



Chapter 10. FOR MORE INFORMATION

The service providers, publications and web resources listed below can assist you in developing your manure management plan.

10.1 ALBERTA AGRICULTURE AND RURAL DEVELOPMENT

Confined Feeding Operation (CFO) Extension Specialists with Alberta Agriculture and Rural Development (ARD) are available to provide information on Alberta's *Agricultural Operation Practices Act* (AOPA) and the CFO permitting process for livestock producers, consultants, municipalities and other interested parties.

CFO Extension Specialist

North/Peace Region

Phone: 780-939-1218
Fax: 780-939-1269

Central Region

Phone: 403-755-1475
Fax: 403-340-4896

South Region

Phone: 403-381-5885
Fax: 403-382-4526

Website: www.agriculture.alberta.ca/aopa

10.2 NATURAL RESOURCES CONSERVATION BOARD

The Natural Resources Conservation Board (NRCB) is responsible for the permitting of CFOs and is also responsible for addressing complaints regarding the management of manure on agricultural operations in Alberta.

NRCB Offices

Lethbridge: 403-381-5166
Red Deer: 403-340-5241
Morinville: 780-939-1212
Fairview: 780-835-7111

NRCB 24-hour Response Line: 1-866-383-6722

Website: www.nrcb.gov.ab.ca

10.3 PUBLICATION SOURCES

Alberta Agriculture and Rural Development
Publications Office
7000-113 Street
Edmonton, AB T6H 5T6
Phone: 1-800-292-5697
Website: www.agriculture.alberta.ca and
www.agriculture.alberta.ca/manure

Agricultural Operation Practices Act
Website: www.agriculture.alberta.ca/aopa

Natural Resources Conservation Board
Website: www.nrcb.gov.ab.ca



10.4 REFERENCES FOR ENVIRONMENTAL LIVESTOCK MANAGEMENT TOPICS

The following publications are available through the ARD Publications Office.

Website: www.agriculture.alberta.ca

10.4.1 General

Agdex 400/28-1	Managing Livestock Manure
Agdex 420/580-2	Cattle Wintering Sites: Managing for Good Stewardship
No Agdex	Alberta Feedlot Management Guide – 2nd Edition
Agdex 460/27-1	Manure and Pasture Management for Horse Owners

10.4.2 Nutrient Management Planning

ARD Website	Manure Management Planner 2008 (MMP)
ARD Website	Alberta Farm Fertilizer Information and Recommendation Manager (AFFIRM)
ARD Website /No Agdex	Nutrient Management Planning Guide

10.4.3 Manure-Related Issues

Odour

No Agdex	Dealing with Livestock Odour Concerns
No Agdex	How Does Alberta Legislation Address Odour
No Agdex	Measuring Odour
No Agdex	Odour Reduction Practices: Animal Diets and Land Application of Manure
No Agdex	Odour Reduction Practices -

No Agdex
Considerations for Site, Buildings,
Manure Storage and Treatment
Frequently Asked Questions
on Livestock Odour

Water Quality

Agdex 576-1	Managing Nitrogen to Protect Water Quality
Agdex 576-2	Managing Phosphorus to Protect Water Quality
Agdex 576-3	Managing Feedlot Runoff to Protect Water Quality
Agdex 576-4	Managing Cow/Calf Operations to Protect Water Quality
Agdex 576-6	Manure Management to Protect Water Quality
Agdex 576-7	Hog Production and Water Quality: Minimizing the Risk
ARD Website	Siting to Prevent Water Pollution

Air Quality

Website	Ammonia Losses from Liquid Manure Applications Calculator
Website	Ammonia Losses from Livestock Buildings and Storage Calculator
Agdex 086-6 Agdex 729-4	Ammonia Emissions and Safety Ammonia Emissions from CFOs: Control and Mitigation
Agdex 086-2	Hydrogen Sulphide Emission and Safety
Agdex 729-2	Methane (CH ₄) Safety

Flies

No Agdex
A Guide for the Control of Flies in
Alberta Confined Feeding Operations

10.4.4 Manure Production

No Agdex	Livestock Manure Contents and Values - Manure Characteristics and Land Base Code
No Agdex	Module 4 of the Nutrient Management Planning Guide



10.4.5 Manure Treatment

Manure Composting

No Agdex	Manure Composting Manual
ARD Website	Manure Composting Calculator
Agdex 400/27-2	Compost Temperature Measurement
Agdex 537-2	Compost Tea
Agdex 086-9	Fire - Compost and Organic Matter
ARD Website	Composting Regulations for Alberta
ARD Website	Windrow Composting Process
ARD Website	Composting Benefits and Disadvantages
ARD Website	Composted Versus Stockpiled Manure
ARD Website	Assessment of Compost Windrow Turners

Anaerobic Digestion

Agdex 768-1	Anaerobic Digesters
Agdex 768-2	Anaerobic Digesters: Frequently Asked Questions
Agdex 768-3	Biogas Energy Potential in Alberta
Agdex 768-4	Integrating Biogas, Confined Feedlot Operations and Ethanol Production

10.4.6 Land Application

ARD Website	The Alberta Soil Information Viewer
ARD Website	Area and Volume Calculators
ARD Website	Manure Transportation Calculator
ARD Website	Applying Manure on Perennial Forage Manual
/No Agdex	Perennial Forage Manual
Agdex 538 /120-1	Applying Manure on Perennial Forage: A Summary
Agdex 538-3	Ammonia Volatilization from Manure Application
Agdex 538-1	Manure Application and Nutrient Balance on Rangeland

10.4.7 Soil and Manure Sampling

Agdex 538-2	Sampling Liquid Manure for Analysis
Agdex 538-4	Sampling Solid Manure for Analysis
Agdex 538 /450-1	Sampling Poultry Manure for Analysis

Agdex 541-1	Alberta Fertilizer Guide
ARD Website	Soil Sampling and Testing
Agdex 540-1	Crop Nutrition and Fertilizer Requirements

10.4.8 Calculators and Software Tools

The following tools are available on the ARD website:

- Area and Volume Calculators
- Ammonia Losses from Liquid Manure Applications Calculator
- Ammonia Losses from Livestock Buildings and Storage Calculator
- Manure Composting Calculator
- Manure Transportation Calculator
- Manure Management Planner 2008 (MMP)
- Alberta Farm Fertilizer Information and Recommendation Manager (AFFIRM)

The following on-line calculators are currently under construction; contact a CFO Extension Specialist for more information.

- Affected Parties Radius Calculator
- Catch Basin Calculator
- Earth Manure Storage Calculator
- Minimum Distance of Separation Calculator
- Land Base Calculator
- Water Requirements Calculator

10.4.9 Manure Markets

ARD Website	Manure and Compost Directory
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10.5 AOPA LEGISLATION

For all the information listed below, go to www.agriculture.alberta.ca/aopa.

10.5.1 Act and Regulations

- Agricultural Operation Practices Act
- Agricultural Operations, Part 2 Matters Regulation – AR 257/2001
- Standards and Administration Regulation – AR 267/2001
- Board Administrative Procedures Regulation – AR 268/2001

10.5.2 Codes

- Livestock Manure Contents and Values - Manure Characteristics and Land Base Code

10.5.3 Technical Guidelines

This is not a complete list.

- Concrete Manure Liner Guidelines
- Leak Detection and CFO's

10.5.4 Standard Factsheets on AOPA

Agdex 096-1	AOPA Reference Guide
Agdex 096-2	Permits and Regulations for Existing Operations
Agdex 096-3	Manure Management Record Keeping Regulations
Agdex 096-4	Wintering Sites and Livestock Corrals
Agdex 096-5	Manure Spreading Regulations
Agdex 096-6	Manure Management Regulations for Cow/Calf Producers
Agdex 096-8	Manure Characteristics and Land Base Code
No Agdex	Municipalities and the Agricultural Operation Practices Act (AOPA)
No Agdex	The Application of the Minimum Distance Separation (MDS) for Siting Confined Feeding Operations in Alberta