

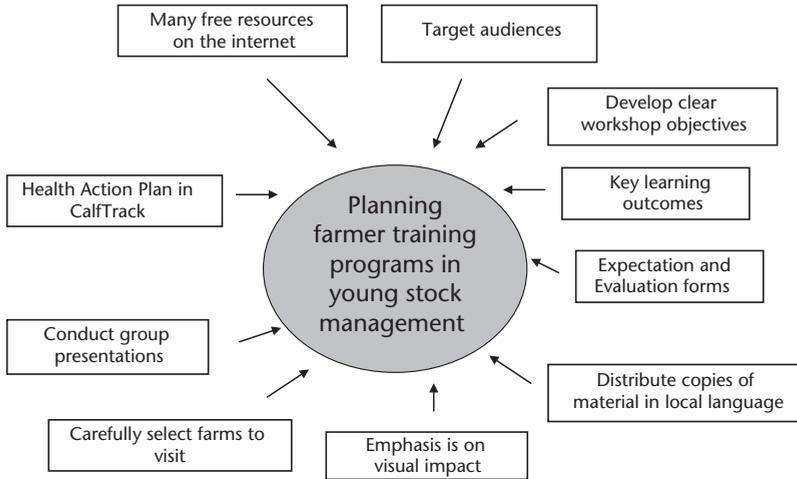
# Conducting training programs on improved young stock management

This chapter presents a framework for workshops on improved young stock management on small holder farms.

## The main points in this chapter

- The target audiences for these workshops can be advisers or farmers, or preferably a combination of the two.
- It is important to develop a clear set of workshop objectives so all participants know why they are there. The key learning outcomes can be selected from this manual.
- Asking participants to complete an expectation form at the beginning and an evaluation form at the end of each workshop, in their local language, helps plan each day's program and provides valuable feedback.
- Distributing copies of all overheads, translated into their local language, prior to the workshop will improve comprehension of the material as it is being presented.
- With farmers, the emphasis should be on visual images followed by practical examples of poor versus good farm practices.
- Farms to visit should be chosen with a specific purpose, such as to demonstrate a particular farming practice or set of practices.
- Conducting group presentations, where small groups prepare and report back on specific aspects of the program, encourages active workshop participation.
- CalfTrack is a comprehensive training program for calf-rearing staff developed by Pennsylvania State University.
- CalfTrack contains a comprehensive health action plan.
- There are many other technical resources freely available on the internet.

This manual provides the topics that could be used in a workshop program specifically for farmers planning to improve their young stock management practices, using Figure 17.1 as a framework. However, farmers, being practical people, learn more from seeing and



**Figure 17.1.** The key elements of workshops on improved young stock management

doing rather than listening and reading. This is called experiential learning. Therefore, to improve their understanding of the principles discussed in this manual, farmers need to be provided with practical examples of these improved management practices.

One key feature of the dairy industry in Australia is regular farmer meetings, where groups of farmers visit other farms, particularly those that have proven to be successful in adopting improved farm practices. To be successful, such ‘farmer discussion groups’ need a clear focus and set of objectives, such as:



Assessing the age of a dairy heifer in Indonesia from its teeth development.

- Why are the discussion groups necessary?
- How is there empowerment of group members and cooperative development within the group?
- How is the subject matter chosen?
- What are the most effective approaches to technology transfer?
- How can each member be guaranteed that they can equally provide input and gain benefits from the meetings?

Such topics are generally outside the scope of this book, but need to be considered to ensure each farmer is rewarded for his time and effort at the group meeting.

The first phase in developing a focus could be to conduct a workshop on improved young stock management on SHD farms. This chapter discusses the planning and implementation of such a workshop to encourage adoption of farm practices to exploit the productive potential of dairy replacement heifers more fully. Such a workshop should include both local advisers and dairy farmers, so advisers can more easily develop follow-up meetings and maybe facilitate a series of farmer discussion groups.

## 17.1 Planning farmer workshops

### 17.1.1 Workshop objectives

1. To provide an understanding of the effect of calf and heifer rearing on long-term dairy cow performance.
2. To understand more fully the key principles behind the transfer of passive immunity via colostrum and rumen development in milk feeding systems for replacement dairy heifer calves.
3. To understand more fully the importance of cleanliness and hygiene during milk rearing on the health and welfare of calves.
4. To understand more fully the importance of setting and achieving growth targets during the post-weaning period of heifer rearing.
5. To develop a simple set of relevant checklists to ensure greater success in young stock management, hence improved profits from the milking herd.

### 17.1.2 Developing a workshop program

Prior to visiting local farms, the participants should be exposed to some of the theories behind the reasons for failure of previous attempts to improve the productivity of replacement heifers on small holder farms. Table 17.1 summarises the topics, discussed in previous chapters of this manual, some or all of which could be considered in the classroom sessions.

In addition to some or all of the pre-determined topics listed in Table 17.1, a session should be incorporated into the last day of the workshop to discuss those topics listed in the expectation forms from workshop participants. It is important that these be covered because farmers (and advisers) may have particular practical issues that they hope can be solved during the workshop.

**Table 17.1.** Suggested topics for a workshop on improved young stock management

<b>Introduction</b>	
Importance of well-grown heifers to Asia's tropical dairy industry	
Cost of poorly reared heifers	
The five key objectives of rearing heifer replacements	
Measures of success in calf and heifer rearing	
<b>Rearing calves to weaning</b>	<b>Growing out weaned calves to first calving</b>
<b>Newborn calf management</b>	<b>The benefits of well-grown heifers</b>
Close up cow care	Improved milk production
Cleanliness of maternity pen	Improved fertility
Observing newborn calves	Reduced age at first calving
Calving problems and assistance	Reduced dystocia
Navel cord dipping	Reduced wastage
Identification and ear tagging	
Weighing and measuring	
<b>Colostrum feeding management</b>	<b>Growth targets</b>
Quality testing	Target milk yields
Antibody transfer	Target live weights
Colostrum storage	Body condition
Feeding colostrum	Target wither heights
Oesophageal feeder	Calculating relative milk yields
<b>Milk feeding management</b>	<b>Effect of age at first calving on farm profitability</b>
Checking milk replacer quality	Reduced rearing costs
Mixing milk replacer	Improved reproductive performance
Feeding whole milk	Greater longevity, hence lifetime production
Feeding method	Reduced need for replacements
	More rapid increase in herd size
	Effects on farm profit
<b>Cleaning and sanitation</b>	<b>Mating management</b>
Cleaning equipment	Onset of puberty
Sanitising equipment	Natural mating
Cleaning and disinfecting housing	Bull management
Chemical handling and safety	Artificial insemination
	Heat detection
<b>Dry feed and weaning</b>	<b>Feeding heifer replacements</b>
Quality calf starter	Nutrient requirements of growing heifers
Feeding calf starter	Testing feed quality
Feeding water	Providing adequate forages
Weaning healthy calves	Supplementing with specific nutrients
	Critical growth periods
	Off-farm rearing schemes

<p><b><i>Calf comfort and housing</i></b></p> <p>Housing evaluation Bedding maintenance Handling and restraint</p>	<p><b><i>Disease prevention and health management</i></b></p> <p>Preventing diseases through vaccination Internal parasites External parasites Mastitis Johne's disease Nutritional diseases Developing a health management protocol</p>
<p><b><i>Communicate with your calves</i></b></p> <p>What makes a good calf rearer? Using all your senses Understanding calf 'language' Visual signs of calf stress and sickness How calves react to people Calf welfare</p>	<p><b><i>Economics of heifer rearing</i></b></p> <p>Costs of farm inputs, including labour Economic implications of reducing farm inputs Dairy beef production</p>
<p><b><i>Calf health</i></b></p> <p>Environment assessment Daily health checks Identifying calf sour Identifying respiratory diseases Evaluating general appearance Taking a calf's temperature Dehydration and electrolyte fluid replacers Giving injections and handling vaccines Dehorning and removing extra teats What do you do with sick calves? Maintaining a healthy calf shed</p>	<p><b><i>Developing a checklist for rearing heifers</i></b></p> <p>The 'golden rules' of heifer rearing Recording the most important results of good management Best management practices in heifer rearing</p>
<p><b><i>Economics of calf rearing</i></b></p> <p>Cost of feed inputs Other costs of calf rearing The high cost of disease What makes a good calf-rearing system?</p>	
<p><b><i>Developing a checklist for rearing calves</i></b></p> <p>The 'golden rules' of calf rearing Recording the most important results of good management Best management practices in calf rearing</p>	

In a 3-day workshop, the farm visits could be planned for day 2, to break up the program and provide a full day to discuss the key aspects of improved young stock management. Associated with the farm visits could be a series of small group presentations in which several participants could be given a specific topic to discuss with

the farmer being visited, asked to spend time on returning to the classroom to prepare a short (5- or 10-min) presentation, then deliver it in front of all the participants. This will focus the participants on a specific farm activity during the farm visit. For example, different groups could be asked to assess the farmer on the five key topics of a farm audit on young stock management as presented in Chapter 16 of this manual.

### 17.1.3 Practical issues when planning the workshop program

The workshop material will differ depending on the key audience and following discussions with extension specialists in the various countries for which the program is to be designed. As well as a simple set of PowerPoint presentations, technical workshops for government advisers and trained herd managers could include distribution and discussion of this manual.

Examples of expectation forms to be filled in by each participant at the beginning, and evaluation forms at the completion of workshops are presented in Appendix 4. These are very important, firstly, because workshop participants may not all be aware of the workshop's emphasis on improved young stock management practices and, secondly, this can help plan an 'open session' on the last day to discuss specific issues on dairy production technology.

Prior to the workshop, each participant should receive copies of all the PowerPoint overheads translated into their local language. This is important for ease of comprehension during their presentation and to provide pages for writing down additional notes during the workshop. At the close of each workshop, participants could each be presented with a certificate of attendance.

During the workshops, participants can be offered small gifts, such as Australian souvenirs, as rewards for individual oral presentations or as gifts for farmers who opened up their farm (and books) for participants to visit. Government workshop organisers could also receive similar gifts.

It is important to involve participants in the workshops in addition to them listening to and discussing course material. Conducting group presentations, where small groups prepare and report back on specific aspects of young stock management, encourages active participation in the workshops. It also provides opportunities for public speaking, which many may have not been asked to do previously. In addition, it gives a 'local flavour' to the workshop, which is very valuable for the presenters as well as to the participants.

### 17.1.4 Associated farm visits

A key element of any farmer workshop is a series of farm visits, preferably to farms with different levels of young stock management, so participants can see for themselves what constitutes poor and good farm practices. It is one thing to develop a series of best management practices (BMP), and another thing to see attempts to adopt them, but, of greatest importance, understand the reasons why farmers fail to achieve them. Failure could be due to:

- ignorance: farmers don't know about them
- lack of resources: farmers don't have the money or facilities to adopt them



Dairy advisers from Thailand collating information from a farm visit.

- lack of incentives: farmers don't see the need to want to adopt them
- lack of service provided by government advisers or local agribusiness providers.

Unfortunately, many of these BMPs are like insurance policies in that farmers take the attitude that 'if it isn't broken, you don't need to fix it', particularly if it costs money to modify facilities or purchase additional equipment. Such issues should be discussed back in the classroom following the farm visits.

It is important to select farms to visit based on the high quality of their young stock management and the good record keeping of the farmer. Farmers will learn much from seeing a well-managed calf shed and heifer unit, particularly when the farmer can discuss the costs and returns from his system.

Including a veterinarian in the group will allow more discussion of the major diseases affecting young stock, with the aim of developing a simple set of guidelines for BMP, much the same as the 'golden rules' discussed at the workshop.

Selection of suitable farms is therefore paramount when planning the visits. Close proximity to the workshop venue is important. Each farm should be chosen with a specific purpose, such as to demonstrate a particular farming practice or set of practices. Ideally, farmers should have good records so they can provide useful background on these observed practices, such as their costs of calf and heifer rearing. Selected farmers should obviously not be intimidated by large groups of inquisitive visitors. Inviting farmers back to the workshop is useful so they can further explain their management decisions during the debriefing session.

As previously mentioned, forming small groups of workshop participants with specific tasks allows a lot more information to be collected on farm than if the visit was less structured. These groups could meet back in the classroom to prepare a short presentation summarising their observations and interpretations.

Throughout South and East Asia, management of young stock rarely receives adequate attention, with the acceptance of very high calf and heifer mortality (15–25%) as ‘normal’. Therefore this is one area where a little more attention to detail can pay large dividends. Such a change in approach should naturally follow on from a better understanding of the theories behind, and the practicalities of, improved calf and heifer rearing.

## 17.2 CalfTrack: calf management training system

CalfTrack is a comprehensive training program developed by Dr Jud Heinrichs and his team from Pennsylvania State University (Heinrichs 2002). The training package provides a series of documents, namely:

- **Trainer’s guide:** a 70-page comprehensive review of calf-rearing principles.
- **Chore plan:** a loose-leaf set of instructions for the many tasks of calf care.
- **Score guide:** this provides score cards for different descriptions of scours, respiratory observations and general calf appearance (see Table 17.2) to develop a colour-coded ‘total daily score’ for the health status of each calf. It also allows for the weekly recording of the average daily concentrate intake.
- **Individual calf records:** this allows for recording the animal health observations for each calf every day for 8 weeks, together with space for managers’, veterinarians’ and employees’ hand-written notes.
- **Compact disc of all the printed material:** this allows for the printing of blank individual calf records for each calf.
- **Orientation video:** this outlines the entire training program, as well as providing a 25-min video with excellent visual descriptions of many aspects of calf care.

The training program is separated into seven components, namely:

1. Newborn calf management.
2. Colostrum management.
3. Liquid feed management.
4. Cleaning and sanitation.
5. Dry feed and weaning.
6. Calf comfort.
7. Calf health.

Key features of some of these components are presented below.

### 17.2.1 Newborn calf records

The following information can be recorded for each calf after it is born:

### Calf information

- initials of staff recording the data
- calf's and dam's identification numbers
- date and time of birth
- calving difficulty from 1 to 5; 1, no assistance; 2, minor assistance; 3, hard manual assistance; 4, mechanical extraction; 5, caesarean section
- birth weight
- if the navel was dipped in iodine solution
- date and live weight when calf was weaned.

### Feeding information

- colostrum feeding: time fed, quantity, quality, fresh or frozen
- amount of milk or milk replacer to feed
- amount of starter grain to feed.

## 17.2.2 Animal health records

The coded scoring system allows staff to assess the health status of any calf quickly and accurately using the descriptors in Table 17.2.

The total daily score is then calculated from the sum of the three scores in Table 17.2. In addition, each calf can be allocated a daily colour code as shown in Table 17.3.

The colour code provides a daily visual indication of the health status of each calf, which can be used to plan further veterinary action as described in Figure 17.2. Based on this action plan, the 'follow ups' can range from:

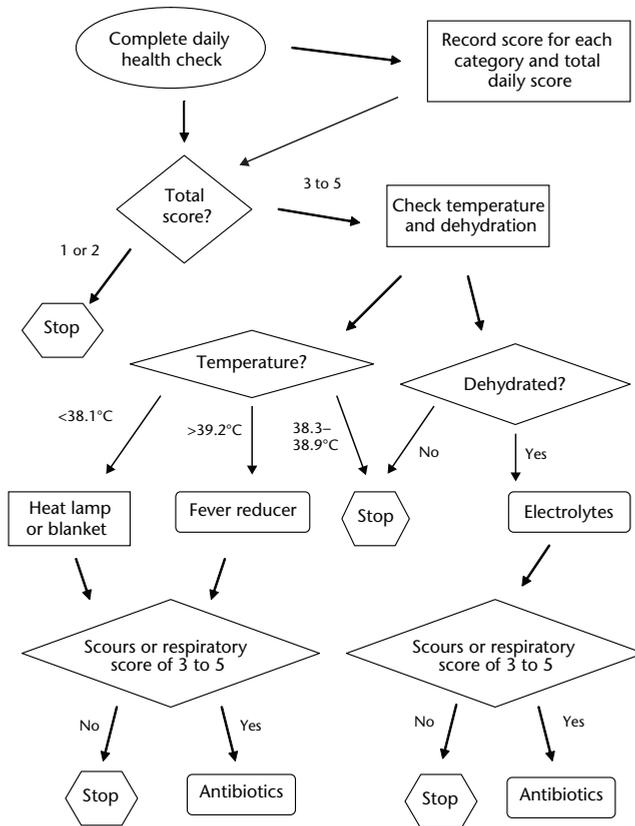
**Table 17.2.** Descriptors for scoring calves on scours, respiration observations and general appearance

Score	Scours	Respiratory observations	General appearance
1	Normal consistency, brown to light colour, normal odour	Normal (no cough, slow breathing)	Normal, alert, bright eyes, ears up
2	Soft to loose consistency, yellow, brown or green colour, mucus, slight odour	Slight cough, runny nose, watery eyes, slow and normal breathing	Slightly off, droopy ears
3	Loose to watery consistency, yellow or green colour, mucus, strong odour	Moderate cough, runny nose, watery eyes, rapid breathing	Moderately depressed, head and ears droop, dull or sunken eyes, lethargic
4	Watery consistency, yellow, green or clear colour, mucus, slight blood, strong odour	Moderately severe and very frequent cough, mucus discharge from nose, watery eyes, rapid panting	Moderately severe depression, head and ears droop, dull sunken eyes, will not rise
5	Watery consistency, clear colour, mucus, bloody	Severe and chronic cough, irregular, weak to rapid breathing, eyes rolling, mucus discharge from nose	Severe depression, flat on side

**Table 17.3.** Allocating a colour code to the daily scores

Sum of three scores	Total score	Colour code
4 or less	1	Green
5	2	Blue
6	3	Yellow
7	4	Orange
8 or more	5	Red

- no further action required
- farm staff providing heat lamp or blanket for calves with body temperatures below 38.1°C
- farm staff administering fever reducers for calves with body temperatures above 39.2°C
- farm staff administering electrolytes to treat dehydration
- veterinarian administering antibiotics for severe scours or respiratory problems.



**Figure 17.2.** The CalfTrack health action plan based on individual scores for scouring, respiratory observations and general calf appearance

## 17.3 Additional training material on the internet

There is considerable technical material on calf and heifer rearing available on the internet. Much of it is free and can be regularly subscribed to.

### 17.3.1 Attica Veterinary Association

This is an American veterinary website which makes freely available, excellent monthly newsletters dealing specifically with dairy calf feeding and management. In addition to back issues of the newsletters, the website contains a link to sourcing a CD on calf rearing, called 'Calf Manager' at <<http://www.atticacows.com/orgMain.asp?orgid=30&storyTypeID=&sid=&>>.

Calf Manager contains many newsletters and booklet on calf rearing, which include:

1. Calving Ease (56 articles written by Dr Sam Leadley): <<http://www.atticacows.com/orgMain.asp?orgid=11&storyTypeID=&sid=&>>.
2. Calf Management Facts (87 articles written by Dr Sam Leadley): <<http://www.atticacows.com/orgMain.asp?orgid=19&storyTypeID=&sid=&>>.
3. Calf Notes (108 articles written by Dr Jim Quigley): <<http://www.calfnotes.com>>.
4. Feeding the newborn dairy calf, an extension manual written by staff at Pennsylvania State University (Heinrichs and Jones 2002): <<http://www.cas.psu.edu>>.

### 17.3.2 US Dairy Calf and Heifer Association

This association has a weekly newsletter as well as many technical bulletins: <<https://calfandheifer.site-ym.com/>>.

### 17.3.3 Calf and Heifer Adviser

This newsletter is produced by the US magazine *Dairy Herd Management*. It can be sourced at <[www.dairyherd.com/adviser/subscribe.htm](http://www.dairyherd.com/adviser/subscribe.htm)>.

It contains an extensive library of calf and heifer technical material.

### 17.3.4 Dairy Australia

Dairy Australia has an extensive collection of calf-rearing material. It is all freely available at <<http://www.dairyaustralia.com.au/Animals-feed-and-environment/Animal-welfare/Calf-welfare/Rearing-healthy-calves-manual.aspx>>.

This page intentionally left blank