REDUCING MANURE STORAGE DURATION

Completely emptying a liquid manure storage tank in the spring – to eliminate aged manure in the tank – reduces methane emissions from newly loaded manure in the following months by up to 40%. The more manure removed, the better. Even emptying the tank to 5% of its total volume of manure will reduce methane emissions.

Implementation Tips

- Fully empty manure storage at least twice per year.
- Consider what manure removal equipment will work best for your storage tank and the purpose of the manure (e.g., vertical pumps, side-mounted pumps, earthen manure storage pumps).
- To ensure the right moisture content for agitating and pumping, thoroughly mix the manure to get the settled solids mixed in with the liquid portion before removing most of the liquid.
- Take several manure samples throughout the pumping when filling the tanker to analyze nutrient and dry matter as part of your nutrient management plan.

Benefits

GHG Reduced GHG emissions

Estimated return on investment
Low

On-farm emission mitigation potential

A DFC-supported research study shows that completely emptying a liquid manure storage tank in the spring reduces methane emissions from newly loaded manure in the following months by up to 40%. However, due to the study's design, an emissions factor cannot be calculated, which is needed to estimate the on-farm mitigation potential.

Resources

- **Factsheet:** Manure Management Practices to Mitigate Greenhouse Gases, proAction Environment Resources, Dairy Farmers of Canada (dfc-plc.info/REMSD1)
- **Webpage:** Removing Liquid Manure From Storage, OMAFRA (dfc-plc.info/REMSD2)
- **Research study:** Rennie, T.J., Gordon, R.J., Smith, W.N., VanderZaag, A.C. 2018. Liquid manure storage temperature is affected by storage design and management practices—A modelling assessment. Agriculture, Ecosystems and Environment, [online] 260 47-57. (dfc-plc.info/REMSD3)
- **Research study:** Petersen, S.O., Blanchard, M., Chadwick, D., Del Prado, A., Edouard, N., Mosquera, J., Sommer, S.G. 2013. Manure management for greenhouse gas mitigation. Animal 7:2, 266-282. (dfc-plc.info/REMSD4)
- **Research Study:** Wood, J.D., VanderZaag, A.C., Wagner-Riddle, C. et al 2014. Gas emissions from liquid dairy manure: complete versus partial storage emptying. Nutr Cycl Agroecosyst 99, 95–105. (dfc-plc.info/REMSD5)