Accurate information should be kept on the sources of all stock, the breeding history of each bird, general husbandry practices, and the case history and treatment of any diseased or injured birds.

### **8 HATCHERY MANAGEMENT**

#### 8.1

Incubators must be supplied with adequate quantities of fresh air to prevent the build-up of disease-causing organisms, which can result in respiratory disease and high mortality rates in newly hatched chicks. Particular attention needs to be paid to the quality of the air circulating in incubators and a microbiological monitoring programme should be put into place on farms which artificially incubate emu eggs. This is important because emu eggs have a long incubation period and incubators may need to be decontaminated whilst in use.

#### 8.2

Chicks should be brooded within 24 hours of hatching. Weak, deformed or unthrifty emus should be culled and humanely destroyed.

### 8.3

Chicks in brooders should be inspected at least once every 12 hours and action taken to correct problems as they occur.

#### 8.4

Hatchery waste, including unhatched embryos, should be treated quickly and effectively to ensure the rapid destruction of all unhatched embryos. Such waste should not be stored or allowed to accumulate in the vicinity of the incubators.

#### 8.5

When necessary, chicks should be destroyed by dislocating the cervical spine. This procedure should be carried out by a person experienced in this technique. Alternatively, chicks can be decapitated.

# 9 HUMANE SLAUGHTER

### 9.1

Emus of all ages will need to be killed for a variety of health and production reasons, and in all cases it is essential that birds be slaughtered humanely using an approved method. Emus must be restrained by an experienced handler when they are to be killed.

### 9.2

Alternatively, emus may be destroyed under veterinary supervision.

# 9.3

Methods of slaughter suitable for large numbers of emus in licensed abattoirs are still being developed and more research on the subject is required.