



Emergency Milk Disposal Guidance

Situation:

- There may be instances such as limited markets, limited processing capacity, milk quality violations or other factors that may force some dairy operations to dispose of milk.
- The items listed below are suggested alternatives. The options chosen by the producer for a given operation will vary based on the farm's situation, State regulations, and other requirements.

Issues:

- Producers must continue to abide by all Federal, State and local laws, even when disposing of waste or unused milk. Operational size and State regulations may affect the method of disposal.
- Milk has high biological oxygen demand (BOD) and can cause fish kills and potentially other negative environmental impacts if runoff reaches surface water or leaches into ground water.
- Milk will likely have a strong odor as it decomposes.

Disposal Options:

- Onsite waste storage facilities:
 - If available, milk should be disposed in an existing liquid waste storage facility. This will allow for proper planning and provide additional time to land apply.
 - Exceptions
 - Dairy operations that recycle sand bedding should not add milk to any part of the of the closed-loop or recycling wastewater system. Milk solids can adversely affect separation and curing time. Producers should only add to storages not associated with the recycling process. **Note:** Milk may be disposed in a sand bedding recycling system only if land conditions are not favorable for application (i.e., saturated soils, snow covered or frozen ground) and no other storage options are available.
 - Milk should not be added to under building manure storage facilities. Milk waste has the potential to generate deadly gases. These gases, combined with odors, are detrimental to animal and human health.
 - Milk, when mixed with manure storage effluent, reduces the BOD levels and potentially some odors associated with the milk.
 - Placing dumped milk in a waste storage facility will reduce storage capacity. Land application times may need to be adjusted to account for reduced storage period. Producers should not exceed the design capacity of waste storage facilities.
 - Document the amount of milk waste added to storage. Producers should update the nutrient management plan to account for additional nutrients added to the waste storage facility.



- Anaerobic digester (AD):
 - Milk can potentially be added to an anaerobic digester (AD).
 - Prior to adding milk, contact the digester manufacturer for recommended rates to reduce the impact on the microbial community and digester performance.
 - The milk sugar content may increase biogas production.
 - Digestion can reduce the odor potential of the milk.
 - The high fat content of milk may result in the solidification of fats.
 - Adding milk slowly over time may allow microbial populations to adapt.
 - There is minimal to no nutrient reduction as a result of anaerobic digestion (i.e., nutrients in equal nutrients out).
 - Digested material must still be land applied, treated, or stored.
- Land application:
 - Producers should follow the nutrient management plan (590) to determine the best places to apply the milk.
 - If available, producers should contact their nutrient management specialist or crop advisor associated with the farming operation for guidance on land applying wasted milk.
 - Milk contains a higher nutrient content than manure.
 - Sample the milk for nutrient content. Without a sample, the estimated nutrient values for milk are: 45 lbs. N, 18 lbs. P₂O₅, and 15 lbs. K₂O per 1,000 gallons.
 - If possible, it is preferable to mix milk with manure prior to land application.
 - Producers should apply based on crop needs.
 - Producers should not over apply, causing leaching or runoff.
 - Due to the potential odor from land-applied milk, the producer should locate application fields as far from neighbors and businesses as possible.
 - Date, volume, and locations where milk was land applied should be recorded.
 - All nitrogen and phosphorus are considered plant available.
 - Milk should be applied uniformly across a field to ensure even distribution of nutrients.
 - When possible, inject or incorporate milk to reduce odor and runoff potential.
 - Solids in the milk may buildup in hoses, valves, and pipes on land application equipment. Rinse/flush equipment to reduce plugging.
 - Milk should not be applied to vegetated treatment areas (VTA) or added to a septic system. The milk solids and BOD are detrimental to the performance of these systems. Odors can also be an issue.
 - Producers should establish appropriate setback distances from streams, wetlands and other waterbodies where runoff could occur. As a minimum, use setbacks as established for manure applications.
 - Land application should not occur prior to or directly after rainfall events to reduce runoff and leaching potential.
 - If possible, milk applications should occur after grazing in a rotation or after harvest to increase soil contact and maximize the length of time prior to the next grazing or harvest event.



- Feed:
 - Milk can be utilized as an animal feed.
 - Producers should consult State regulations with regards to feeding milk to animals (sale and labeling). Use may be limited to on-farm only.
 - Animal performance may be impacted due to dietary change from feeding milk. Sudden changes in diet may result in changes in manure consistency and impact the manure management system.
 - Biosecurity protocols should be maintained with regards to handling of milk as feed. Pasteurize milk if possible, prior to feeding. Disease can be spread through unpasteurized milk. Monitor herd health.
 - Milk spoils quickly. Clean equipment and be mindful of spoilage. The increase in microbial activity and odor associated with spoilage decreases palatability. Flies are attracted to unclean surfaces, and they are directly linked to other health issues such as mastitis and pink eye.