

## Feeding Livestock in Temporary Holding Facilities in the Northern Territory Part 2. Stock Horses

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### INTRODUCTION

It is often necessary to confine stock horses in temporary holding facilities such as private yards and saleyards. It is the legal and moral responsibility of owners/managers of animals and yard facilities to provide horses with an acceptable level of care in accordance with the Australian Model Code of Practice for the Welfare of Animals.

The following are the most basic needs of animals and must be met: adequate food and water; shelter; protection from injury; freedom to display normal behaviour such as moving, standing and lying down.

To determine the adequate level of feeding for different classes of horses is complex, and requires reference to feeding standards and nutritional information. This Agnote aims to provide a comprehensive guide for maintenance feeding of stock horses in short-term holding facilities in the Northern Territory (NT).

### GENERAL FEED REQUIREMENTS

Horses should be provided with sufficient nutrients for maintenance and exercise. Adult horses fed *ad libitum* will consume about 2-2.5% of their body weight on a dry matter basis per day. The feeding recommendations in this Agnote are intended to meet the nutrient requirements of horses, which may not necessarily fully satisfy appetite. The feeding recommendations are for short term feeding in yards only, after which horses should be returned to pasture or processed.

Dry horses must be fed at least once in a 36-hour period (SCARM 2003); however, it is recommended to feed every 24 hours. Young animals and lactating mares require feeding every 8 hours (SCARM 2003). The amount of feed required will depend on the animal and the quality of the feed.

### ANIMAL FACTORS

The most important nutritional demand of an animal is for energy required for maintenance. Maintenance requirement is defined as the nutrients needed for metabolic processes and essential physical activity, with little or no work.

This Agnote provides recommendations for maintenance feeding of dry horses, with allowances for late pregnancy and lactation in mares. It does not provide recommendations for working horses.



## BREED/MATURE BODY WEIGHT

Maintenance requirements of horses are different for different breeds, which are reflected in the mature weight of the animal. When scales are not available, the most accurate estimate of the weight of a horse can be made using the following formula.

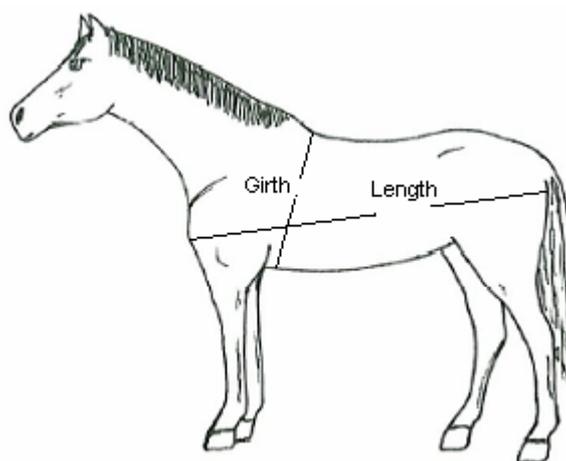
**Body weight estimate**

**Body weight =  $\frac{\text{Girth}^2 (\text{cm}) \times \text{body length (cm)}}{11\ 877}$**

Note:

1. Remember to square the girth measurement (G cm x G cm)
2. Ensure the horse is breathing out when measuring the girth

Source: Kohnke et al. (1999)



Adapted from: Khonke et al. (1999)

**Figure 1.** Positions for girth and length measurements

## BROOD MARES

During the early stages of pregnancy and peak lactation, a mare needs substantial amounts of energy and other nutrients. A mare in the late stages of pregnancy requires 12-20% more energy in her daily diet than a horse at maintenance, while a mare in peak lactation requires 70% more energy (NRC 1989). Without an adequate diet, a mare will draw on body reserves to maintain milk production or to supply nutrients to the foetus, which will result in a significant weight loss.

## WORK/ACTIVITY

While this Agnote does not provide recommendations for horses at work, it is important to be aware that working animals require a significantly higher quality diet than horses doing little or no work. For example, stock horses doing moderate work (station work, camp drafting) require 50% more energy in the diet than idle horses (NRC 1989).

## FEED FACTORS

Feed nutrient values (protein, energy and digestibility) will vary greatly between different feed types, which will affect the amount of feed needed to meet maintenance requirements of animals. Good pasture hays are often sufficient for dry horses doing minimal work. Low quality rangeland pastures are poorly digested, which reduces the amount of feed a horse can eat and limits nutrient intake. A good quality lucerne hay, copra or horse cubes may be used to supplement poor quality pasture hay. When feeding supplements, a horse diet should contain at least 1% of its bodyweight per day in good quality roughage to prevent digestive disorders.

Digestible energy (measured as megajoules of digestible energy per kilogram of dry matter) is the energy measure commonly used in horse feeding and should be listed on all commercial feed product labels. Nutrient levels are expressed on a dry matter (DM) basis. Most hays and copra contain approximately 90% DM, while silages have about 30% DM. The remaining proportion of the feed is predominantly water. This must be taken into account when calculating the amount of fodder to feed.

## FEEDING LOCAL FEEDS IN THE NT

The range of available feeds is limited in the NT, particularly in the central and southern regions. Table 1 provides the nutrient composition of a range of seasonally available feeds which may be used for feeding horses.

**Table 1.** Nutrient composition of feeds readily available in the NT

Feed Type	Digestible energy (MJ DE/kg DM)	Crude protein (%)
Horse cubes <sup>1</sup>	11	12-13
Copra	15.4	20-23
Good legume hay (eg. lucerne)	10.5-12.5	12-15
Good grass hay (eg. pangola, Rhodes)	8.5-11	7.5-10
Forage sorghum hay	10-10.5	8-10
Rangeland pastures (eg. Flinders and Mitchell grass)	6-9.5	4-7.5

<sup>1</sup> Horse cubes are a concentrate product and should be fed in conjunction with roughage (hay, pasture).

Table 2 provides the minimum requirements for the full hand feeding of stock horses under minimal workload, for the range of local feed options given above. It is important to note that not all feeds will be nutritionally adequate to meet all classes of horses within their daily feed intake ability. Mares in late pregnancy or peak lactation will require a higher quality diet in order to acquire sufficient nutrients to maintain adequate body condition. Young horses also require a high quality diet, for the development of bone and muscle.

**Table 2.** Minimum\* feed requirements for full hand feeding of horses ('as fed' kg/head/day)

Class and live-weight (kg)	Feed type					
	Good grass hay : Horse cubes 60 : 40	Good grass hay : Copra 90 : 10 **	Good grass hay	Forage sorghum hay	Lucerne : Rangeland hay 70 : 30 **	Lucerne : Rangeland hay 30 : 70 **
<b>Stallions, geldings, dry mares</b>						
400	6.6	6.8	7.3	6.2	6.8	8.4
500	8	8.3	9	7.6	8.3	10.2
600	9.5	9.8	10.6	9	9.8	12.2
<b>Late pregnancy</b>						
400	8.3	8.1	-	-	8.1	-
500	10.3	10	-	-	10	-
600	12.2	11.8	-	-	11.8	-
<b>Peak lactation</b>						
400	13.3	11.6	-	-	11.6	-
500	16.7	14.3	-	-	14.3	-
600	20	17	-	-	17	-
<b>Growing</b>						
6 months (180 kg)	7	6.5	-	-	6.4	-
12 months (250 kg)	8.3	7.9	-	-	7.9	-
18 months (300 kg)	8.3	8	-	-	8	-

- Diet deficient in energy and/or protein for the class of horse

\* Compliant with energy maintenance requirements of different classes of horses (NRC 1989)

\*\* See **Example 1** for calculating levels of individual feeds required in diets containing more than one feed type.

### EXAMPLE 1

#### Calculating individual feeds in mixes recommended in Table 2

**Animal class:** 400 kg mare in late stages of pregnancy

**Feeds available:** Good grass hay (Rhodes grass);  
copra meal

**Recommended feeding level:** 8.1kg/day [hay: copra] [90:10]

$$= \frac{90}{100} \times 8.1 \text{ kg} = 7.3 \text{ kg Rhodes grass hay per day}$$

$$= \frac{10}{100} \times 8.1 \text{ kg} = 0.8 \text{ kg copra meal per day}$$

## THE FEEDING ENVIRONMENT

While it is possible to accurately calculate feeding levels for horses, the feeding environment can greatly influence the amount of feed the horse will actually eat. Feed must be free of contamination and spoilage. The feeding system should allow equal access, giving enough space to limit bullying and the provide access for 'shy' feeders. If shy feeders do not commence eating within 24 hours, they should be separated from the feeding group.

Stocking density should be no greater and one animal/3.5m<sup>2</sup> for adult horses in holding pens (AWAC 1993).

Ensure the yard complex is free from potentially toxic plants, old hay, cattle feed such as weaner pellets, grain, urea and mineral supplements, and rubbish such as plastic bags, bale twine and empty syringes.

## WATER

It is necessary that horses have daily access to a sufficient supply of cool, clean water. Table 3 provides approximate water consumption rates for horses. **In temperatures above 35°C, horses will require approximately 50% more water than suggested in Table 3.** These are average figures only. There will be variation in intake depending on ambient temperature and water content in feed.

**Table 3.** Average daily water consumption by horses

Bodyweight (kg)	Average water consumption (L/day)
200	10-15
300	15-22
400	20-30
500	25-36
600	30-43
Lactating Mare	45-65

Source: Kohnke et al. (1999) NRC (1989)

**Note:** The feed nutrient compositions used in this Agnote are a range of values sourced from feed tables (NRC 1989), Australian stockfeed nutrient labels, state government publications and analysis of NT pastures.

The information in this Agnote is of a general nature based on a number of local feeds. More specific advice may be sought from the NT Department of Primary Industry, Fisheries and Mines, or a private nutrition consultant.

## REFERENCES:

AWAC (1993). Code of recommendations and minimum standards for the welfare of horses. Code of Animal Welfare No. 7. Animal Welfare Advisory Committee, Wellington. (<http://www.biosecurity.govt.nz/animal-welfare/codes/horses/index.htm#4>)

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Department of Primary Industry, Fisheries and Mines

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ISSN 0157-8243

Serial No. 833

Agdex No.461/53

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