



# Beef cattle feedlots: waste management and utilisation

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# PREFACE

The beef feedlot industry has expanded greatly over the last two decades as the demand for high quality beef has increased in both local and export markets. At the same time, industry and the public have become more conscious of animal welfare, the environment and workplace health and safety. This manual deals with the management of the main wastes of the feedlot, namely manure and effluent.

## CONTENTS OF SECTIONS

This manual is comprised of five sections describing best-practice guidelines for waste management.

### 1. Solid wastes

Wet dung and urine accumulate quickly on the feedlot pen. Pens have to be cleaned regularly for efficient cattle production and to minimise odour emissions. Thus the handling of manure becomes a major ongoing part of feedlot management. Mortalities and boiler ash are other solid wastes that may need to be managed.

### 2. Solid waste storage and processing

Harvested manure must be stored and processed. Stockpiling and composting manure reduces its bulk, improves handling and concentrates some nutrients. An area is also needed to store composting mortalities.

### 3. Management of odour, dust and flies

Odour is mainly the result of anaerobic breakdown of cattle manure. While good siting and feedlot design (particularly drainage) will minimise odour, good waste management is also essential. Dust from the pens, roads and manure stockpiling/composting area can be an issue under dry conditions. Flies are attracted to manure and need to be controlled at times.

### 4. Liquid wastes

Rainfall runoff from the pens is heavily loaded with nutrients. While this runoff can provide a good source of nutrients for plant growth, it needs to be safely stored until it can be utilised.

### 5. Utilisation of manure, compost and effluent

Feedlot manure, compost and effluent can be valuable sources of nutrients and organic matter for improving soil structure and fertility and crop or pasture production. Careful management is needed to gain the most benefit from their utilisation while protecting the environment and amenity.

## APPENDICES

### 1. Standard operating procedures for waste management and utilisation

Suggested standard operating procedures for feedlot manure, compost and effluent management and utilisation.

### 2. Managing human exposure to contaminants

A brief overview of the main areas and activities in the feedlot where humans may be exposed to contaminants, including practical ways to minimise the risks of this potential exposure.

### 3. Duty of care: waste utilisation

Those utilising effluent, manure or compost must take reasonable and practical steps to prevent harm to the environment and nuisance to the general public.

### 4. Manure valuation pro forma

The economic value of manure can be assessed using the prices of commercial fertilisers and nutrient content of the manure.

### 5. Advances in waste treatment

Increasing environmental pressures and economic incentives for industries and enterprises to reduce greenhouse gas (GHG) emissions are driving interest in waste-to-energy projects.

### 6. NFAS Manual sample elements

To minimise the likelihood of a disease entering and spreading within the feedlot.

## Bibliography

## Glossary