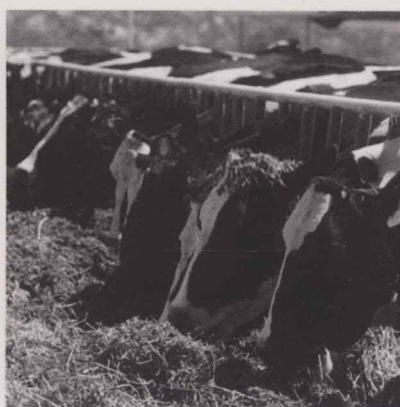
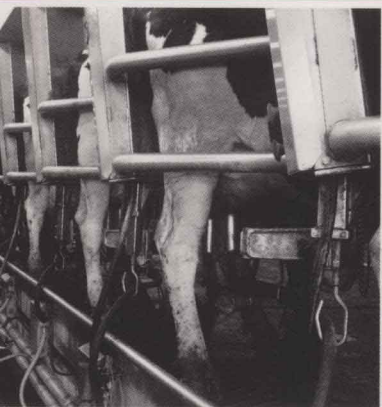


FAO ANIMAL PRODUCTION AND HEALTH



guidelines

GUIDE TO GOOD
DAIRY FARMING PRACTICE



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GUIDE TO GOOD DAIRY FARMING PRACTICE



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Foreword

Dairy farmers' production systems worldwide need to be able to combine profitability with the responsibility of protecting human health, animal health, animal welfare and the environment. Dairy farmers, as the primary producers in the supply chain, should also be given the opportunity to add value to their product by adopting methods of production that satisfy the demands of processors and customers.

This Guide gives individual dairy farmers proactive guidance on how these objectives can be achieved on their farm.

The *Guide to good dairy farming practice* has been written in a practical format for dairy farmers engaged in the production of milk from any dairy species. When adopted, it will support the production and marketing of safe, quality-assured milk and dairy products. The Guide focuses on the relationship between consumer safety and economic, social and environmental management at the farm level.

The Guide contains many individual practices that contribute to good dairy farming practice, covering the key aspects of animal health, milk hygiene, nutrition, welfare, the environment and socio-economic management.

These practices have been drawn from best practice guidelines and existing assurance schemes around the world, and so individual practices will vary in their applicability to various dairying regions. They are not intended to be legally binding and readers are encouraged to select and implement those guidelines that are of relevance to their situation.

As such, this Guide aims to provide a genuine framework for dairy farm assurance schemes to be developed globally, giving individual countries and dairy farmers the opportunity to develop schemes that are specific to their needs.

MISSION STATEMENT

To elaborate a practical, farm orientated, globally achievable *Guide to good dairy farming practices for dairy farmers*, covering key aspects of dairy farm management including: animal health, milk hygiene, animal nutrition, animal welfare, the environment and socio-economic management.

Helen Dornom

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Introduction

A BASIS IN GOOD AGRICULTURAL PRACTICE (GAP)

Good Agricultural Practice for dairy farmers is about implementing sound practices on dairy farms – collectively called *Good Dairy Farming Practice*.

These practices must ensure that the milk and milk products produced are safe and suitable for their intended use, and also that the dairy farm enterprise is viable into the future, from the economic, social and environmental perspectives.

Most importantly, dairy farmers are in the business of producing food for human consumption so they must be confident in the safety and quality of the milk they produce. Good dairy farming practice underpins the production of milk that satisfies the highest expectations of the food industry and consumers.

The international framework to ensure the safety and suitability of milk and milk products is contained in the Codex Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1- 1969, Rev. 4, 2003)¹ together with the Codex Code of Hygienic Practice for Milk and Milk Products (CAC/RCP 57-2004)². This Guide picks up the principles within these documents that relate to the production of milk on farms. It recognises that dairy farmers are an integral part of a larger dairy food production and processing chain and that all participants in the chain - dairy farmers, suppliers to dairy farmers, milk carriers and haulers, dairy product and food manufacturers, distributors, retailers and consumers - should be part of an integrated food safety and quality assurance management system. Dairy farmers can play their part by ensuring that good dairy farming practices are implemented at the farm level.

Good dairy farming practice also ensures that the milk is produced by healthy animals in a manner that is sustainable and responsible from the animal welfare, social, economic and environmental perspectives. So implementing good dairy farming practice is good risk management for the short and long term future of the dairy farming enterprise. This Guide encourages dairy farmers to adopt 'proactive' preventative practices rather than waiting for problems to occur.

In summary, this Guide details Good Agricultural Practice (GAP) for dairy farmers, underpinning the production of safe, quality-assured dairy products in a sustainable manner that underpins the future of dairy farming on a local, national and international scale.

¹ Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1 – 1969. Available at www.codexalimentarius.net

² Code of Hygienic Practice for Milk and Milk Products, CAC/RCP 57 - 2004. Available at www.codexalimentarius.net

ABOUT THIS GUIDE

Many dairy companies/cooperatives and countries have introduced on-farm safety and quality assurance programmes aimed at assuring the safety and quality of their dairy products.

The objective of this document is to provide a farmer-orientated guide to practices that are achievable in the diverse range of dairy farming systems used around the world. The approach taken in this guide is to:

- highlight relevant aspects that need to be proactively managed on dairy farms;
- identify the desired outcomes in dealing with each of these areas;
- specify good practice that addresses the critical hazards; and
- provide examples of control measures that should be implemented to achieve the objectives.

This Guide is intended as a resource for dairy farmers, to be used or implemented in a way that is relevant to their particular farming system. The focus is on the desired outcomes, rather than on specific, prescriptive actions/processes. The guide does not have any legal status and does not supersede national or international requirements.

OBJECTIVE AND SCOPE

The guiding objective for 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.

To achieve this objective, dairy farmers should apply good practice in the following areas:

- animal health;
- milking hygiene;
- nutrition (feed and water);
- animal welfare;
- environment; and
- socio-economic management.

For each of these categories this Guide lists good dairy farming practices, and suggests measures that can be implemented to achieve the desired outcome.

OTHER REFERENCES OF RELEVANCE

In developing this Guide, reference was made to a number of sources; including international publications from Codex Alimentarius (CODEX), Food and Agriculture Organisation of the United Nations (FAO), International Dairy Federation (IDF), World Organisation for Animal Health (OIE), Sustainable Agriculture Initiative (SAI) as well as a number of on-farm assurance programmes from various countries.

In particular, when developing individual, company or country-specific guidelines for good dairy farming practices (or on-farm quality assurance programmes), reference should be made to the following documents:

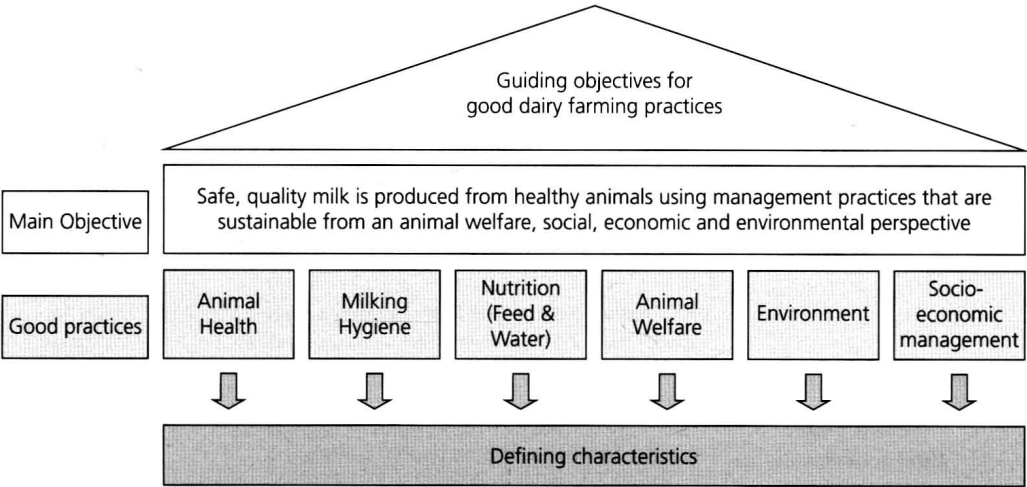
- Codex Alimentarius: Food Hygiene - The Basic Texts (4th ed)³.
- Codex Alimentarius: Recommended International Code of Practice – General Principles of Food Hygiene CAC/RCP 1 – 1969³.

- Codex Alimentarius: Code of Hygienic Practice for Milk and Milk Products CAC/RCP 57 - 2004³.
- Codex Alimentarius: Code of Practice on Good Animal Feeding CAC/RCP 54-2004³.
- FAO: Food Quality and Safety Systems – A training manual on food hygiene and the Hazard Analysis and Critical Control Point (HACCP) system (1998)⁴.
- OIE: Terrestrial Animal Health Code⁵.
- SAI Platform: Principles and Practices for Sustainable Dairy farming (2009)⁶.

HOW THE GUIDELINES ARE PRESENTED

The Guidelines are presented in two forms:

1. Good dairy farming practices and suggested measures are set out in tabular form for each key area: animal health, milking hygiene, animal nutrition, animal welfare, environment and socio-economic management.
2. Individual Fact Sheets are provided for each area giving further details on how to implement the good dairy farming practices.



³ Available at www.codexalimentarius.net
⁴ Available from www.fao.org
⁵ Available from www.oie.int
⁶ Available from www.saiplatform.org

Good dairy farming practices

1. ANIMAL HEALTH

Animals that produce milk need to be healthy and an effective health care programme should be in place.

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
1.1 Establish the herd with resistance to disease	1.1.1 Choose breeds and animals well suited to the local environment and farming system 1.1.2 Determine herd size and stocking rate based on management skills, local conditions and the availability of land, infrastructure, feed, and other inputs 1.1.3 Vaccinate all animals as recommended or required by local animal health authorities	Enhance herd disease resistance / reduce stress
1.2 Prevent entry of disease onto the farm	1.2.1 Only buy animals of known health status (both herd and individual animals) and control their introduction to the farm using quarantine if indicated 1.2.2 Ensure animal transport on and off the farm does not introduce disease 1.2.3 Monitor risks from adjoining land and neighbours and have secure boundaries 1.2.4 Where possible, limit access of people and wildlife to the farm 1.2.5 Have a vermin control programme in place 1.2.6 Only use clean equipment from a known source	Maintain farm biosecurity Keep animals healthy Comply with international/ national/regional animal movement and disease controls
1.3 Have an effective herd health management programme in place	1.3.1 Use an identification system that allows all animals to be identified individually from birth to death 1.3.2 Develop an effective herd health management programme focused on prevention that meets farm needs as well as regional and national requirements 1.3.3 Regularly check animals for signs of disease 1.3.4 Sick animals should be attended to quickly and in an appropriate way 1.3.5 Keep sick animals isolated 1.3.6 Separate milk from sick animals and animals under treatment 1.3.7 Keep written records of all treatments and identify treated animals appropriately 1.3.8 Manage animal diseases that can affect public health (zoonoses)	Detect animal diseases early Prevent spread of disease among animals Ensure food safety Ensure traceability
1.4 Use all chemicals and veterinary medicines as directed	1.4.1 Only use chemicals approved for supply and use under relevant legislation 1.4.2 Use chemicals according to directions, calculate dosages carefully and observe appropriate withholding periods 1.4.3 Only use veterinary medicines as prescribed by veterinarians 1.4.4 Store chemicals and veterinary medicines securely and dispose of them responsibly	Prevent occurrence of chemical residues in milk

2. MILKING HYGIENE

Milk should be harvested and stored under hygienic conditions. Equipment used to harvest and store milk should be suitable and well maintained.

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
2.1 Ensure milking routines do not injure the animals or introduce contaminants* into milk	2.1.1 Identify individual animals that require special milking management	Prepare animals for hygienic milking
	2.1.2 Ensure appropriate udder preparation for milking	Use suitable, well maintained and clean equipment for milking and milk storage
	2.1.3 Milk animals regularly using consistent milking techniques	Avoid contaminants in milk
	2.1.4 Segregate milk harvested from sick or treated animals for appropriate disposal	
	2.1.5 Ensure milking equipment is correctly installed and maintained	
	2.1.6 Ensure a sufficient supply of clean water	
2.2 Ensure milking is carried out under hygienic conditions	2.2.1 Ensure housing environment is clean at all times	Harvest milk under hygienic conditions
	2.2.2 Ensure milking area is kept clean	
	2.2.3 Ensure the milkers follow basic hygiene rules	
	2.2.4 Ensure milking equipment is cleaned and, when necessary, disinfected after each milking	
2.3 Ensure milk is handled properly after milking	2.3.1 Ensure milk is cooled or delivered for processing within the specified time	Minimise spoilage of milk after harvesting
	2.3.2 Ensure milk storage area is clean and tidy	Refrigerate and store milk under hygienic conditions
	2.3.3 Ensure milk storage equipment is adequate to hold milk at the specified temperature	
	2.3.4 Ensure milk storage equipment is cleaned and when necessary, sanitised after each milk collection	
	2.3.5 Ensure unobstructed access for bulk milk collection	

*A contaminant is defined as any biological or chemical agent, foreign matter, or other substance, not intentionally added to food, that may compromise food safety or suitability.

3. NUTRITION (FEED AND WATER)

Animals need to be fed and watered with products of suitable quality and safety.

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
3.1 Secure feed and water supplies from sustainable sources	3.1.1 Plan ahead to ensure that the herd's feed and water requirements are met	Provide the herd with adequate feed and water
	3.1.2 Implement sustainable nutrient, irrigation and pest management practices when growing feed	Limit the potential impact of dairy feed production on the environment
	3.1.3 Source farm inputs from suppliers implementing sustainable systems	
3.2. Ensure animal feed and water are of suitable quantity and quality	3.2.1 Ensure the nutritional needs of animals are met	Keeping animals healthy with good quality feed
	3.2.2 Ensure the feed fed to dairy animals is fit for purpose and will not negatively impact the quality or safety of their milk or meat	Preserve water supplies and animal feed materials from chemical contamination
	3.2.3 Ensure suitable quality water is provided and the supply is regularly checked and maintained	Avoid chemical contamination due to farming practices
	3.2.4 Use different equipment for handling chemicals and feed stuffs	
	3.2.5 Ensure chemicals are used appropriately on pastures and forage crops and observe withholding periods	
	3.2.6 Only use approved chemicals for treatment of animal feeds or components of animal feeds and observe withholding periods	
3.3. Control storage conditions of feed	3.3.1 Separate feeds intended for different species	Prevent microbiological or toxin contamination or unintended use of prohibited feed ingredients or feeds contaminated with chemical preparations
	3.3.2 Ensure appropriate storage conditions to avoid feed spoilage or contamination	
	3.3.3 Reject mouldy or sub-standard feed	Keeping animals healthy with good quality feed
3.4. Ensure the traceability of feedstuffs brought on to the farm	3.4.1 Where possible, source animal feed from suppliers having an approved quality assurance programme in place	Quality of the feeds fed to dairy animals is assured by the supplier or farmer
	3.4.2 Keep records of all feed or feed ingredients received on the farm	Prevent the use of feeds that are unsuitable for dairy animals

4. ANIMAL WELFARE⁷

Animals should be kept according to the following 'five freedoms'⁸:

- Freedom from thirst, hunger and malnutrition
- Freedom from discomfort
- Freedom from pain, injury and disease
- Freedom from fear
- Freedom to engage in relatively normal patterns of animal behaviour

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
4.1 Ensure animals are free from thirst, hunger and malnutrition	4.1.1 Provide sufficient feed and water for all animals every day 4.1.2 Adjust stocking rates and/or supplementary feeding to ensure adequate water, feed and fodder supply 4.1.3 Protect animals from toxic plants and other harmful substances 4.1.4 Provide water supplies of good quality that are regularly checked and maintained	Healthy, productive animals
4.2 Ensure animals are free from discomfort	4.2.1 Design and construct buildings and handling facilities to be free of obstructions and hazards 4.2.2 Provide adequate space allowances and clean bedding 4.2.3 Protect animals from adverse weather conditions and the consequences thereof 4.2.4 Provide housed animals with adequate ventilation 4.2.5 Provide suitable flooring and footing in housing and animal traffic areas 4.2.6 Protect animals from injury and distress during loading and unloading and provide appropriate conditions for transport	Protection of animals against extreme climate conditions Provide a safe environment
4.3 Ensure animals are free from pain, injury and disease	4.3.1 Have an effective herd health management programme in place and inspect animals regularly 4.3.2 Do not use procedures and practices that cause unnecessary pain 4.3.3 Follow appropriate birthing and weaning practices 4.3.4 Have appropriate procedures for marketing young dairy animals 4.3.5 Protect against lameness 4.3.6 Milk lactating animals regularly 4.3.7 Avoid poor milking practices as they may injure dairy animals 4.3.8 When animals have to be euthanized on-farm, avoid unnecessary stress or pain	Justified and humane actions Good sanitary conditions Prevention of pain, injury and disease Prompt treatment of pain, injury and disease Humane destruction of badly injured or incurably diseased animals
4.4 Ensure animals are free from fear	4.4.1 Consider animal behaviour when developing farm infrastructure and herd management routines 4.4.2 Provide competent stock handling and husbandry skills and appropriate training 4.4.3 Use facilities and equipment that are suitable for stock handling	Animals are less fearful of people, their handling facilities and their environment. Safety of animals and people
4.5 Ensure animals can engage in relatively normal patterns of animal behaviour	4.5.1 Have herd management and husbandry procedures that do not unnecessarily compromise the animals' resting and social behaviours	Freedom of movement Preserve gregarious behaviour and other behaviours, such as preferred sleeping position

⁷ For more details on Animal Welfare, please refer to the IDF Guide to Good Welfare in Dairy Production 2008 www.fil-idf.org

⁸ Adapted from the 'Five Freedoms', Farm Animal Welfare Council, U.K. www.fawc.org.uk

5. ENVIRONMENT

Milk production should be managed in balance with the local environment surrounding the farm.

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
5.1 Implement an environmentally sustainable farming system	5.1.1 Use farm inputs such as water and nutrients efficiently and sustainably	Dairy farming practices meet statutory and community expectations
	5.1.2 Minimise the production of environmental pollutants from dairy farming	
	5.1.3 Manage livestock to minimise adverse environmental impacts	
	5.1.4 Select and use energy resources appropriately	
	5.1.5 Maintain and/or encourage biodiversity* on the farm	
5.2 Have an appropriate waste management system.	5.2.1 Implement practices to reduce, reuse or recycle farm waste as appropriate	Limit the potential impact of dairy farming practices on the environment
	5.2.2 Manage the storage and disposal of wastes to minimize environmental impacts	Dairy farming practices comply with relevant regulations
5.3 Ensure dairy farming practices do not have an adverse impact on the local environment	5.3.1 Contain dairy runoff on-farm	Minimise the impact of milk production on the local environment Present a positive image of dairy farming
	5.3.2 Use agricultural and veterinary chemicals and fertilisers appropriately to avoid contamination of the local environment	
	5.3.3 Ensure the overall appearance of the dairying operation is appropriate for a facility in which high quality food is harvested	

* Biodiversity or 'biological diversity' relates to the number of different life forms in an ecosystem. In the farm context it relates to the variation in life (animal, plant and other life forms) inhabiting the farm.

6. SOCIO-ECONOMIC MANAGEMENT

Dairy farming provides economic and social benefits to farmers and their wider communities. Good dairy farming practice can also help to manage the social and economic risks to the enterprise.

Good dairy farming practice	Examples of suggested measures to achieve good dairy farming practice	Objectives of these measures
6.1 Implement effective and responsible management of human resources	6.1.1 Implement sustainable work practices	Ensure personal workloads are sustainable
	6.1.2 Employ staff based on national laws and practice	Improve labour productivity
	6.1.3 Manage human resources effectively, ensuring that their working conditions comply with applicable laws and international conventions	Protect dairy staff from exploitation
	6.1.4 Ensure the farm working environment complies with relevant occupational health and safety requirements	Limit risks to staff, livestock and infrastructure Ensure farming enterprise is socially responsible
6.2 Ensure farm tasks are carried out safely and competently	6.2.1 Have appropriate procedures and equipment in place for undertaking dairy farming tasks	Limit risks to staff, livestock and infrastructure
	6.2.2 Induct and train/educate staff appropriately for their work	
	6.2.3 Ensure staff carry out their tasks competently	
	6.2.4 Choose competent people for training, advice and interventions	
6.3 Manage the enterprise to ensure its financial viability	6.3.1 Implement financial management systems	Improve profitability
	6.3.2 Adopt agricultural practices that contribute to the productivity and/or profitability goals of the enterprise	Limit risks to financial viability of enterprise
	6.3.3 Plan ahead to manage financial risks	

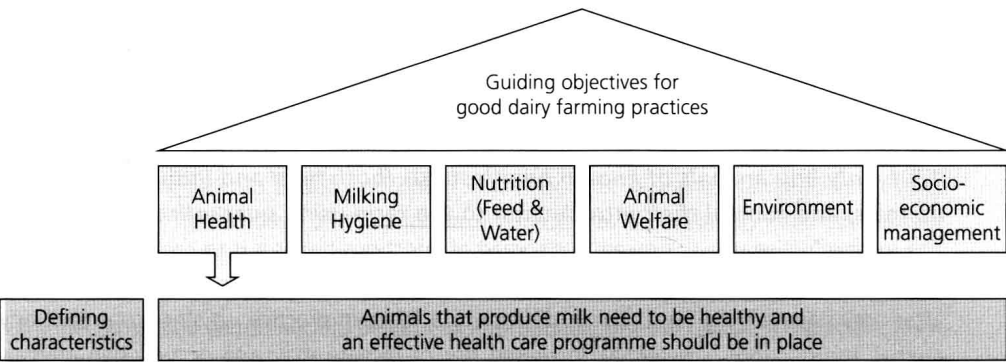
Fact sheets

1. ANIMAL HEALTH

This Fact Sheet describes good dairy farming practice to ensure animals that produce milk are healthy and there is an effective health care programme in place. However, not all of the practices are applicable in all circumstances and may be superseded by national, international or market demands.

The suggested good dairy farming practices for animal health are set out under the following headings:

- Establish the herd with resistance to disease.
- Prevent entry of disease onto the farm.
- Have an effective herd health management programme in place.
- Use all chemicals and veterinary medicines as directed.



1.1 Establish the herd with resistance to disease

1.1.1 Choose breeds and animals well suited to the local environment and farming system

Different dairy species and breeds have different requirements. Selecting dairy animals that are suited to the local environment will greatly reduce the risks to productivity posed by animal health and welfare problems. Of particular relevance is the animals' ability to adapt to climatic extremes, feed quality, local parasites (especially ticks) and their acquired resistance to endemic disease.

The demands on the animals also vary with the farming system. Housed animals may have a higher exposure to communicable diseases, whilst extensively maintained animals are more prone to parasitic infections. Animals introduced from different locations may be vulnerable to endemic diseases in the new location due to lack of previous exposure and the development of immunity.