Agricultural Greenhouse Gas Emission Reduction Opportunities

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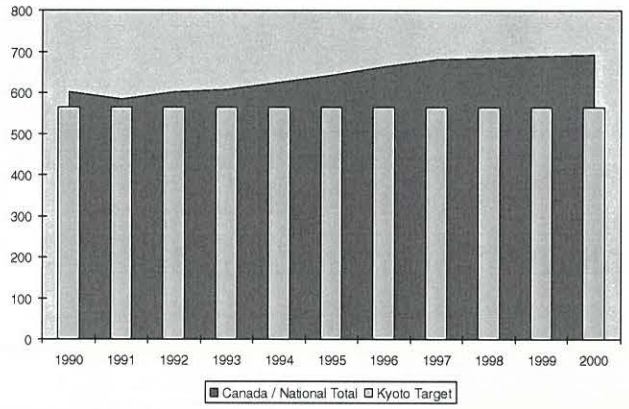
Valdrew Environmental Services Ltd.

Introduction

1. **Agricultural Emissions – National Perspective**
2. **Agricultural Emission Reduction Potential and Opportunities**
3. **Roseburn Ranches Example**
4. **Canadian Cattle Industry Potential**

Canada's Emission Profile 1990 to 2000



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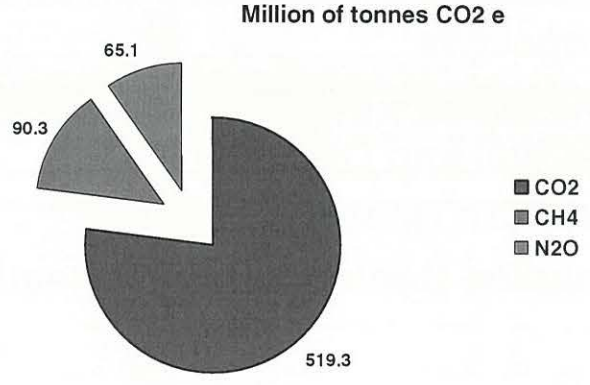
Canada's GHG Emissions 1997



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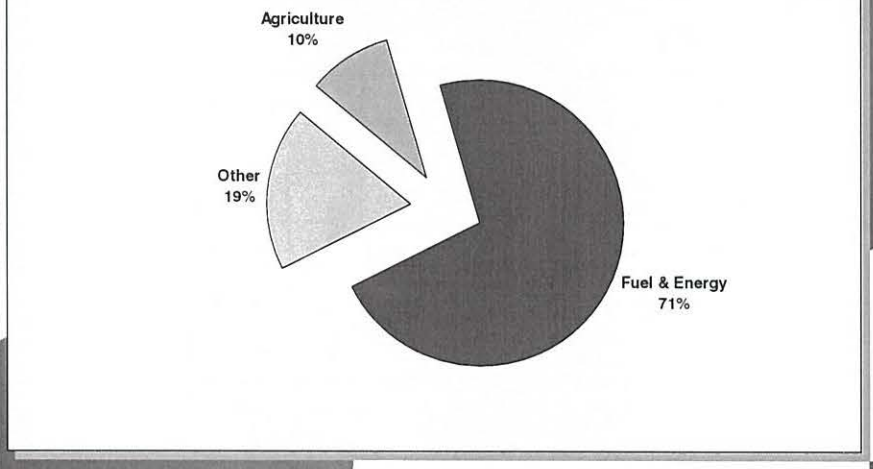
Canadian GHG Sources 1997



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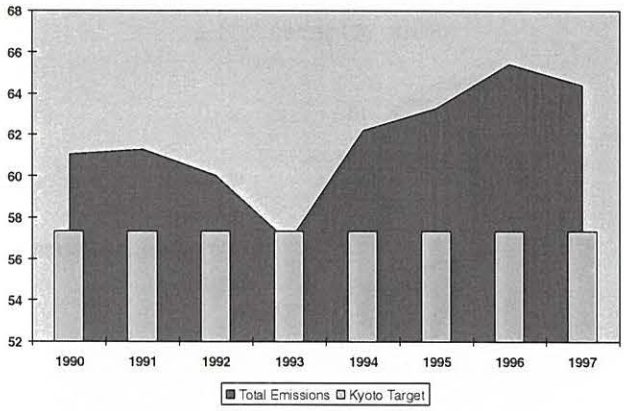
Canada's Agricultural Emission Profile 1990 to 1997



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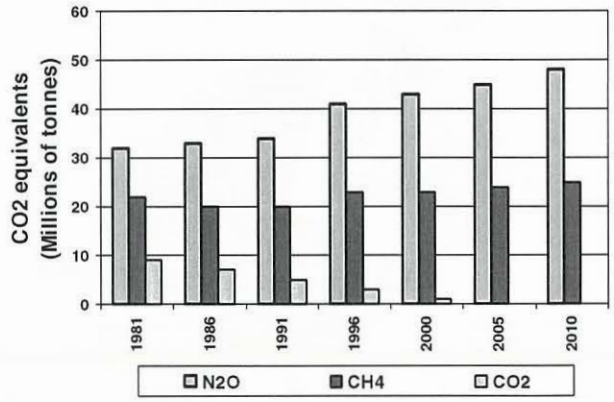
Estimates of Total GHG from Canada's Agro ecosystems



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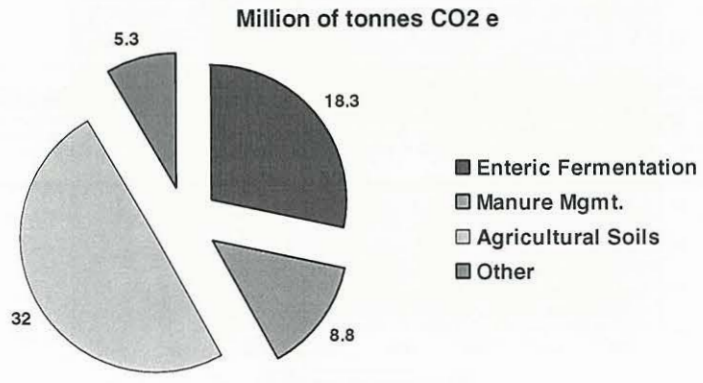
Agric. GHG Sources 1997



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Agricultural Emission Reduction Potential

1. Increasing Soil Carbon – Removing CO_2 from the Atmosphere
2. Reducing methane emissions from livestock
3. Reducing CH_4 and N_2O emissions from manure

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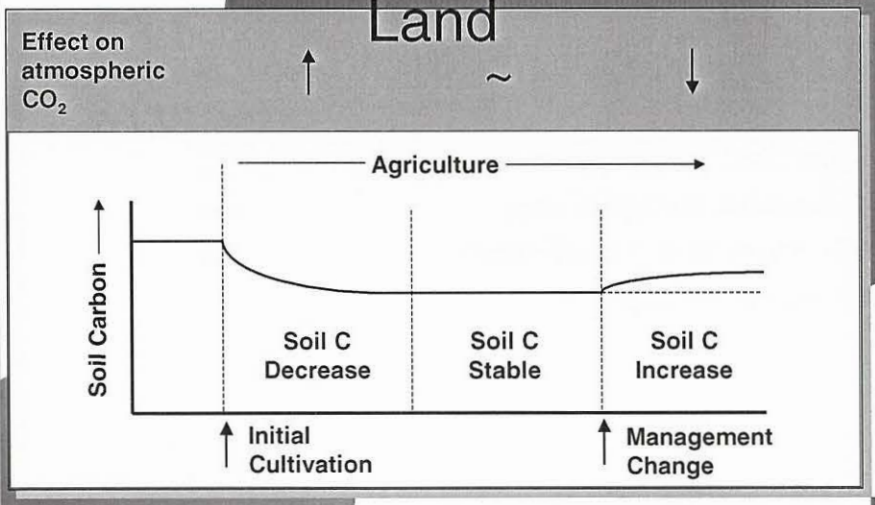
Management Induced Changes in C of Agricultural Land



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Opportunities for Emission Reduction & Removal

	Potential Million tonnes CO_2 / yr.
Slough margin revegetation	2.9
Shelterbelt planting	.4
Conversion of marginal cropland	2.2
Reduce summerfallow / minimum or no tillage	18.3

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Opportunities for Emission Reduction & Removal

	Potential Million tonnes CO_2 / yr.
Manure Management	4.0
Livestock feed efficiency	4.2
Fertilizer timing & efficiency	3.0
Pasture management	.7

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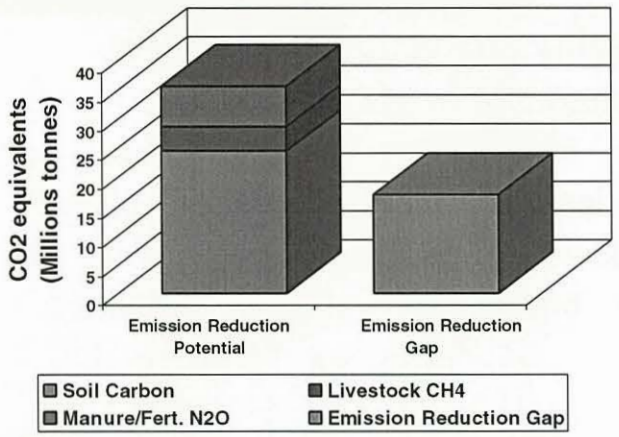
Canadian Agricultural Sector: Reduction Potential



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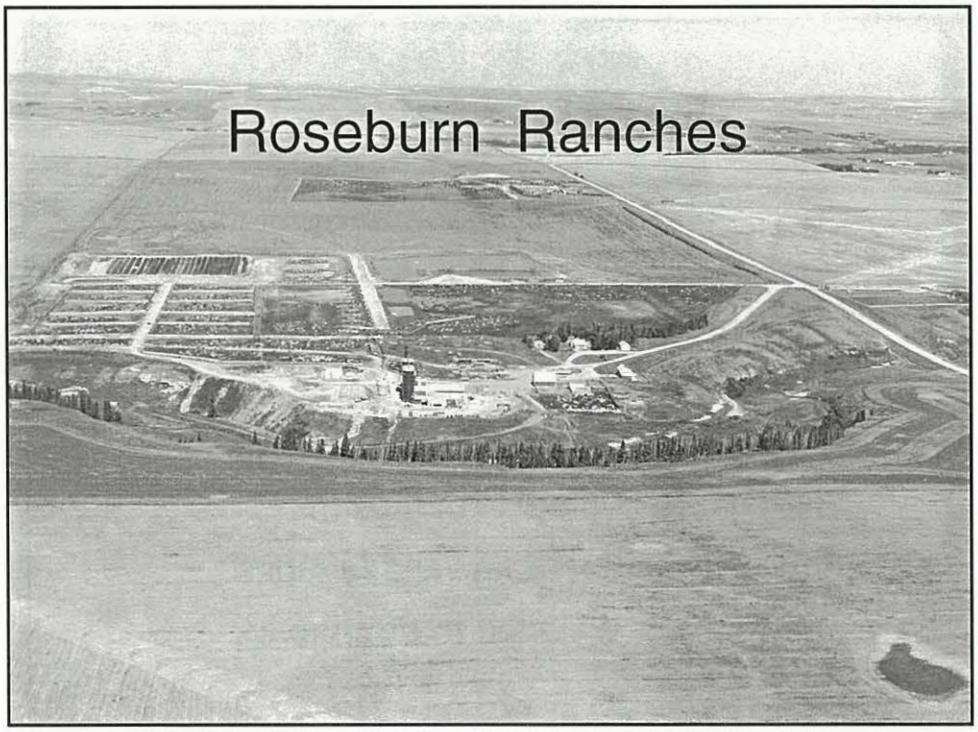

Feedlot Objectives

- Quality production of Red Meat
  - maximize weight gain
    - Efficiency of feed conversion to meat
  - clean cattle for high throughput plants
  - lowering operation costs
    - Efficient equipment and fuel utilization

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Feedlot or Town

- Residence – Hotel, Doctor on call
- Fresh Water Supply – wells or lagoon
- Restaurant – 2 meals a day
- Garbage Pick-up – manure removal
- Garbage Recycled – composting
- Sewer System – drains and lagoons
- Waste water recycled to farmland

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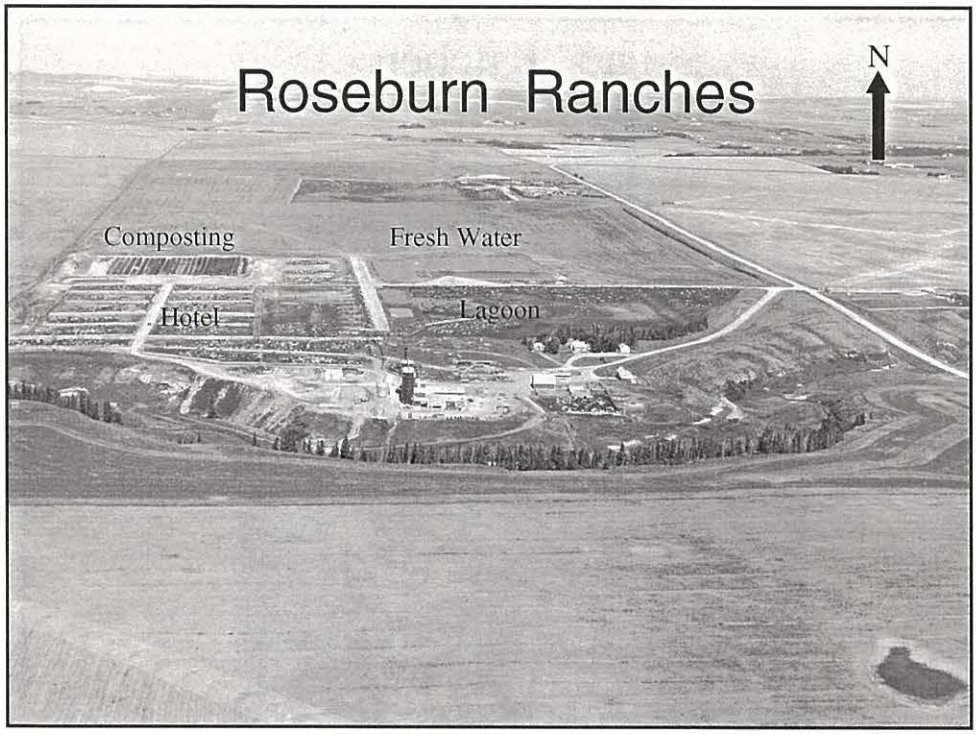
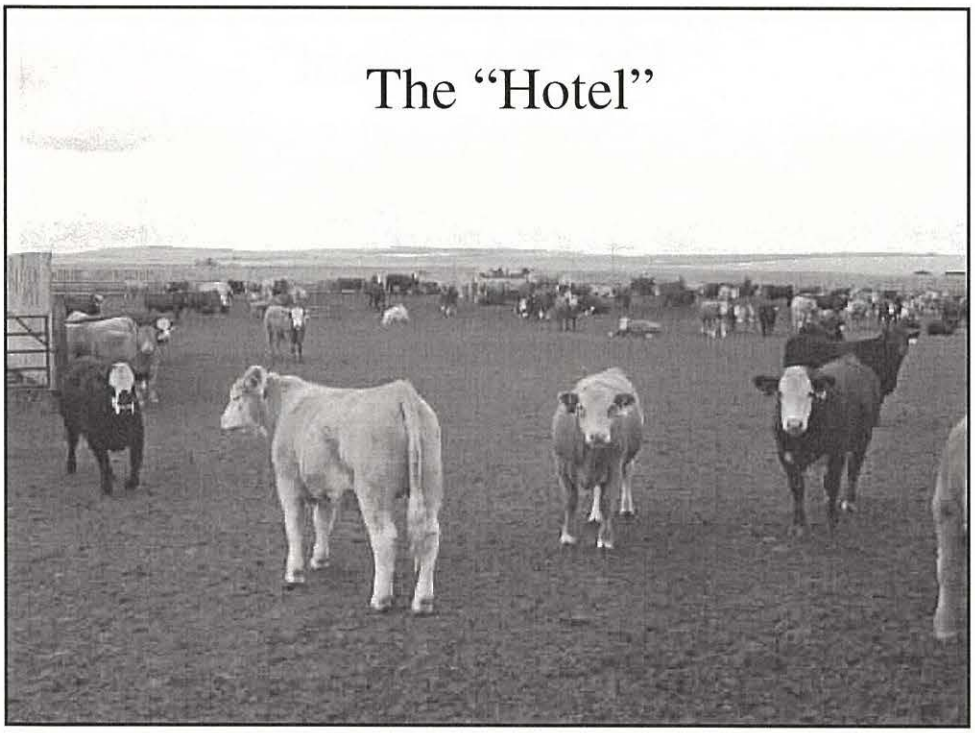
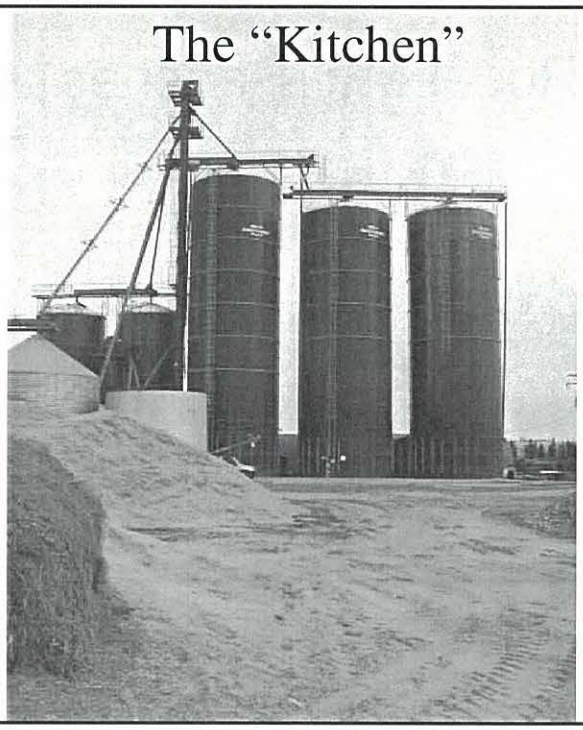
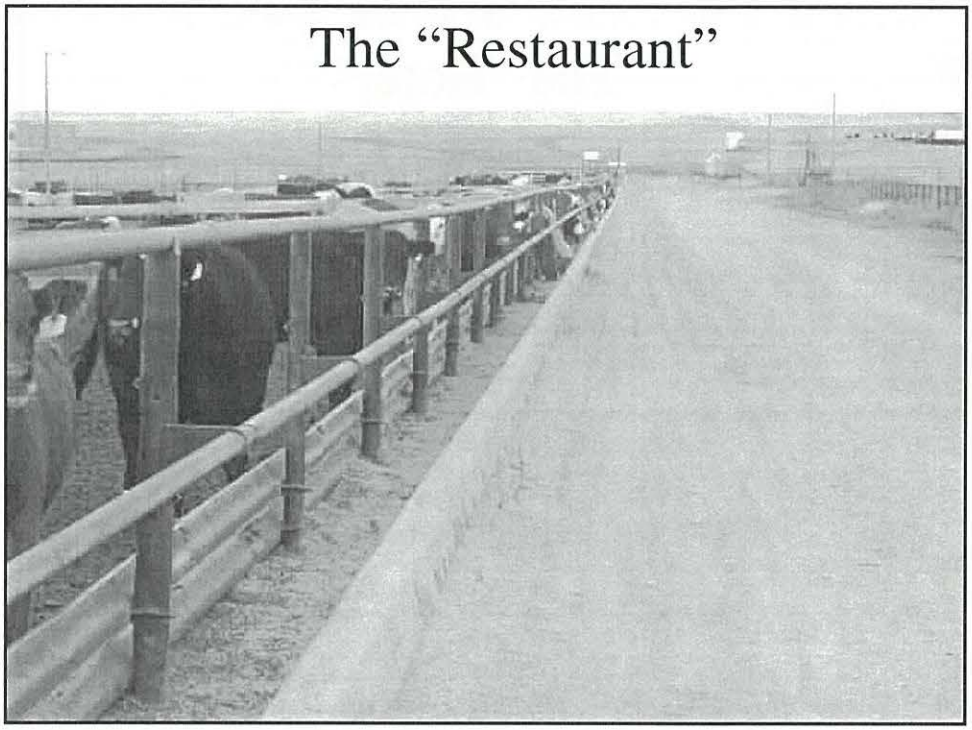

Roseburn Ranches
N
Composting
Fresh Water
Hotel
Lagoon


The "Hotel"

The "Kitchen"

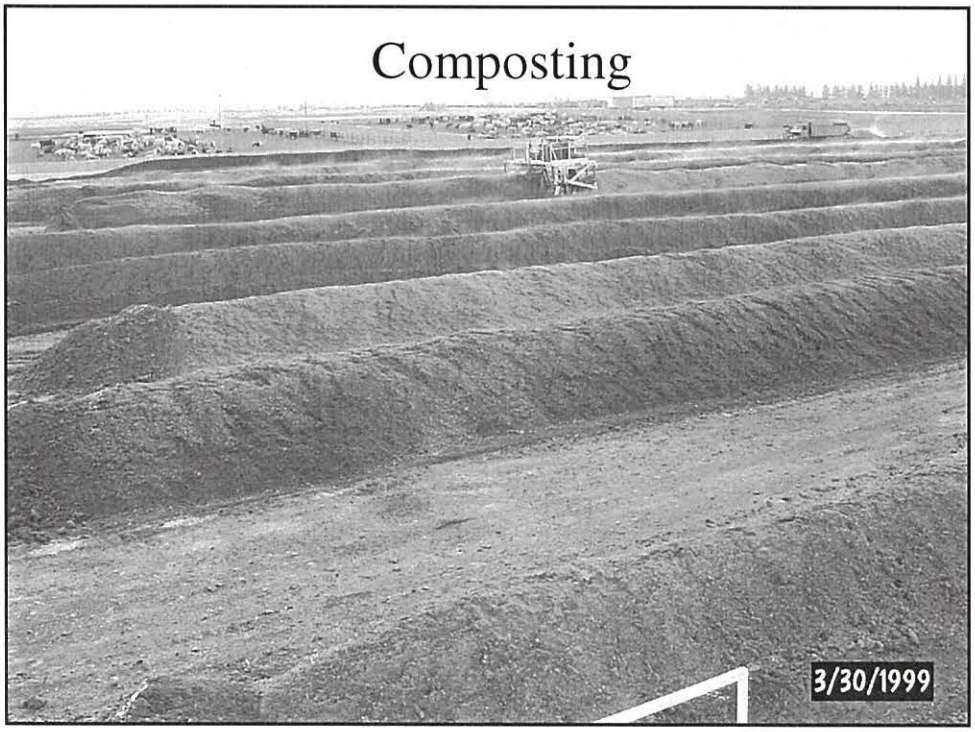


The "Restaurant"

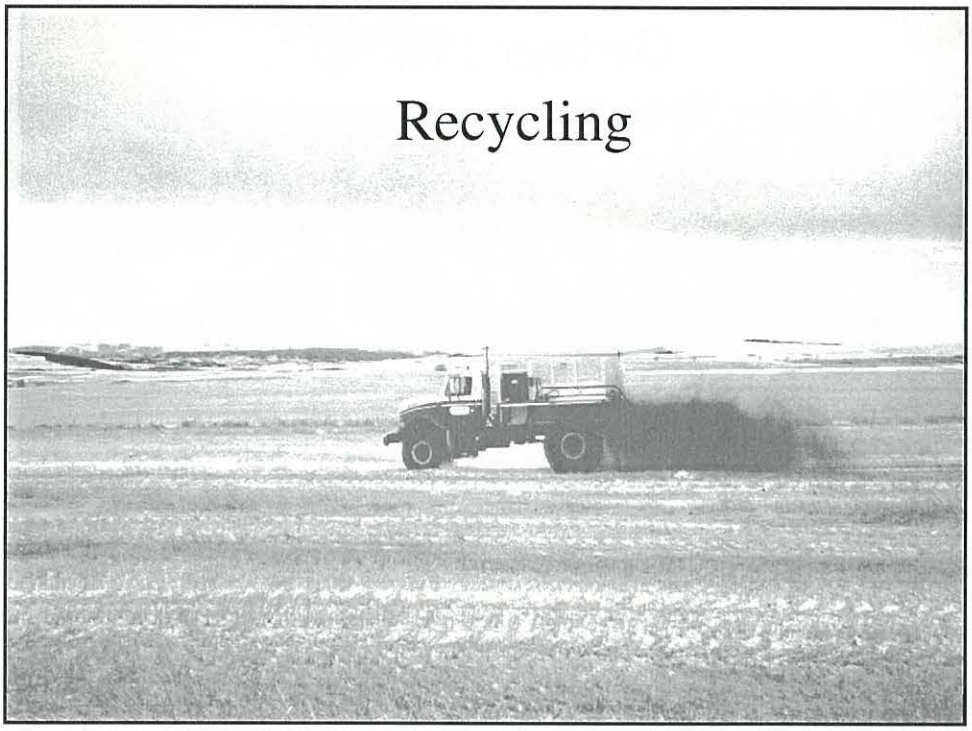


Garbage Pick-up

Composting



Recycling




THE
Real Thing
NATURALLY
FARM COMPOST
Odorless
Weed Free!
Non Burning
Improves Drainage
2kg
4.4lb

Roseburn Changes
1990 to 2000

- From 3,000 to 30,000 head per year
- From 8.5 lb. to 6 lb. feed per lb. gain
- From 1.8 lb/day to 3.2 lb/day gain
- 25% reduction in manure
- From pile/spread manure to Composting
- From straw bedding to wood chips

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Roseburn Changes
1990 to 2000

- Reduced Methane and Nitrous Oxide
  - From feed efficiency improvement
  - Less manure
  - Composting manure
- Reduced CO_2
  - Less fuel use with wood chip bedding

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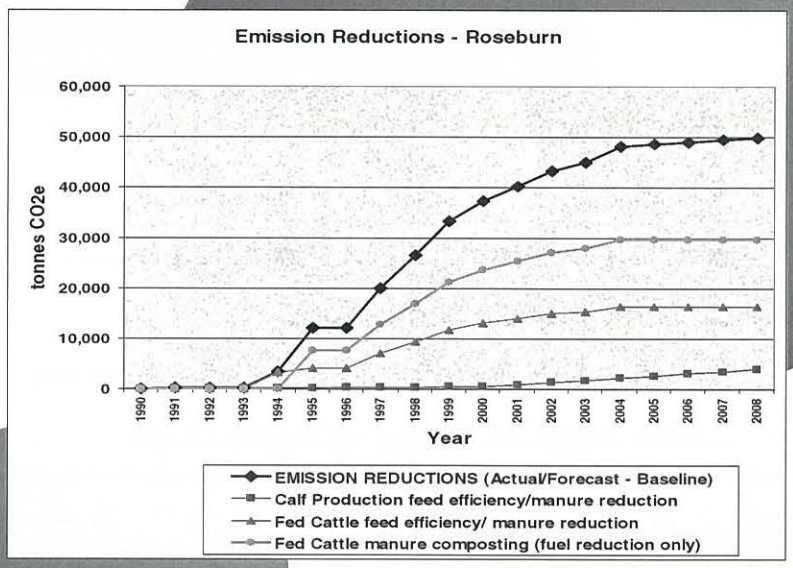
Roseburn Emission Profile



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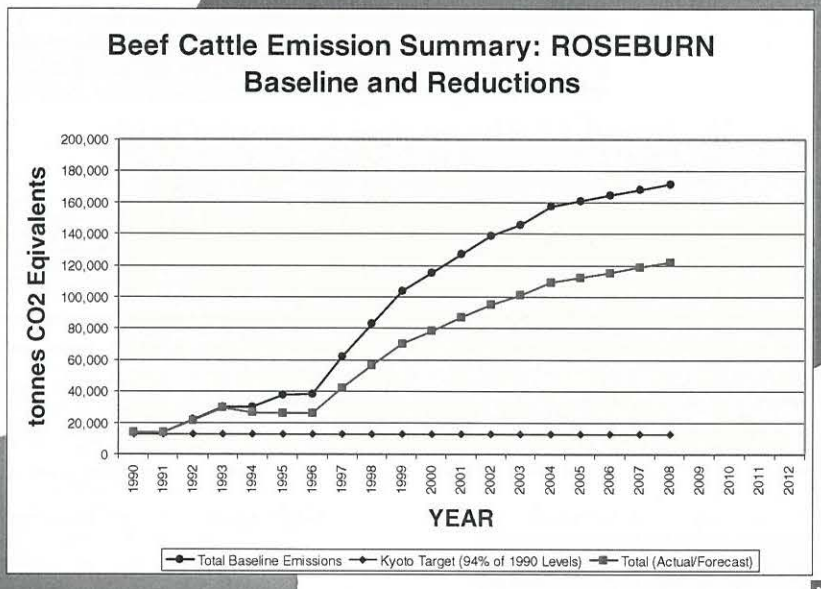
Roseburn Emission Profile



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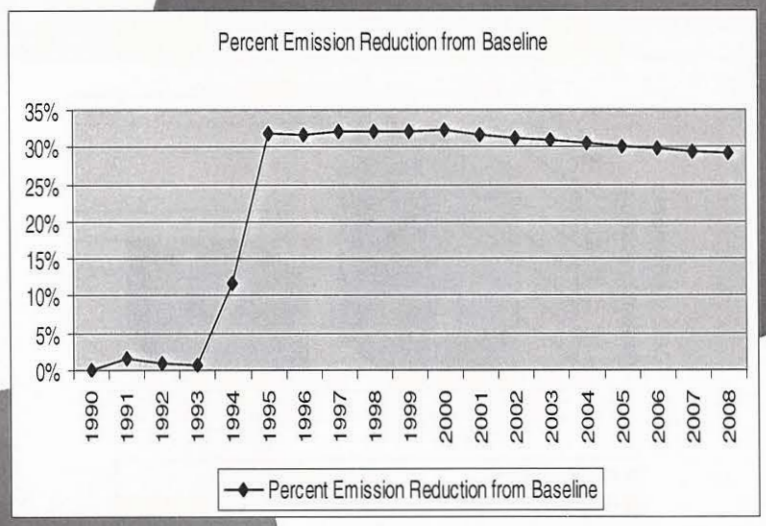
Roseburn Emission Profile



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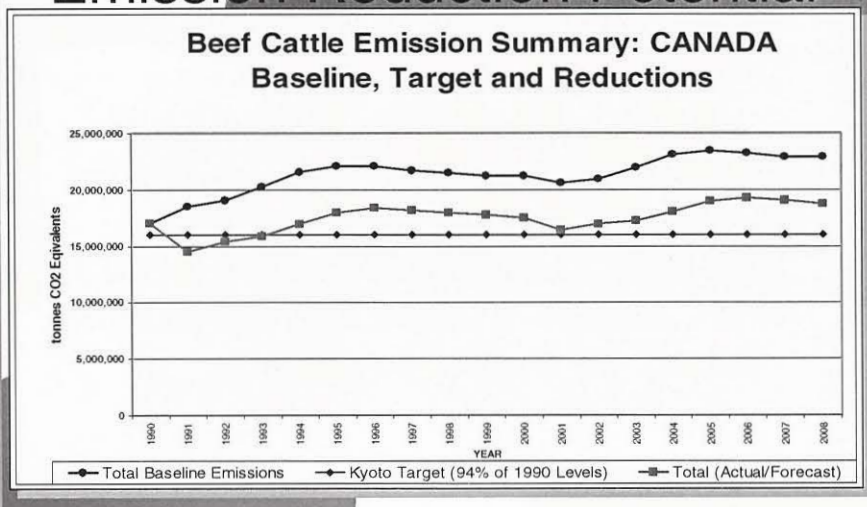
Canadian Cattle Industry: Emission Reduction Potential



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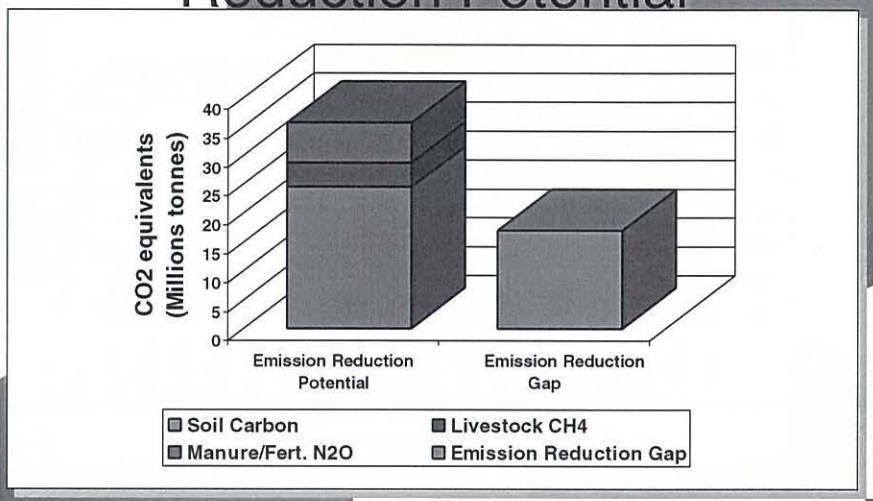
Canadian Agricultural Sector: Reduction Potential



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Summary

- The Canadian Cattle Industry has the opportunity to reduce emissions significantly
- Together with crop farmers can reduce by 30 to 35 million tonnes CO_2e per yr. by 2008.
- Some Cattle Producers have already achieved 30 to 35% emission reductions from improved feed efficiency and manure management.

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