USDA United States Department of Agriculture

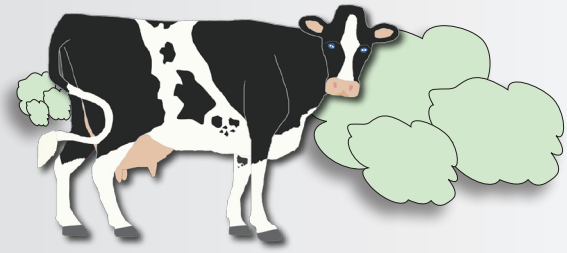
All about GHG on dairy farms

Which end of a dairy cow produces more gas?

The front end!

Methane source is:

- **95%** belching (burps)
- **5%** flatulence (toots)



Major Green House Gases (GHG) produced on dairy farms

Methane (CH_4)

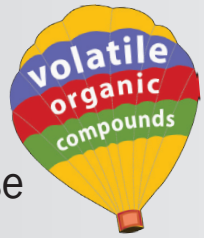
enteric fermentation by cows
manure storage
silage bunkers/piles

Carbon dioxide (CO_2)

fuel and electricity use
soil respiration

Volatile organic compounds (VOC)

silage bunkers and piles



Nitrous oxide (N_2O)

(released from soil)
fertilizer on crops/pastures
manure on crops/pastures

Ammonia (NH_3)*

manure in barns and storage
silage bunkers and piles
soils

* Not a GHG, but emissions can be regulated

Ways to reduce GHG emissions on dairy farms

cow

1. Select cows for high feed efficiency; higher producing cows produce less methane per unit of milk produced.
2. Balance rations for protein and energy to enhance utilization of feedstuffs.
3. Better controlled barn ventilation.

silage bunkers and piles

4. Cover silage bunkers and piles; manage face to reduce exposure to air.

manure

5. Improve manure collection and storage systems; reduce water content of manure; separate urine and feces.
6. Use anaerobic digesters to capture methane from manure; develop economic small-scale manure digesters.

soils

7. Incorporate manure into soil; improve manure injection systems.
8. Change cropping and fertility practices to maximize nitrogen uptake.

U.S. Dairy Forage Research Center/USDA-Agricultural Research Service
1925 Linden Dr., Madison, WI 53706 __ (608)890-0050 __ lori.bocher@ars.usda.gov
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