



Diet Influence on Nitrous Oxide Emissions in Lactating Dairy Cows

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Dairy farming has been described as the largest agricultural source of N_2O emission in Europe. Diet changes could be an easy and cost-effective way to reduce N_2O emission from dairy farms.

- ❖ Increased Forage/Concentrate ratio led to minimize slurry N-NH_4^+ content (from 0.16% to 0.11%)
- ❖ Under equal N application rates (120 kg N-NH_4^+ /ha) two slurries showed a similar N_2O emission pattern and similar cumulative values (208.5 and 241.2 g $\text{N-N}_2\text{O}$ /ha).
- ❖ Soil water content showed a great influence on short-term N_2O emission pattern.
- ❖ Cumulative N_2O emission per applied slurry unit (kg) was higher with increasing concentrate use since 5th day after slurry application.

Modifying diet to higher forage:concentrate ratio would allow the farmer to apply higher amounts of slurry, being N_2O emissions mainly influenced by edaphoclimatic conditions.