

# 10

## A protocol for the welfare of stock on tropical small holder dairy farms

This chapter presents a protocol for the welfare of stock on tropical small holder dairy (SHD) farms.

### The main points of this chapter

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- A protocol is a series of Standard Operating Procedures that describe instructions for any activity or set of tasks undertaken on the farm. Stock, as well as people, perform better when all farm practices are undertaken in a routine manner.
- The protocol in this chapter is based on the 'five basic freedoms' of livestock. They are freedom from hunger, from thirst, discomfort or pain, fear and distress as well as the freedom to express normal behaviour. These form the basic elements of many national and international animal welfare protocols:
  1. Ensure animals are free from hunger and thirst through ready access to fresh water and a diet to maintain full health and vigour to produce healthy productive animals.
  2. Ensure animals are free from discomfort through provision of appropriate shelter and comfortable resting areas to protect animals against extreme climatic conditions and to provide them with a safe environment.
  3. Ensure animals are free from pain, injury and disease by prevention and, when sick, rapid diagnosis and treatment to ensure humane

actions, good sanitary conditions, prompt attention when required and, if necessary, humane destruction.

4. Ensure animals are free from fear and distress by ensuring conditions and treatment that avoids mental suffering and ensures safety of animals and people.
5. Ensure animals are free to express normal behaviour by providing adequate space, proper facilities and the company of other animals to preserve their gregarious and other favourable behavioural traits.

This chapter is the culmination of this manual in that it sets out a protocol for the welfare of stock on SHD farms in the tropics. A protocol is a list of instructions or guidelines on how best to do things to achieve success in the farming venture, which in this case is the dairy enterprise. Although the emphasis is on small holder farms, its principles are equally relevant for larger farms. The protocol is simply a collection of farm management activities called Standard Operating Procedures.

## 10.1 Standard Operating Procedures

A Standard Operating Procedure (SOP) is a formal term used to describe a set of instructions for any activity or set of tasks undertaken in the workplace. It should be described in sufficient detail that any non-skilled person could attempt to undertake it. Such SOPs can be developed to be the most suitable procedures to achieve the most desirable, or the best possible, outcome, in which case they become best management practices (BMP).

It is important to develop SOPs for major farm tasks because on large farms they are likely to be carried out by more than one farm worker. The benefits of SOPs include:

- They lead to consistency even when undertaken by different people.
- Stock perform better if routines do not change.
- People thrive on consistency – they know the instructions to follow on how to do a particular job and what the outcome should be.
- Training new staff is easier as there are carefully documented steps to achieve a specific outcome.
- As they are written down, any member of the farm staff can refresh their memory on how to perform the tasks.
- They can be referred to by managers to follow through any farm activity that did not give the desired outcome.
- They can even be used as legal documents in the case of formal disputes.

Generic SOPs can be developed for any set of tasks but the best ones are those developed in collaboration with the staff (workers and management) who are

actually carrying them out, because they are the ones most familiar with the farm operations and the infrastructure, equipment and methods used on that particular farm.

A simple approach to developing an SOP is as follows:

- Prioritise the areas that would benefit from an SOP, namely, those that would most benefit from a series of clear written protocols.
- Select the most appropriate farm staff to oversee the development of the SOP, obviously those with overall responsibility for that task.
- Ensure that anyone likely to undertake this task is involved in its development.
- Make a list of processes, within the selected area.
- Identify the extent of what the SOP covers and what it does not.
- Give the SOP a specific name.
- Detail its scope within the farming system.
- Additional contents of SOPs can include:
  - Prominently list hazards that exist and precautions that should be taken.
  - Detail any safety equipment or protective clothing required.
  - List all equipment and supplies needed.
  - Detail, in sequence, the steps needed to be taken to achieve the desired outcome.

Once completed, a brief summary of the SOP can be placed in a convenient location, such as on a wall in the cowshed. The more detailed SOP should be located in the farm office, with a copy also in the staff quarters. This should be reviewed, say, every 12 months and updated to remain pertinent to the task.

## 10.2 Animal welfare protocols for dairy stock on tropical small holder farms

The guiding principle and objective of good dairy farming practice is that safe, quality milk should be produced from healthy animals using management practices that are sustainable from an animal welfare, social, economic and environmental perspective. Farmers then need to apply good practice in the following areas of their management:

- Animal health
- Milking hygiene
- Nutrition (feed and water)
- Animal welfare
- Environment
- Socioeconomic management.

To provide a framework to achieve these objectives, the Food and Agriculture Organisation (2011) published their *Guide to good dairy farming practice*. The

essential elements of the animal welfare component of this guide were originally formulated by the International Dairy Federation (2008), based on Brambell's (1965) 'five basic freedoms' of livestock, that have been discussed in Section 8.1.1. Although the guide was written generically for farmers producing milk from any dairy species in any global environment, the animal welfare section provides a good protocol for SHD farmers in the tropics. In so doing, this protocol:

- Highlights relevant aspects that need to be proactively managed on farm.
- Identifies the desired outcomes in dealing with each aspect.
- Specifies good farming practices that address the critical hazards.
- Provides examples of control measures that should be implemented to achieve the objectives.
- Focuses on the desired outcomes rather than on specific prescriptive actions or processes.
- Concentrates on the practices rather than the principles of good animal welfare.

The recommendations for stock welfare protocols form the remainder of this chapter. These protocols do not include any actual numbers, such as minimum recommendations for the length of feeding spaces or the size of resting areas for dairy stock as these often vary with the type of production system (such as tethering v loose housing). They have been discussed fully in this book's earlier chapters and the senior author's previous tropical dairy farming manuals.

### **10.2.1 *Ensure animals are free from hunger and thirst, through ready access to fresh water and a diet to maintain full health and vigour to produce healthy productive animals***

#### **Provide sufficient feed and water for all animals every day**

Dairy livestock should be given sufficient feed, based on their physiological needs. Their requirements will vary according to their age, bodyweight, stage of lactation, production level, growth, pregnancy, activity and environment. Provide enough space around feeding and watering points to reduce bullying and ensure all livestock have sufficient access.

The quality (palatability and nutrient content) of the feed also needs to be considered, based on the animal's dietary requirements. Dietary supplements need to be considered if the ration is unable to meet the animal's nutrient requirements. Animals should be fed a balanced diet and have continual access to clean water.

#### **Adjust farm stocking capacities and/or supplementary feeding to ensure adequate water, feed and fodder supply**

Due consideration should be given to the number of animals, their physiological needs and the nutrient quality of feeds when determining farm stocking capacities. All animals should have access to sufficient water each day.

**Protect animals from toxic plants and other harmful substances**

Protect animals from access to toxic plants and contaminated areas such as farm dumps. Do not feed animals mouldy feeds. Store chemicals securely to avoid contamination of feeds, and observe withholding periods for any pasture or forage that undergoes chemical treatments.

**Provide water supplies of good quality that are regularly checked and maintained**

Animals should have free access to a clean fresh water supply. Regularly clean water troughs or drinkers and inspect them to ensure they are fully functional. The water supply should be adequate to meet peak requirements. Drinkers/water troughs should fill sufficiently quickly to avoid any animals in a group remaining thirsty. All reasonable steps should be taken to minimise the risks of the water supply freezing or overheating, as appropriate. Run-off from effluent and chemical treatments of pasture and forage crops should not enter stock water supplies.

**10.2.2 *Ensure animals are free from discomfort, through provision of appropriate shelter and comfortable resting areas to protect animals against extreme climatic conditions and to provide them with a safe environment*****Design and construct buildings and handling facilities to be free of obstructions and hazards**

Consideration should be given to the free flow of animals when designing and building animal housing and/or milking sheds. Avoid dead ends, and steep and slippery pathways. Ensure dairy buildings are safely wired and properly earthed.

**Provide adequate space allowances and clean bedding**

Avoid overcrowding of animals, even for short periods. Keep animal group sizes manageable and provide adequate feeding and watering space to reduce aggressive competitive behaviours.

Dairy cattle have strong herding instincts. Group animals by similar weight and size if possible. Manage herd introductions to reduce fighting, particularly between mature and intact males.

Provide housed animals with adequate space for resting on comfortable bedding and protected from hard surfaces such as concrete. These areas should be kept clean (e.g. by replacing the bedding frequently). Grazing areas are usually suitable for resting, provided that they are rotated frequently and have adequate drainage.

**Protect animals from adverse weather conditions and the consequences thereof**

As far as practicable, protect animals from adverse weather conditions and the consequences arising from such conditions. This includes stress factors such as

weather extremes, forage shortages, unseasonal changes and others causing cold or heat stress. Consider shade or alternative means of cooling such as misters and sprays. In cold conditions, shelter such as windbreaks and housing, and additional feed should be provided. Permanent shelters with lightning arresters may be warranted in some areas. Have plans to protect dairy animals against emergencies (for example back-up power supplies) and natural disasters (for example fire, drought, snow and flood). Include provision of high ground in case of flood, provide adequate firebreaks and have evacuation provisions.

**Provide housed animals with adequate ventilation**

All animal housing should be adequately ventilated allowing a sufficient supply of fresh air to remove humidity, allow heat dissipation and prevent build-up of gases such as carbon dioxide, ammonia or slurry gases.

**Provide suitable flooring and safe footing in housing and animal traffic areas**

Floors should be constructed to minimise slipping and bruising due to slippery or uneven floors. Excessively rough concrete or surfaces with sharp protrusions and stones can cause excessive wear or penetrations to the sole of the hoof, resulting in lameness. Unsuitable floors may inhibit mounting behaviours and lead to injuries. Protective floor coverings (e.g. rubber matting or other non-slip surfaces) can be used on walkways to reduce hoof abrasions that lead to secondary hoof infections and lameness.

**Protect animals from injury and distress during loading and unloading and provide appropriate conditions for transport**

Transport can pose risks to the welfare of dairy animals. Ensure the loading and unloading facilities are adequate and that water is available in lairage, if appropriate. Ensure the vehicle is suitably constructed to safely contain the animals, has good footing and adequate space allowances. If longer journeys have to be made, careful planning is required to ensure statutory welfare (feed, watering and resting) requirements are met.

**10.2.3 *Ensure animals are free from pain, injury and disease by prevention and, when sick, rapid diagnosis and treatment to ensure humane actions, good sanitary conditions, prompt attention when required and, if necessary, humane destruction*****Have an effective herd health management program in place and inspect animals regularly**

Animals should be regularly checked to detect injury and/or disease. Treatment and preventative herd health management programs should be in place.

**Do not use procedures and processes that cause unnecessary pain**

People carrying out veterinary related tasks should be able to demonstrate competency, especially for procedures that could cause suffering, for example, disbudding/dehorning, castration, etc. Adhere to national regulations with respect to these and other practices (such as hot branding, tail docking, teat amputations and so on). Good hygiene is essential for surgical-type procedures. Consider alternative animal husbandry practices if appropriate.

**Follow appropriate birthing and weaning practices**

Develop an appropriate birthing plan that considers such issues as choice of sire (for ease of birthing); safe birthing facilities and regular checking of animals to ensure prompt, experienced help is provided if required. Newborn animals should be fed colostrum within their first 12 to 24 h of life. Wean young dairy animals once they are consuming sufficient dry feed.

**Have appropriate procedures for marketing young dairy animals**

Calves should not be offered for sale until sufficiently hardy to be transported. Adequate bodyweight and dry navel are good indicators. Appropriate transport conditions stipulated in national welfare regulations or codes of practice should be followed.

**Protect against lameness**

Laneways, yards, milking stalls and housing should be constructed to minimise the incidence of lameness. Regular hoof care management practices should be implemented and the animals' diets adjusted to minimise lameness. Lameness should be investigated to determine underlying causes and treated appropriately. Allow animals to move at their own pace.

**Milk lactating animals regularly**

Establish a regular milking routine appropriate to the stage of lactation that does not overly stress the animals.

**Avoid poor milking practices as they may injure animals**

Poor milking practices can affect animal wellbeing and production. Milking equipment should be well maintained and regularly serviced.

**When animals have to be killed on-farm, avoid unnecessary stress or pain**

When it is necessary to kill sick or diseased animals, or those in pain, it should be done promptly and in such a manner as to avoid unnecessary pain and distress.

#### **10.2.4 *Ensure animals are free from fear and distress by ensuring conditions and treatment that avoid mental suffering and ensure the safety of animals and people***

##### **Consider animal behaviour when developing farm infrastructure and herd management routines**

Good design of facilities that takes into account the natural behaviours of dairy animals can enhance the movement of animals on the farm. It will also benefit the stock handlers as the number of negative interactions will be reduced. Quiet, consistent handling practices using well-designed facilities promote better productivity and safety from reduced fear and stress.

##### **Provide competent stock handling and husbandry skills and appropriate training**

Good stock handling and husbandry skills are key factors in animal welfare. Without competent, diligent farm workers who take good care of animals in their charge, the cows' welfare will be compromised.

A competent operator should be able to:

- recognise whether or not the animals are in good health
- understand the significance of a change in the behaviour of the animals
- know when veterinary treatment is required
- implement a planned herd health management program, such as preventive treatments or vaccination programs when necessary
- implement appropriate animal feeding and grassland management programs
- recognise if the general environment (indoors or outdoors) is adequate to promote good health and welfare
- have management skills appropriate to the scale and technical requirements of the production system
- handle animals compassionately and in an appropriate manner
- anticipate potential problems and take the necessary preventive action.

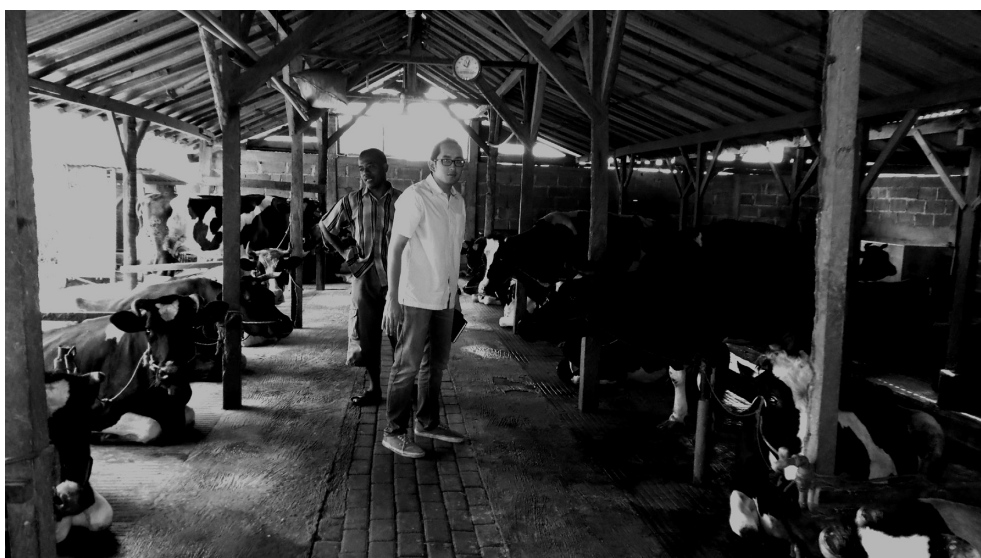
Staff should be familiar with and comply with all relevant national regulations and key industry standards/assurance schemes relating to product quality/safety, etc. Staff should ensure records are maintained to demonstrate compliance with regulations or assurance schemes. People already involved in animal management/husbandry should keep themselves updated on technological developments that can prevent or correct welfare problems.

##### **Use facilities and equipment that are suitable for stock handling**

Ensure the facilities and equipment used to handle the animals are appropriate for the purpose, well designed and maintained. This can avoid injury to both people and the animals. Careful use of equipment can reduce fear in animals and make



**Figure 10.1:** Milk-fed calves should be kept clean and dry with adequate water as well as dry feed and milk. They do not feel isolated because they can easily see each other.



**Figure 10.2:** A typical tropical small holder dairy farm with a low roofed and poorly ventilated shed, permanently tethered stock and no rubber mats.



**Figure 10.3:** These calves have no comfortable place to lie on.

them easier and safer to handle. Monitor the animals' behaviour to identify aspects of the facilities or equipment that may provoke fear or be causing discomfort.

**10.2.5 *Ensure animals are free to express normal behaviour by providing adequate space, proper facilities and the company of other animals to preserve their gregarious and other favourable behavioural traits***

**Have herd management and husbandry procedures that do not unnecessarily compromise the animals' resting and social behaviours**

Dairy stock are gregarious animals (Figure 10.1). Use herd management and husbandry procedures that do not unnecessarily compromise their natural behaviours, such as herding, feeding, reproductive and resting behaviours. This also means sufficient space should be provided for these activities (Figures 10.2 and 10.3). During the daily inspection(s) of animals, check for any abnormal behaviour. Ensure each animal has adequate space to feed appropriately and actually is feeding. Failure to feed may be an early indication of illness in an animal. Mature and intact males should be managed and handled in a manner that promotes good temperament and prevents aggression towards other stock and staff.