

RECOMMENDED CODE OF PRACTICE FOR

The Care and Handling of Horses in PMU Operations



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PREFACE

Responsibility for the humane treatment and proper care of farm and domestic animals lies with those who have assumed stewardship of these animals. As the primary beneficiaries, we have this moral obligation.

Our progressive society continues to express an evolving concern about animal welfare. This concern, linked to improvements in human standards of living and a more informed public, necessitates that our industry responds proactively to the issue.

For most, our caring nature, and the recognition that proper animal care leads to enhanced productivity is all that is required to insure that the needs of our livestock are looked after. Voluntary guidelines, however, serve our industry by setting standards and expectations. These guidelines also inform the public about responsible agricultural practices.

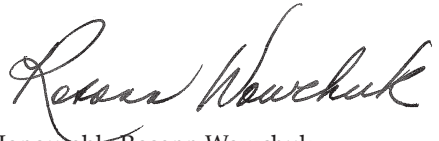
Several Codes of Practice for the care and handling of farm animals have been developed in recent years, each dealing with the specific needs of a component of our industry. The Recommended Code of Practice for the Care and Handling of Horses in PMU Operations was first published by the Province of Manitoba in 1990. Changes in both producer and industry needs have resulted in a need to amend the Code.

A PMU Study Committee developed both the original Code and the amendments. This committee, initiated by Manitoba Agriculture and Ayerst Organics (Wyeth Organics), included PMU ranchers and veterinary practitioners.

We are pleased to support this Code of Practice in recognition of the assurance that it provides for the proper care and handling of all animals involved in PMU operations.



Roger Johnson, Commissioner
North Dakota Department of Agriculture
North Dakota



Honourable Rosann Wowchuk
Minister of Agriculture, Food and Rural
Initiatives
Manitoba



Honourable Mark Wartman
Minister of Agriculture and Food
Saskatchewan

INTRODUCTION

Animal welfare considerations are important for keeping and raising animals, both in Canada and internationally. Practices, which may once have been deemed acceptable, are now being reassessed and modified according to new knowledge and changing attitudes. High standards of animal welfare are not only important legally, but also have a direct economic benefit and ensure that the horse industry has a place in the international market.

Providing competent handling and an environment that allows horses to fulfil their basic needs are crucial elements of responsible animal care.

Elements of responsible animal care include:

- Comfort and shelter;
- Readily accessible potable water and a diet to maintain the animal in full health and vigour;
- Opportunity for reasonable movement;
- Company of other animals, particularly of like kind;
- Opportunity to exercise most normal patterns of behaviour;
- Prevention or rapid diagnosis and treatment, of abnormal behaviour, injury and disease;
- Emergency arrangements to cover outbreaks of fire, the breakdown of essential mechanical services and disruption of supplies.

The recommendations in this Code are based on the best knowledge currently available. We recognize that research into, and evaluation of, various management practices and welfare issues must be supported. As scientific and technological knowledge advances, management procedures will evolve further. We encourage the pursuit of such knowledge and adoption of viable handling and management procedures.

CODE OF PRACTICE

1. HOUSING OF ON-LINE MARES

- 1.1 Every PMU operator should provide horse stables of sound construction that are so constructed and maintained to provide weather proof accommodations which maintain barn temperatures above freezing.
- 1.2 All stalls in every horse stable should be properly maintained and should be so constructed and maintained to:
 - a) Provide a floor free from any holes or cracks that may cause injury to a horse.
 - b) Provide a non-slip floor free of protrusions and debris. The floor should be composed of at least one of the following:
 - i broom finished concrete
 - ii rubber matting
 - iii wooden floor
- 1.3 Every PMU rancher must provide an individual stall for each pregnant mare that is on the production line.
- 1.4 Every individual stall should be equipped with a manger at a height suitable for the size of the horse in the stall.
- 1.5 Every individual stall should be of sufficient size to comfortably accommodate the horse and an attendant at any time.
- 1.6 The partitions of every individual stall and of every box stall should be soundly constructed so as not to cause injury to any horse.
- 1.7 All alleyways within a horse stable should be of concrete and be of such a width that they can be maintained to provide for:
 - a) The safe movement of horses and attendants.
 - b) The proper transportation of feed and waste materials.

Head-to-head stall arrangement:

		Imperial	Metric
Feed Alleys	Minimum	6 ft*	183cm*
Rear Alleys	Minimum	8 ft*	244cm*

Rear-to-rear stall arrangement:

Feed Alleys (2)	Minimum	4 ft*	122cm*
Centre Alley	Minimum	12 ft*	366cm*

NOTE: * Indicates inside measurements.

- 1.8 All ceilings and overhead supporting beams should be solid and a minimum height of 9 ft (274 cm).
- 1.9 All horse stables should have an adequate source of artificial lighting to permit effective observation of horses at all times.
- 1.10 All horse stables should have a source of natural lighting (windows or skylights).
- 1.11 All stables should be ventilated to prevent excessive heat and humidity.
- 1.12 All premises should have at least one box stall with a minimum floor area of 9 sq. ft. (0.84 sq. m) per 100 lbs (45.4 kg) of body weight according to the guidelines given below.

0 - 100 mares	1 box stall
101 - 200 mares	2 box stalls
201 - 300 mares	3 box stalls etc.
- 1.13 Box stalls must not be used for urine collection of a pregnant mare in production.
- 1.14 The area where PMU mares are stabled should be partitioned to exclude the entry of other animals and poultry.
- 1.15 All premises should have a fire extinguisher in the PMU tank room. Additional extinguishers may be required by provincial/state fire codes.

2. MAINTENANCE

- 2.1 All mangers and utensils used for feed and water should be maintained in a clean and sanitary condition.
- 2.2 All floors, walls, ceilings and partitions in any horse stable should be maintained to be free from accumulations of dirt or refuse.
- 2.3 Every individual stall, manger and every box stall should be maintained in a proper state of repair and free from any projection or objects capable of causing injury to a horse.
- 2.4 Adequate amounts of suitable bedding material should be provided in stalls for the comfort of the horses.
- 2.5 All manure from every horse stable should be removed daily and should not be stored or accumulated in the exercise yard.
- 2.6 Where manure is stored or accumulated, the operator of the PMU farm should remove the manure and dispose of it as soon as practical after the end of the urine production season and, in any event, prior to the commencement of the next urine production season. Handling and disposal of manure must meet local and provincial/state environmental regulations.

- 2.7 Every operator of a PMU farm should thoroughly clean and disinfect the horse stables after the end of every urine production season and, in any event at least thirty days prior to the commencement of the next urine production season.
- 2.8 Every operation should provide a yard that is properly fenced, adequately drained and of sufficient size for the exercising of horses. The yard and fences should be maintained in good condition, free from equipment, machinery, debris and refuse of all kinds.
- 2.9 All premises should provide suitable facilities for the veterinary treatment and handling of animals.

3. HARNESSING

- 3.1 All harness and equipment used on a pregnant mare for the purpose of PMU collection must be of a design and construction approved by the Code of Practice Committee (*Similar to Appendix IB, page 13*).
- 3.2 Any equipment and harness used in the collection of urine from a pregnant mare, should be placed to prevent chafing or the development of sores or other injuries to the mare.
- 3.3 Where any equipment or harness interferes with proper treatment or healing of any wound, disease or abnormal condition of the mare, the operator of the PMU farm shall forthwith remove such equipment or harness and shall not allow or cause or permit the placing of any equipment or harness on the horse so long as such equipment or harness would interfere with the proper treatment or healing of the wound, disease or abnormal condition.
- 3.4 All collection equipment and harnesses shall be kept in a clean, sanitary condition and in good repair.
- 3.5 All mares should be secured with a proper fitting halter having a shank long enough to permit the mare to feed and lie down comfortably.

4. HEALTH

- 4.1 The operator of a PMU farm shall at all times take all necessary steps to provide adequate treatment of any wound, disease or abnormal condition of any horse on the farm.
- 4.2 Where the condition of any horse requires veterinary attention, veterinary care must be requested and provided as soon as possible.
- 4.3 No PMU producer shall use, on the PMU collection line, any mare that is foundered, physically disabled or clinically ill.

- 4.4 The operator of a PMU farm shall maintain a herd health record of all horses on the farm and the record shall contain, in as accurate a form as may be practical:
- a) Any treatment given or applied to the mare in respect of any wound, disease or abnormal condition and the date on which such treatment was given or applied.
 - b) Any treatment given or applied to the mare in respect of parasites and the date on which such treatment was given or applied.
 - c) Any vaccination given to the mare and the date on which that vaccination was given.
- 4.5 No PMU operator shall dispose of a horse of any age, which is destined for slaughter, if it has been treated with medication, until such time as the withdrawal time has elapsed. The withdrawal time will either be as provided on the medication label or will be stipulated by the attending veterinarian.
- 4.6 Every horse on a PMU farm must be given the opportunity to exercise as is necessary for its individual welfare, as determined by the operator, the Field Auditor and the attending veterinarian.
- 4.7 All horses on a PMU farm should be groomed as is necessary for their welfare.
- 4.8 The operator of a PMU farm shall insure that hooves of every horse on the farm are trimmed as often as is necessary to prevent the hooves attaining a length that interferes with the well being of the horse.
- 4.9 Every PMU operator should establish a parasite control program in consultation with the attending veterinarian. The program will include administration of anthelmintic (dewormer) as required, as well as manure and pasture management.
- 4.10 Every PMU operator should vaccinate the horse herd against sleeping sickness and tetanus, and other diseases, or as recommended by the attending veterinarian.
- 4.11 Every PMU operator should insure that dental care is provided for the horse herd.
- 4.12 Every PMU operator shall have access to all instruments, appliances and medicines necessary for the proper grooming, feeding, care and emergency treatment of the horse herd.
- 4.13 A mare should not be induced to abort her foal unless, in the opinion of a veterinarian, to continue the pregnancy would endanger the mare's health.

- 4.14 Mares should be harnessed when acquiring urine samples for the lab.
- 4.15 Urine produced from mares receiving any medication may be withheld from shipment based on the recommendation of the attending veterinarian or the company's policy.

5. NUTRITION

- 5.1 Mares on the line shall be offered water in amounts as inferred from the National Research Council Nutrient Requirements of Horses (2007) and as indicated in the following table. Water should be analysed, as quality of water can have a major impact on the health of horses.

Water Intake of Horses*			
Body Weight	Minimum	Average	Maximum
1200 lbs (545 kg)	4 gal [§] (18 L)	6.0 gal (27 L)	8.0 gal (36 L)
1500 lbs (680 kg)	5 gal (22.5 L)	8.0 gal (36 L)	10.0 gal (45 L)
1800 lbs (818 kg)	6 gal (27 L)	9.5 gal (43 L)	12.0 gal (54 L)

* adapted from: *Nutrient Requirements of Horses, 6th Edition, National Research, 2007.*

§ Canadian Gallon = 4.5 Litres

- 5.2 Mares should be taken off summer pasture and started on winter ration in the corral or smaller pasture. Change of feed should be done gradually. After 5-7 days on this diet, mares should be tied in the barn and fed according to the schedule that will be used during the winter months.
- 5.3 Grain rations should be fed at levels which will keep the mares in good body condition with a minimum body condition score of 5 (*See Appendix III, pages 16 & 17*). Grain should be mature, free of rust, smut, mustiness and excess dust.
- 5.4 Roughage should be well cured in the swath, and free of dust, mustiness, spoilage and weeds.
- 5.5 Rations for PMU horses should be formulated in accordance with the current recommendations of the National Research Council Nutrient Requirements of Horses (2007). Both grain and roughage should be tested for nutrient content at a reputable feed laboratory. A balanced feeding program providing recommended amounts of all nutrients is required for good horse health.

Protein is a major component of the tissues of the body. The protein requirement is greatest in young, growing animals and lowest in mature animals maintaining themselves.

During the last 60 days of gestation, a diet containing 9 - 11% protein is required. This requirement could be met by feeding high quality hay.

When the forage and grain being fed do not meet the protein requirements, the use of a protein supplement is recommended.

When feed has not been tested for nutrient content, and the ration consists of grain and mature grass forage or straw, a mineral containing at least two parts calcium to one part phosphorus should be fed along with the grain and roughage in amount as given in the table below. If feeding higher quality forage, feed mineral containing one part calcium to one part phosphorus in amounts as indicated below.

Body Weight (pounds or kg conversion)	Amount of mineral to supply per day (in ounces or grams)
1200 lbs (545 kg)	1.5 – 2 ounces (42 – 56 grams)
1500 lbs (680 kg)	2 – 2.5 ounces (56 – 70 grams)
1800 lbs (818 kg)	2.5 – 3 ounces (70 – 84 grams)

During the last 60 days of gestation, higher quality hay should be fed and/or the amounts of mineral mix fed should be increased by 50 – 100 percent above maintenance.

- 5.6 Salt should be provided at a level sufficient to maintain proper metabolism and fluid balance. This amount needed is about 0.10 - 0.20% of dry matter intake, or 0.67 - 1 ounce/animal/day (20 - 28 grams/animal/day) according to the body weight of the mare.
- 5.7 Vitamin A and D supplement should be used so that Vitamin A is provided to each mare at no less than 20,000 IU/animal/day to mares maintaining themselves and during early gestation. During the last 90 days of gestation and lactation, until out on good pasture, 40,000 - 50,000 IU/animal/day of Vitamin A should be provided.
- 5.8 Stallions may be kept outdoors provided they have adequate fat cover, are fed properly, and have shelter from the wind.

Stallions should be maintained in a thrifty, vigorous body condition with a minimum body score of 5 (*See Appendix III, Page 16 - 17*). Fat is a good insulator. Stallions kept outside during the winter months should be in good body condition by the onset of cold weather. Thin animals require up to 50 percent more feed to keep themselves warm in cold weather.

Good quality roughage should be fed free choice. Animals that require more body conditioning should be fed grain until the desired body condition is reached. Stallions in good body condition receiving good quality hay free choice should require little or no grain to maintain body condition even in cold weather. Water should be provided free choice

or at least twice a day. Salt and a mineral mix high in trace minerals should be provided all year around. During the winter, salt and minerals should be free choice in a loose form and should be put out fresh at least once a week. If salt and minerals are fed on a daily basis in the ration, both salt and mineral should be provided at 28 - 84 gm (1 - 3 oz/ animal/day). Vitamin A should be provided at 50,000 IU/animal/day. Adequate bedding should be provided. For optimum semen quality it is important that stallions be provided with adequate levels of vitamins and minerals as well as being kept in good body condition.

6. TRANSPORTATION

6.1 Where horses, including foals, are transported in any vehicle:

- a) The vehicle shall be of sound construction and shall be properly maintained.
- b) The floor of any stall or compartment of the vehicle or any ramp used in transporting horses shall be so constructed and maintained to provide a surface free from any holes or cracks that are capable of causing injury to a horse.
- c) Every stall or compartment of the vehicle and any ramp used in transporting shall be free from any projections, holes or objects capable of causing injury to a horse.
- d) Every stall or compartment of the vehicle should be of a height adequate enough to provide reasonable clearance above the withers and to prevent injury to the horses upon entrance or exit. As a guide, allow at least 2.5 cm (1 in) clearance for each hand of horse height at the withers.
- e) Every stall or compartment of the vehicle shall, during the time that it is used, have an overhead covering adequate to prevent the direct entry of sun, rain, hail or snow into the stall or compartment.
- f) Every stall or compartment of the vehicle should be supplied with adequate clean bedding to provide for the comfort and safety of any horse therein. Vehicle floors must provide secure footing.
- g) Horses shall be transported to their destination without delay and shall be provided with adequate amounts of suitable feed and water at such intervals as may be necessary for their comfort and welfare.
- h) Recently weaned foals require special care and attention during transport. Foals should be in transit for no longer than eight hours, after which time they should be provided with rest, feed and water prior to continuing the trip.

- i) Specifications for maximum loading density for loose horses in transit are stipulated in Appendix 6 in the *Recommended Code of Practice for the Care and Handling of Farm Animals: Horses* (CARC, 1998).

7. PASTURE AND BREEDING MANAGEMENT

- 7.1 Stallions should be placed in the breeding pasture on May 28 or later, and should be removed by the first week of August. A short breeding season is desirable to avoid the problems associated with late-bred mares.
- 7.2 Every PMU producer should have adequate pasture to maintain the well being and health of the herd.
- 7.3 In areas where a PMU producer cannot supply adequate pasture for the horse herd, supplementary feed shall be given to maintain the horses' health.
- 7.4 All PMU producers shall make available salt and mineral mixtures, free-choice, to the horse herd during the summer months.
- 7.5 A good supply of potable water must be available to the horse herd at all times.

8. HANDLING OF HORSES

- 8.1 All PMU producers should handle all horses with care, gentleness and patience. Replacement mares and stallions should be of a temperament that will enhance the overall quality of the herd.
- 8.2 The use of goads and prods should be avoided.
- 8.3 No person shall use tail, pastern, leg or other restraints on mares that are being used for PMU collection.
- 8.4 All halter training of foals should be done quietly and carefully to minimize stress or the chance of injury.

9. FOAL MANAGEMENT

- 9.1 No foals shall leave the premises of a PMU operator, for sale, prior to the first day of September and not until the foal is 90 days of age. Fall foal sales must not occur prior to September 1.
- 9.2 Diets for foals should be formulated in accordance with the current recommendations of the National Research Council Nutrient Requirements of Horses (2007). Foals shall be offered high quality grass-legume forage free-choice and an appropriate concentrate (grain mix). The formulation of the concentrate (grain mix) will depend on the type and quality of forage being fed, but should provide adequate energy,

protein, calcium, phosphorus, trace minerals and vitamins to promote proper muscle and bone development. A good supply of potable water must be available at all times.

- 9.3 As a rule of thumb, feed each replacement foal good quality roughage, plus 0.5- 1.5 lb (227 – 680 gm) concentrate per 100 lb (45.4 kg) of body weight per day until they become yearlings. From yearlings until 90% of anticipated mature weight is attained, feed 0.5 to 1 lb (227 – 454 gm) of concentrate per 100 lb (45.4 kg) of body weight per day. After realizing 90% of mature weight, feed as a mature horse.
- 9.4 Replacement foals should be removed to a separate area post-weaning, thereby eliminating contact with the mares. This area should be well drained and properly bedded for comfort of foals, and should be free of all hazardous objects so as not to cause injury to any of the foals.
- 9.5 All foals should be treated for any internal and/or external parasites as necessary.
- 9.6 The area where foals are being kept should have adequate shelter from adverse conditions.
- 9.7 The area where foals are being kept should be of adequate size to ensure that there is no over-crowding.

10. INSPECTIONS

- 10.1 Representatives or agents of the company purchasing the PMU shall have the right to inspect any and all of the producer's facilities for the collection and storage of PMU at any time. Such inspections shall include, but not be limited to, compliance with the guidance set forth in the "Recommended Code of Practice for the Care and Handling of Horses in PMU Operations".
- 10.2 Every producer shall have all of his/her horses on the PMU farm included in a herd health program with a licensed veterinarian, with veterinary visits at 4 - 8 week intervals during the collection season.

APPENDIX IA STALL SIZES

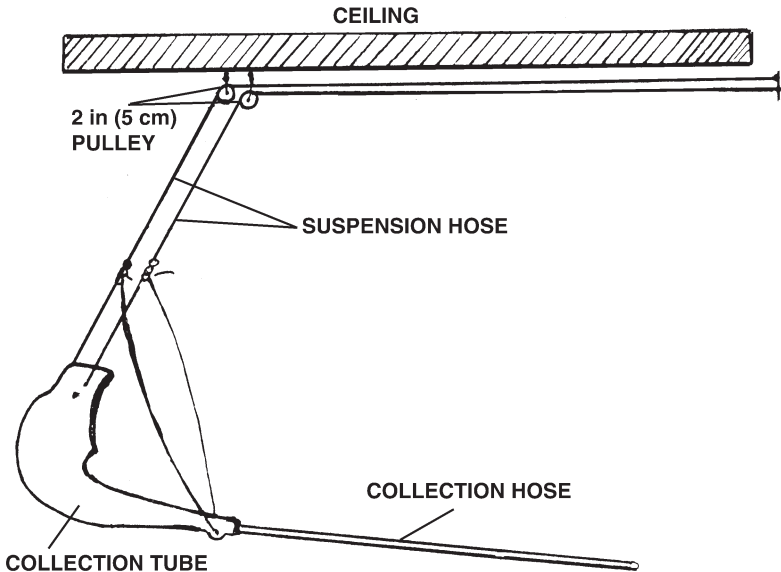
STALL SIZES:

HORSE WEIGHT*	MINIMUM STALL WIDTH (Centre to Centre)	
Up to 1300 lbs (408 – 590 kg)	4 ft.	(122 cm)
1301 - 1700 lbs (591 – 770 kg)	4 1/2 ft	(137 cm)
Over 1700 lbs (771 kg)	5 ft.	(152 cm)

* Maximum weight at any given time during the collection season.

The partitions should be constructed in a manner similar to the illustrations in "Appendix IIA and IIB".

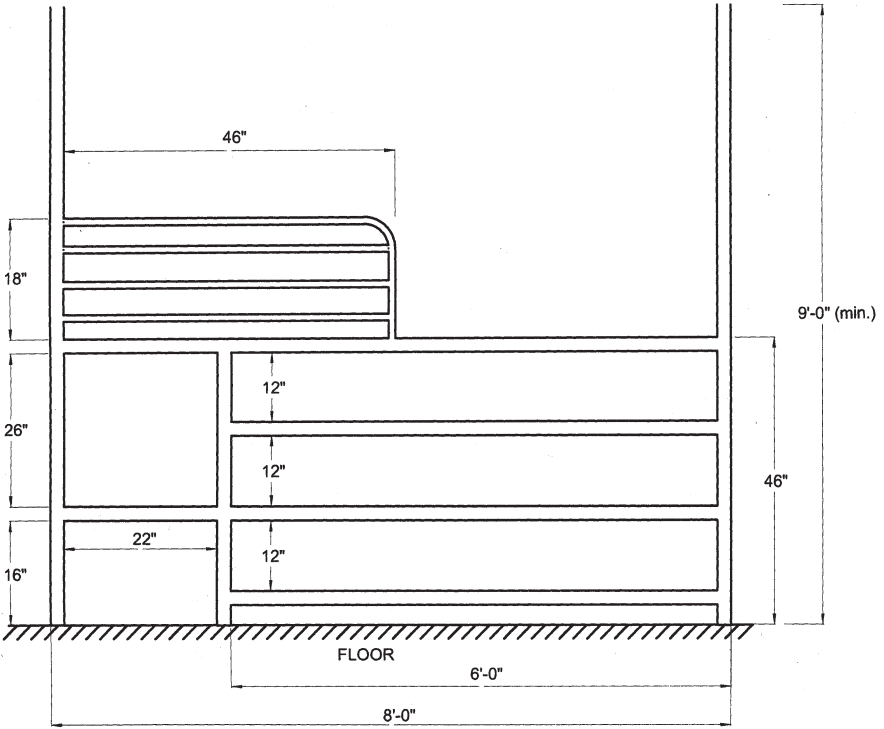
APPENDIX IB SUSPENSION HITCH



The above diagram illustrates one of the methods used in hanging the rubber suspension harness. The use of pulleys makes it more flexible.

To ensure maximum comfort to the mare, it is recommended that the minimum length of the suspension hose, from the collection tube to the ceiling attachment at the front of the stall, be 10 ft. per side (305 cm).

APPENDIX IIA PMU STALL IMPERIAL



All measurements illustrated are minimum requirements. Larger stalls are permitted. Partitions may be partially solid.

MATERIAL USED Main structure 2" or 3" pipes or square tubing;
for the headstall 1" pipe or square tubing.

FRONT OF MANGER 26" HIGH

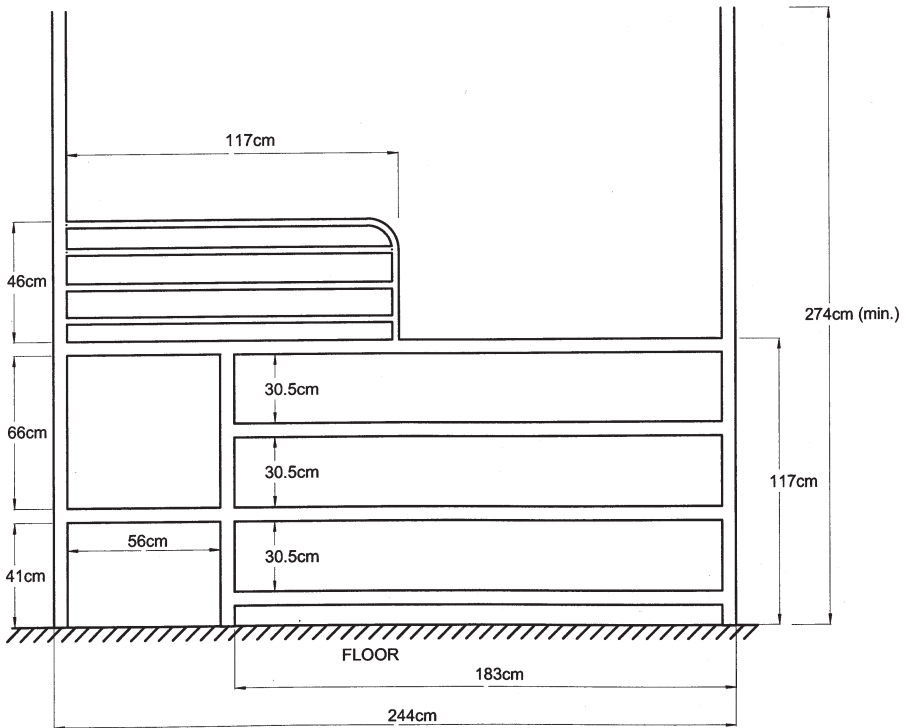
BACK OF MANGER 24" HIGH

BOTTOM OF MANGER 22" WIDE

STALL WIDTH:

Mares up to 1300 lbs	4 feet	Centre to Centre
Mares 1301 to 1700 lbs	4 ½ feet	Centre to Centre
Mares over 1700 lbs	5 feet	Centre to Centre

APPENDIX IIB PMU STALL METRIC



All measurements illustrated are minimum requirements. Larger stalls are permitted. Partitions may be partially solid.

MATERIAL USED Main structure 5.1 cm or 7.6 cm pipes or square tubing; for the headstall 2.5 cm pipe or square tubing.

FRONT OF MANGER 66 cm HIGH

BACK OF MANGER 61 cm HIGH

BOTTOM OF MANGER 56 cm WIDE

STALL WIDTH:

Mares up to 580 kg	122 cm	Centre to Centre
Mares 590 to 771 kg	137 cm	Centre to Centre
Mares over 771 kg	152 cm	Centre to Centre

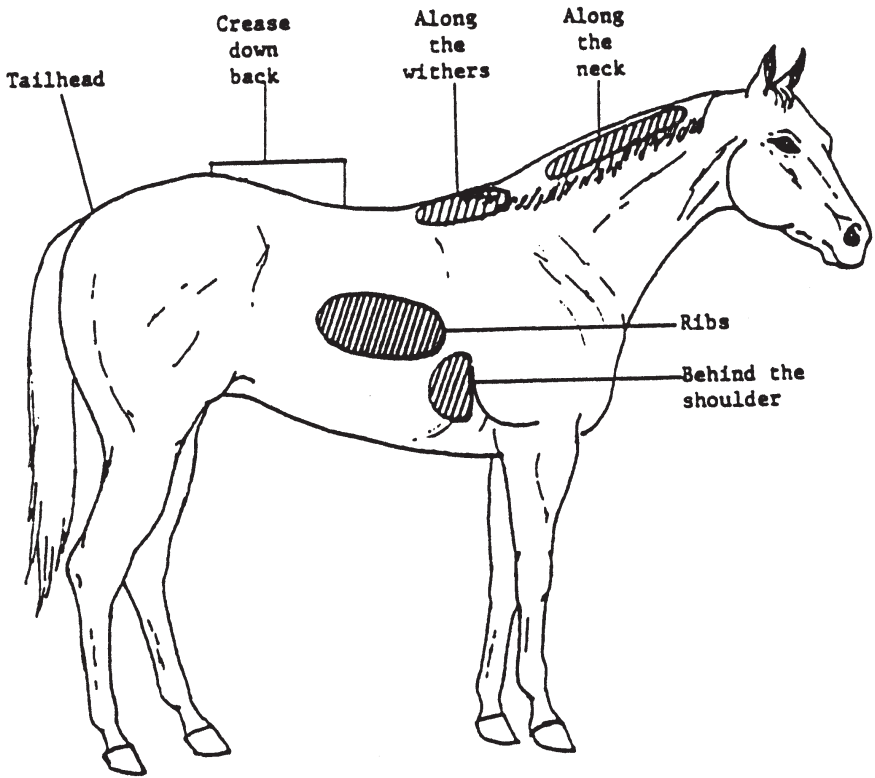
APPENDIX III

DESCRIPTION OF THE CONDITION SCORE SYSTEM

<i>Score</i>	<i>Description</i>
1 POOR.	Animal extremely emaciated. Spinous processes, ribs, tailhead, and hooks and pins projecting prominently. Bone structure of withers, shoulders and neck easily noticeable. No fatty tissues can be felt.
2 VERY THIN.	Animal emaciated. Slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded. Spinous processes, ribs, tailhead, and hooks and pins prominent. Withers, shoulders and neck structures faintly discernible.
3 THIN.	Fat built up about halfway on spinous processes; transverse processes cannot be felt. Slight fat cover over ribs. Spinous processes and ribs easily discernible. Tailhead prominent, but individual vertebrae cannot be visually identified. Hook bones appear rounded, but easily discernible. Pin bones not distinguishable. Withers, shoulders and neck accentuated
4 MODERATELY THIN.	Negative crease along back. Faint outline of ribs discernible. Tailhead prominence depends on conformation, fat can be felt around it. Hook bones not discernible. Withers, shoulders and neck not obviously thin.
5 MODERATE.	Back level. Ribs cannot be visually distinguished but can be easily felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.
6 MODERATE TO FLESHY.	May have slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along the sides of the withers, behind the shoulders and along the sides of the neck.
7 FLESHY.	May have crease down back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Fat deposited along withers, behind shoulders and along the neck.
8 FAT.	Crease down back. Difficult to feel ribs. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulder filled in flush. Noticeable thickening of neck. Fat deposited along inner buttocks.
9 EXTREMELY FAT.	Obvious crease down back. Patchy fat appearing over ribs. Bulging fat around tailhead, along withers, behind shoulders and along neck. Fat along inner buttocks may rub together. Flank filled in flush.

APPENDIX III CONDITION SCORE SYSTEM

Diagram of areas emphasized in condition score.



Henneke, D.R., G.D Potter, J.L. Kreider and B.F. Yeates. 1983. Relationship between body condition score, physical measurements and bodyfat percentage in mares. *Equine Veterinary Journal* Vol. 15: 371-372

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