

## COVERING MANURE STORAGE

Covering liquid manure storage systems can reduce GHG emissions by preventing them from being released into the atmosphere. It can be as simple as applying a straw cover, which can reduce methane emissions during storage by up to 15%. This decreases ammonia emissions and reduces odour and hydrogen sulfide production as well. The cover also provides rain protection that can reduce storage size, lessen manure hauling costs and prevent overflow. For larger farms, air-tight covers can be installed together with flares to capture and burn off methane.

### Implementation Tips

- Add a straw cover of at least 15 cm to liquid manure storage. The storage must be completely covered 100% of the time in order to reduce emissions.
- Consult an engineer to develop a manure storage cover and flare system. Note that cold climates may not produce sufficient methane to continually run a flare.
- Have only liquid manure go into the covered storage by implementing a separator system.
- Have a water management plan, as the cover may collect rainwater.



## Benefits



Reduced GHG emissions



**Estimated return on investment**

Low



**On-farm emission mitigation potential +++**

### Resources

- **Factsheet:** Manure Management Practices to Mitigate Greenhouse Gases, proAction Environment Resources, Dairy Farmers of Canada ([dfc-plc.info/CMS1](https://dfc-plc.info/CMS1))
- **Webpage:** Feasibility and Impact of Manure Storage Covers, Progressive Dairy Canada ([dfc-plc.info/CMS2](https://dfc-plc.info/CMS2))
- **Webpage:** For dairy farms, flaring methane offers mitigation option, Cornell University ([dfc-plc.info/CMS3](https://dfc-plc.info/CMS3))
- **Research study:** Veltman, K., Rotz, C.A., Chase, L., Cooper, J., Ingraham, P., Izaurralde, R.C., Jones, C.D., Gaillard, R., Larson, R.A., Ruark, M., Salas, W., Thoma, G., Jolliet, O., 2018. A quantitative assessment of Beneficial Management Practices to reduce carbon and reactive nitrogen footprints and phosphorus losses on dairy farms in the US Great Lakes region. *Agricultural Systems* 166, 10–25. ([dfc-plc.info/CMS4](https://dfc-plc.info/CMS4))