
UNIT 13 WORKING ANIMALS

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13.1 LEARNING OUTCOMES

- a) **Knowledge and Understanding:** After studying this Unit, you will be able to:
 - Understand the meaning and purpose of working animals.
 - Classify the working animals based on the role they perform.
- b) **Practical and Professional Skills:** After studying this Unit, you will be able to:
 - Describe the husbandry systems of working animals and general welfare issues associated with them.

13.2 INTRODUCTION

Dear Learner,

In the previous five blocks of MAW-002(Volume-I), you were introduced to the production systems and welfare issues in farm animals (cattle, buffaloes, sheep, goats, pigs and poultry) which are reared mainly for milk, meat, wool and eggs. In this unit let us discuss the concept and husbandry systems of following major working animals.

- Horses / Ponies / Donkeys

- Bullocks
- Camels, and
- Elephants

Working animals are those animals, which are domesticated i.e. kept and trained by humans for their work / draught purpose. You would have seen the bullocks being used in the agricultural fields for ploughing, for pulling carts loaded with goods. Donkeys could be seen carrying the raw bricks on packsaddle in brick-kilns and cloths when used by washer men community. Horses are often used for pulling carriages/ tongas (two-wheeled carts), for transporting the people and goods. Camels are used for transporting goods on carts and elephants are occasionally used for logging purposes.

Welfare of working animals (Box 13.1& Fig. 13.1) is closely linked to the husbandry systems, which include the breeding, feeding, watering, protecting them from the adverse climatic conditions (heat, cold, rains etc.) and other preventative management practices such as vaccination against diseases such as Foot & Mouth Disease (FMD), Hemorrhagic Septicemia (HS), Black Quarter (BQ), Tetanus etc.

Box 13.1: Welfare of Working Animals

World Animal Protection (WAP) defined animal welfare as the inseparable relationship between the physical (fitness), mental (feelings) and naturalness states (the ability to fulfill natural needs /desires). Accordingly each working animal has different welfare needs.

Example 1: The bullocks used for transportation may develop swelling on the neck due to constant friction of the yoke, which may later become an abscess (yoke gall). Such conditions are as a result of heavy load pressing on the yoke and also could be because of the unequal height of the bullock pair being hitched to the cart.

Example 2: The donkeys and ponies used for transporting the raw bricks in brick-kilns can develop wounds on their wither, back, breast, girth, base of the tail etc., where the pack saddle loaded with bricks comes in contact. These animals may become lame due to the uneven terrain of work and overloading.



Fig. 13.1: Donkeys transporting the raw bricks
(Photo: ICAR- NRC on Equines, Hisar)

The improvement in the welfare of these working animals could be achieved by adopting welfare friendly animal husbandry practices including, humane handling and restraining techniques such as behavioral, physical and chemical

methods. The same humane practices being adopted by the owners or custodians of the animals may be followed by other stakeholders and service providers too, such as veterinary doctors, paravets, farriers etc. We can also ensure improvement in working animals' welfare through enforcement or implementation of existing animal protection laws, particularly to prevent or stop cruel or abusive practices such as over loading, use of torture devices etc.

13.2.1 Working Animals

Working animals, mainly equids, bovids and camelids are draught animals that perform transport and traction activities. A working animal is an animal, usually domesticated (Box 13.2) that is held by humans and trained to perform specific tasks. They may be close members of the family, such as guide dogs or other assistance dogs, or they may be animals trained to provide traction force, such as bullocks, draft horse or logging elephants.

Box 13.2: Domestication

Domestication is a sustained multi-generational relationship in which one group of organisms assumes a significant degree of influence over the reproduction and care of another group to secure a more predictable supply of resources from that second group (Zeder, 2015).

The latter types of animals are called draft animals (draught animals) or beasts of burden. Most working animals are either service animals or draft animals. They may also be used for milking or herding or the jobs that require human training to cooperate. Some, at the end of their working lives, are also sold to slaughter houses for meat or other products such as leather.

Around the world, millions of animals work in relationship with their owners. Domesticated species are often bred to be suitable for different uses and conditions, especially horses, bullocks, donkeys and elephants. Working animals are usually raised on farms, though some are still illegally captured from the wild, traded and transported in violation of the laws, such as Asian elephants.

People exploit wide variety of abilities found in animals and even in industrialized societies, many animals are still being used for work. The keen sense of smell of dogs and pigs is used to search for drugs and explosives and to search for missing or trapped people. Several animals including camels, oxen/bullocks, donkeys, horses and dogs are used for transport.

13.3 DIFFERENT WORKING ANIMALS IN INDIA

13.3.1 Working Equines

Working equines consists of horses, ponies, mules and donkeys. The total population of horses, ponies, mules and donkeys in India is 0.55 Million as per the latest livestock census (2019). It has decreased by 51.9% over the previous livestock census (2012). Working equines including horses, mules and donkeys are used for various types of work in different parts of India including, urban, semi-urban and rural areas.

a) **Horses:** The horses are generally used for (Fig. 13.2):

- Carrying goods from market to villages and agricultural produce from villages to markets
- Transport of raw bricks in brick-kilns, from site of drying the bricks to the furnaces
- Ferrying people from villages to city areas or to a point from where people can avail mechanized transport
- Transporting tourists and pilgrims at historical or religious places
- Wedding or ceremonial purposes
- Offering joy rides as a part of tourism etc



Fig. 13.2: Working equines

b) **Mules:** Mule is an offspring of a male donkey and a female horse, typically sterile. They are used for carrying bricks at brick-kiln like horses, particularly in northern part of India. Both horses and mules are used for carrying bricks either by pulling loaded carts or on the backpack. Mules are also used by the Indian Army for carrying guns, ammunition and general supply in high altitudes and risky areas.

c) **Ponies:** Small horses called ponies (below 150 cm height) are also used by migratory communities for carrying their household material and young babies of others animals (sheep or goats) on their back from one village or city to another.



Fig. 13.3: Working donkeys

d) **Donkeys:** Generally, donkeys are used to carry goods on their back, using a pack saddle. Donkeys are also used for (Fig. 13.3):

- Carrying earth and raw bricks in brick-kilns
- Carrying building material in narrow lanes of cities which can't be accessed by other mechanized mode of transport
- Carrying sand from rivers
- Carrying household materials and young babies of others animals on their back from one village or city to another by migratory communities
- Transport of goods or building materials by pulling a cart
- Carrying stones from mines etc.

13.3.2 Working Bullocks

A bullock means castrated ox or bull of bovine species (cattle and buffaloes). The total population of bullocks (cattle and buffaloes) in India was 56.68 million as per the latest livestock census (2019). It has decreased by 32.52% over the previous livestock census (2012). Generally bullocks are used for agriculture work such as ploughing and carting in all parts of India and there are many breeds of cattle being used for draught purpose (Fig.13.4). Transport of goods using bullock carts is common in urban areas also. Bullocks are also used to operate sugarcane juice extraction machines, especially in the state of Maharashtra.



Fig. 13.4: Working bullocks

13.3.3 Working Camels

The total population of camels in India was 2.5 Lakhs in 2019, decreased by 37.1% over the previous livestock census (2012). Camels are used for carrying goods in villages as well as in city area (Fig. 13.5). In cities they are used specifically in market yards to carry heavy loads. Generally one camel is hitched to the cart and carries the load. Camels are also used for joy rides at tourist places as well as in public places of cities.



Fig.13.5: Working camels

13.3.4 Working Elephants

The total population of elephants in India was 27,312 in 2019, decreased by 10.98% over the previous census (2012). Elephants are used to carry timbers in north-eastern part of India. They carry timbers from forest to markets in city. They are also used for loading timber onto trucks and unloading them, in states like Kerala, Karnataka and Tamil Nadu. In Southern India, elephants are also kept in temples for rituals and ceremonial purposes and many of them are used for begging in cities too (Fig. 13.6).



Fig.13.6: Working elephants

13.4 CLASSIFICATION OF WORKING ANIMALS

The working animals can be classified into following types based on their roles:

- a) **Transportation Animals:** These animals are used, due to sheer physical strength in tasks such as ploughing. Such animals are grouped as draft or draught animals as follows:
 - o **Riding Animals / Mounts:** These animals include equines such as horses, ponies, donkeys and mules; elephants; yaks and camels.
 - o **Pack Animals:** These may be of the same species as mounts or harness animals such as horses, mules, donkeys and camels.
 - o **Harness Animals:** They are used singly or in teams, to pull (or haul) the wheeled carts, plough or sleds/ sledge and these include the oxen, bullocks, water buffaloes, horses, ponies, mules, donkeys and elephants.
- b) **Searching and Retrieving Animals:** They include hunting dogs (hounds) and dogs for locating humans, such as escaped prisoners and also used to find people who are trapped in avalanches and collapsed buildings (after earth quakes).
- c) **Sniffing Animals:** They include dogs and pigs which have better smell sense than humans, can assist with gathering by finding valuable products such as truffles (a very expensive subterranean mushroom).

- d) **Interfacing and Guardian Animals:** They include assistance animals, such as guide dogs for blind people, and herding animals such as herding dog as livestock or flock guardian (flock of sheep).

Before we proceed, please complete activity 1.

Activity 1 (Observation Study): Look around your city/town/village and enlist the working animals along with what type of work they do? Also try to find out the welfare risks to animals involved in such work. Write your observations.

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Before we proceed, please complete activity 2.

Activity 2 (Web browsing, Discussion and Interpretation): Browse the latest livestock census data on horses, ponies, mules and donkeys and compare it with previous livestock census data.

- What are the population trends for horses, ponies, mules and donkeys?
- What could be the reasons for increase or decrease of horses, ponies, mules and donkeys?

Discuss with your friends and colleagues about its implications for welfare of horses, ponies, mules and donkeys in general and write the outcome.

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Check Your Progress 1

Note: a) Use the spaces given below for your answers.

b) Check your answer with those given at the end of the unit.

1) Name the animals which are commonly used for the work / draught purpose

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2) Write the common uses of the following working animals:

a) *Bullocks:*

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b) *Donkeys*

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c) *Camels*

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d) *Elephants*

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3) What do you mean by working animals?

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13.5 HUSBANDRY SYSTEMS OF WORKING ANIMALS

The term animal husbandry can be referred to the practice of selective breeding and raising the livestock to promote desirable traits in the animals for utility. Working animal's husbandry systems has the following four broad management practices:

- a) Animal breeding
- b) Animal feeding
- c) Animal shelter/ housing
- d) Animal health

Let us discuss them briefly.

13.5.1 Animal Breeding

Animal breeding is controlled propagation of domestic animals in order to improve desirable qualities. Through breeding the genetic quality and behaviour, considered to be advantageous to humans are further developed. Selective breeding involves using knowledge of several branches of science. These include genetics, statistics, reproductive physiology, computer science and molecular genetics. Selective breeding for desired traits was first established as a scientific practice by Robert Bakewell during the British agricultural revolution in the eighteenth century. Zebu cattle breeds, such as Gir, Ongole etc., which are the humped cattle, originating in India, are thought to be the world's oldest domesticated cattle. Khillar breed of bullocks found in southern part of Maharashtra are hardy, well-known for being fast in work and are specifically bred for draught purposes (Fig. 13.7).



Fig. 13.7: (a) Khillar bull (b) Ongole bull (Source: ICAR-NBAGR, Karnal)

13.5.2 Animal Feeding

a) General Principles of Feeding

- i) The good body condition score of a working animal should be between 2.5-3.5 (scale 0 very thin to 5 very fat). Working animal have high daily energy expenditure and require a good quality, high energy diet to maintain body condition. If body condition is to be increased, a reduced workload is usually necessary in addition to a good diet.

- ii) Working animals should be given sufficient resting time with good access to feed. Equine (horses, mules and donkeys) digestive physiology has evolved for grazing up to 16 hours per day. Working animals cannot eat sufficient feed to meet their energy requirements unless given prolonged access to feed while resting. Similarly the ruminants need sufficient time to rest after grazing to chew the cud and for ruminating.
- iii) Water should be offered several times a day to allow rehydration and maximise feed intake and digestive efficiency. A thirsty or dehydrated animal has less desire to eat and reduced digestive efficiency. Free access to water all the time improves appetite, digestion and general health.
- iv) Quality of feed should be the best that the owner can afford. Dirty, dusty or deteriorated food has lower nutritive value, is less palatable and more likely to cause conditions such as colic or impaction and other digestive disorders. Poor quality feed left uneaten, or poorly digested, is a waste of money for the owner.

b) Feeding Requirements

- i) The amount and type of feed offered should be appropriate to the size and work level of the animal. For example, as a general rule, working equines can eat equivalent to 2% of their body weight in dry matter per day, so all of their energy needs must be met within this amount of feed. Feeds vary widely in nutritive value and most working animals need as much access to good quality roughage (hay, grass, legumes) as possible, plus at least two concentrate feeds per day, in order to meet this requirement.
- ii) Owners should be informed about the energy content and nutritional value of different feeds, in order to choose appropriately for their animal. Owners should understand the basic principles of feed quality and energy content. They should be aware that a larger volume of feed offered does not necessarily mean high energy intake.
- iii) The animal should be allowed every day for grazing where possible. For optimal functioning, the gut requires long forage to stimulate normal progression of food through the intestine. Where no grazing land is available, long forage in the form of cut grass, hay, vegetable stalks or good quality straw/ stover should be offered as frequently as possible. Daily access to green fodder provides essential dietary minerals.
- iv) Young, malnourished and sick animals should be offered additional protein, vitamin and mineral sources in their diet. They need supplementation in the form of extra, high quality green fodder (grass or fresh legumes) and concentrates, to meet their increased dietary requirements and allow growth or recovery. Healthy, adult animals can obtain all their amino acid and vitamin needs from a diet that is adequate in energy (carbohydrate), by the action of bacteria in the gut. Vitamins and minerals are to be provided through green fodder feeding.
- v) Advantage should be taken of seasonally available feeds. Seasonal crops and residues can form valuable additional sources of nutrition. Owners and feed sellers should be aware of local, seasonally available foods and their nutritional value.

- vi) Crushing, cracking or rolling grain improves its digestibility. Hence, broken grains must be provided to the animals instead of raw unbroken grains. Feeding grain powders should be avoided as it reduces palatability and increases wastage.
- vii) Dietary changes should be made gradually to avoid digestive disturbances. Sudden changes in the volume or content of the diet can cause colic, diarrhoea or impaction.

c) Feeding Methods

- i) Feed should be offered in a clean container, not directly from the floor. Feeding from the floor increases the risk of food contamination (e.g. from faeces, rodents etc.) and wastage.
- ii) Feed should be clean and free of dust and foreign bodies. It should be stored in a closed container away from dampness, insects and rodents.
- iii) Old food should be removed at least once a day and replaced with fresh feed. Old /stale and left over feed should not be given to the animals as it reduces palatability and increases the risk of contamination.
- iv) Concentrates should be offered in small quantities several times throughout the day. Forage should be offered continuously or as often as possible when the animal is resting.
- v) Horses are grazing animals and have evolved for trickle feeding. Feed intake and digestive efficiency will be maximised by offering small amounts regularly throughout the day.
- vi) Concentrate feeds should be damped to improve palatability and reduce dust inhalation. This is particularly important where nosebags are used for feeding, as in case of equines.
- vii) Feeding/ grazing areas should be kept clear of faeces. Grazing areas contaminated by faeces transmit worms between animals.

An example on feeding of elephants is summarized in Box 13.3.

Box 13.3: Feeding of Elephants

Ensure timely supply of wholesome feed with variety in required quantity to each elephant. Green fodder shall be supplemented by ration as prescribed by the veterinary doctor. The minimum feed supply for an elephant is as follows :

Height of Elephant	Green Fodder
Below 1.59 m (weaned calf)	Not less than 100 kg
1.50 m to 1.80 m	Not less than 150 kg
1.81 m to 2.25 m	Not less than 200 kg
Above 2.25 m	Not less than 250 kg (or 5% of its body weight)

Supply of sufficient quantity of succulent fodder to the elephant shall be ensured during hot climate. The owner or contactor or hirer of the elephant shall provide sufficient potable drinking water to the elephant, preferably from a river or any other source of running water.

13.5.3 Animal Shelter/ Housing

Because of their value, draught animals offer one of the best ways of introducing improved animal husbandry methods to local farmers. A simple shelter would provide the necessary protection from sun and rains. Shelters should have a sloping floor to allow run-off to keep them dry and clean, and dung should be removed frequently to reduce the problem of flies. Good hygiene is essential. More harm than good can be caused by allowing houses or shelters to become dirty. Houses should be periodically disinfected and clean bedding must be provided. Feed and water troughs should be provided in the shelter. They need to be painted with lime and periodically cleaned.

An example on housing of elephants is summarized in Box 13.4

Box 13.4: Housing of Elephants

The owner shall provide a stable (tethering place) in a clean and healthy environment with sufficient shade to keep elephants during their rest period. Each elephant must be ensured a minimum floor area as specified below:-

- Weaned Calf (height below 1.50 m): 5m x 2.5m
- Sub-adult elephant (height 1.50 m to 2.25 m): 7m x 3.5m
- Adult elephant (height above 2.25 m) and Cow elephant with unweaned calf: 9m x 6m

In the case of covered sheds, the height of the structure shall not be less than 5.5m. Corrugated iron sheets or asbestos when used for roofing of elephant stables shall be covered with cooling materials like gunny bags, grass, leaves etc.



Fig.13.8:Housing of elephants (Source: SV Dairy Farm, Tirupati)

13.5.4 Animal Health

As Pearson (1986) stated that the owners must keep in mind that little benefit will be gained from better feeding, training and improved harnessing and implement design if health is neglected. Care is required to prevent stress and subsequent loss of health to ensure the animal can carry out timely work (Fig. 13.9):



Fig. 13.9: Health management practices of equids
(Photo: ICAR- NRC on Equines, Hisar)

- Animals should be groomed (washed and brushed) and inspected daily for wounds, skin infections, signs of harness-rubbing and ticks.
- Hooves should be inspected daily for any nails, thorns or stones stuck into them and trimmed as and when necessary.
- Timely vaccinations against Foot and Mouth Disease (FMD), anthrax, black quarter, haemorrhagic septicaemia, and tetanus are mandatory.
- Vaccinations should be given at a time that work stress does not interfere with the immune response.
- Animals should be tested for tuberculosis, brucellosis, trypanosomiasis, piroplasmiasis, Johne's disease and helminths.
- Cattle can be sprayed strategically against ticks using hand sprays or washing. Routine deworming of animals to prevent the endoparasites such as roundworms, tapeworms and flukes is recommended, particularly where animals are working in wet areas.
- Ectoparasites such as ticks, lice and fleas can be treated with application of ectoparasiticide over the body of the animals by taking all the precautions.
- Brushes should also be cleaned to stop the spread of mange.
- Wounds and scratches can get infected and hence should be washed and antiseptic should be applied regularly till they are completely healed.
- While resting, the bullocks should be applied face halter and should be tied from one side either to face halter or neck rope, but not to nose rope.
- Horn injuries from tight ropes, and neck and shoulder injuries from harnesses can easily be avoided by careful attention to harnessing methods.
- Ropes and harnesses should be cleaned and disinfected regularly.
- Attention should be given to the possible dangers and causes of lameness in the locality where animals work or graze.
- Strains and sprains need complete rest.

Before we proceed, please complete activity 3.

Activity 3 (Visit): Visit any nearby animal shelter or animal owning community having any working animals, enquire about the daily feeding schedule, and note down the feed ingredients and the quantity of each ingredient being offered. Write the outcome.

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Check Your Progress 2

Note: a) Use the spaces given below for your answers.

b) Check your answer with those given at the end of the unit.

1) What do you mean by animal husbandry in the context of working animals?

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2) Name the four broad management practices of working animal's husbandry systems.

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3) What is the optimum body condition score of working animals?

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13.6 PHYSICAL MENTAL AND NATURALNESS ASPECTS OF WELFARE

Human understanding of animals – especially their sentience (Box 13.5) and behavioral needs – is developing all the time.

Box 13.5: Sentience

There is now widespread recognition of the ‘sentience’ of animals, which reinforces the need to protect welfare. The European Union has officially recognized animals to be ‘Sentient Beings’. Sentience implies that animals

- Are aware of their own surroundings
- Have an emotional dimension
- Are aware of what is happening to them
- Have the ability to learn from experience
- Are aware of bodily sensations-pain, hunger, heat, cold etc.
- Are aware of their relationships with other animals
- Have the ability to choose between animals, objects and situations

The physical states of poor welfare are more readily accessible and understandable (particularly for veterinarians, who undertook much of the early work on welfare). But recent studies lead naturally to greater understanding of mental states and needs and nature of animals. This is particularly true of ethological research, including ‘preference testing’ where animals’ preferences are measured and assessed. This may be the reason why earlier definitions of welfare centered on physical states, whereas the latest definitions have reflected the complex, multi-faceted nature of animal welfare.

Welfare is not just absence of cruelty or ‘unnecessary suffering’. It is much more complex and includes the physical, mental and naturalness states of the animals (Fig.13.10).

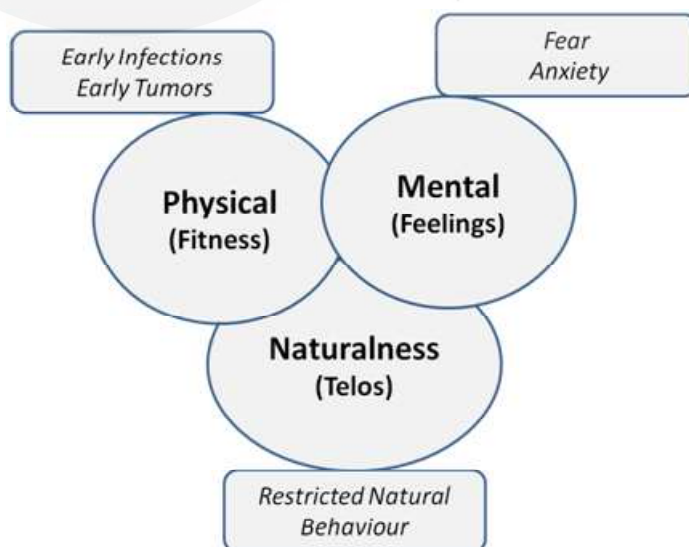


Fig. 13.10: Physical, mental and naturalness states of animal welfare

(Source: *Concepts of Animal Welfare - World Animal Protection, 2012*)

a) Physical State

Traditionally, the definition of animal welfare is centered on the physical state of animals. An animal is in a poor state of welfare only when physiological systems are disturbed to the point that survival or reproduction is impaired (McGlone, 1993). Welfare defines the state of an animal as regards its attempts to cope with its environment (Fraser and Broom). Welfare is only poor when survival or reproduction is impaired by a physical problem. This is a simplistic view of welfare, which is often put forward by the trade to minimise the impact they are having on the welfare of the animals under their care (McGlone, 1993). How an animal copes with its environment. Coping is essentially a reflection of the physical condition of the animal, although mental states may have contributed to this condition (Fraser and Broom).

b) Mental State

Mental states play an important role in welfare. These states are becoming increasingly understood and explored. Neither health nor lack of stress nor fitness is necessary and/or sufficient to conclude that an animal had good welfare. Welfare is dependent upon what animals feel (Duncan).

c) Naturalness

The third state – naturalness – refers to the ability of the animal to fulfill the natural needs and desires. The frustration of not fulfilling harms welfare. This third dimension has been recently recognized and added. Not only will welfare means control of pain and suffering, it also means nurturing and fulfillment of the animals’ nature (Rollin).

Before we proceed, please complete activity 4.

Activity 4 (Visit): Discuss with your friends / colleagues about the physical, mental and naturalness states of working animals. Compare their views with those given in the above section. Write the outcome.

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Note: a) Use the spaces given below for your answers.

b) Check your answer with those given at the end of the unit.

1) What do you understand by sentience?

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13.7 LET US SUM UP

In the first section, we discussed the meaning and concept of working animals and different types of working animals in India – equines, bullocks, camels and elephants. In the next section, we studied the classification of working animals based on the role / type of work they do viz., transportation (riding/mounts; pack; harness), searching and retrieving, sniffing and interfacing and guardian animals. Later we discussed the husbandry systems like breeding, feeding, shelter/housing and animal health. In the last part we discussed the physical mental and naturalness aspects of welfare as applicable to working animals.

(In the next unit, you will be introduced to the welfare issues in working animals)

13.8 KEYWORDS

Animal Husbandry: The term animal husbandry can be referred to the practise of selective breeding and raising the livestock to promote desirable trait in the animals for utility, sports, pleasure or research.

Brick-Kiln: This is also called as brick manufacturing factory i.e. a place where the earth/mud is dug and it is shaped in to a brick and once these bricks get dried in the sun then the raw bricks are transported on the back of donkeys, ponies or by mini-tractors to the furnace where these raw bricks are baked to get the final brick.

Ectoparasite: A parasite that lives on the exterior of its host (e.g. ticks, lice, flea etc).

Endoparasite: A parasite that lives in the internal organs of its host (e.g. tape worm, flukes, round worm, trypanosomes etc).

Harness: A set of straps and fittings by which a horse or other draught animal is fastened to a cart, plough, etc. and is controlled by its driver. In case of horses/ ponies the harness consists of bits (iron bit which is attached to the mouth and mouth piece is attached with the bridle and reins which are held by the rider or driver for guiding the animal), reins, bridle, chest piece, long girth, short girth, saddle/ saddle tree, traces, crouper etc.

Hobbling: To put a device (usually nylon rope) around the legs of a horse, pony or donkey so as to hamper but not prevent movement. It also means to restrict the free movement or activity.

Lameness: Limping by any animal due to some injury on any of the four limbs or the hooves.

Mutilation: Damaging a part (s) of the body of an animal. e.g. mutilation of ear, nose and tails in working animals).

Working Animal: Domesticated animal that is held and trained to perform specific tasks.

Yoke Gall: A yoke gall is a localized acute inflammation (swelling) of the skin on the neck of the bullock due to constant friction caused by the yoke.

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13.10 SELF ASSESSMENT EXERCISES

- 1) What is a working animal? Illustrate the type of work done by bullock, horse/ponies, donkeys, camels and elephants.
- 2) How do you classify the working animals based on their roles?

- 3) What are the various components of animal husbandry system? Briefly describe about the feeding management of the working animals.
- 4) Discuss the interrelationship between physical, mental and naturalness states of working animal welfare.

13.11 ANSWERS / HINTS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) The commonly used work animals are Horses / Ponies / Donkeys, Bullocks, Camels, and Elephants
- 2) (a) Bullocks are commonly used in the agricultural fields for ploughing, for pulling carts loaded with goods. (b). Donkeys could be seen carrying the raw bricks on packsaddle in brick-kilns and cloths when used by washer men community (c) Camels are used for transporting goods on carts. (d) Elephants are occasionally used for logging purposes.
- 3) Working animals, mainly equids, bovids and camelids are draught animals that perform transport and traction activities.

Check Your Progress 2

- 1) Animal husbandry is the practise of selectively breeding and raising the working animals to promote desirable traits in the animals for utility.
- 2) The four broad management practices under working animal's husbandry system are animal breeding, feeding, shelter/ housing, and health.
- 3) The good body condition score of working animal should be between 2.5-3.5 (scale 0 very thin to 5 very fat).

Check Your Progress 3

- 1) Sentience implies that animals are aware of their own surroundings, have an emotional dimension, are aware of what is happening to them, have the ability to learn from experience, are aware of bodily sensations-pain, hunger, heat, cold etc, are aware of their relationships with other animals and have the ability to choose between animals, objects and situations.