

Opinion Article

Liquid manure as a tool for crop and soil productivity

Roman Beel*

Department of Chemical Engineering, The University of Pavia, Pavia, Italy.

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DESCRIPTION

Liquid manure is an agricultural fertiliser made up of animal waste and organic waste that is occasionally diluted with water. It can be aged in a slurry pit to concentrate it. Slurry is a mixture of denser solids suspended in liquid, usually water. Slurry is most commonly used to transport particles or separate minerals, with the liquid acting as a carrier that is pumped using a centrifugal pump. Solid particles can range in size from 1 micron to hundreds of millimetres.

The particles may sink below a specific transit velocity, causing the mixture to act either Newtonian or non-Newtonian. The slurry can be abrasive and/or corrosive depending on the composition. As an alternative to fermented manure, liquid manure was developed in the twentieth century. Manure is utilised as a nutrient-rich fertiliser for plants in both forms, containing high levels of nitrogen, phosphorous, and potassium found in farm animals' excretions and derived from the food they eat.

More intensive livestock rearing techniques that use concrete or slats instead of straw bedding produce agricultural manure in liquid form, known as slurry. When used as fertiliser, manure from various animals has varying characteristics and requires different application rates. Spray irrigation, land surface spreading, and shallow subsurface injection are all options for applying liquid animal manure as a source of nutrients and organic matter for crop production. Liquid organic manures are made from the fermentation and/or decomposition of organic waste such as crop residues, animal faeces, urine, and other plant matter. Liquid organic manures supply nutrients to plants while also acting as a pesticide.

Liquid dairy manure contains, on average, 10-12 pounds of ammonium N per 1,000 gallons. When compared to a surface application with no incorporation, including 8,000 gallons of manure per acre on the same day can save up to 70 kg of N fertiliser. Instead of feeding your plants in just one method, liquid fertilisers can feed them in two ways. During the growing season, you can add water to liquid fertilisers every two to three weeks and spray your plants with a fertiliser mix. The main disadvantages that come with liquid fertilizer is that they can sometimes be more expensive than granular fertilizers, and they are more susceptible to volatilization (or turned into a gas and potentially evaporated into the atmosphere).

Liquid manure has a dry matter content of less than 5%. Solids or slurry are the two types of excrement excreted by agricultural animals. When fresh water is added to slurry manure or a considerable solid fraction is removed from slurry manure following solid-liquid separation, liquid manure is formed. Liquid manure can be emptied over a slanted animal house floor and conveyed in open channels by gravity. A low-pressure pump can also be used to remove it. Diluted effluent from a lagoon or other storage units is frequently used in this process. An open-lot system, in which liquid manure is created by runoff from lot surfaces and contains little dry matter, is a specific instance. The majority of the solid waste is drained out and stored in receiving basins, while most of the solid manure remains deposited on the lot.

*Corresponding author. Roman Beel, E-mail: Romanbeel1@gmail.com.