Topic	SEPARATION OF EFFLUENTS
Environment, social resilience	

Background

The management of effluents is pivotal both for environment and for the social acceptability of farming. The separation of effluents can contribute on both aspects.

Pros

Solid fraction

- Easy to transport
- It can be distributed with a manure spreader or a compost spreader
- It can be used to improve organic, chemical, physical, mechanical properties of the soil
- It can be used as litter

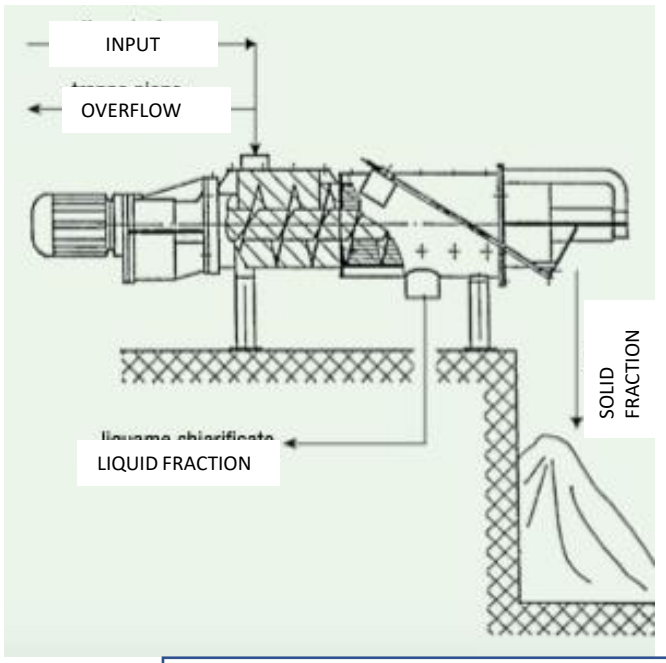
Liquid fraction

- Reduction of volume needed for storage
- Easy to mix and to pump
- Reduction of risk of blockage in the pipeline
- Reduction of formation of «hard cover» during storage
- Reduction of smell emissions
- It can be used for the *flushing* of the barn
- It can be used on fields covered with crops (crops will not get dirty) and it can be used in fertirrigation

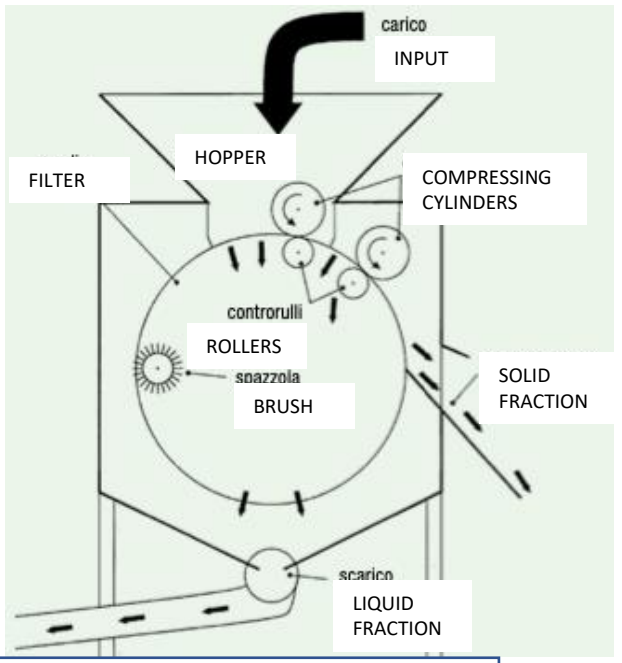
In general, **GHG emissions are reduced**: methane emissions are reduced because the liquid fraction has a smaller amount of degradable organic compounds; nitrous oxide emissions decrease thanks to the minor formation of the «hard cover» on the surface. Moreover, the liquid fraction has a lower content of N and P, as a percentage of them goes in the solid fraction: according to sepatator typology, in the solid fraction goes 15-35% of N and 10-40% of P.

Typologies

A – Separator with helicoidal compression



B - Separator with rotating cylinder



30-45,000 € (A) ⟵ Purchase cost ⟶ 27-29,000 € (B)

It is NOT worthwhile when ALL these situations occur:

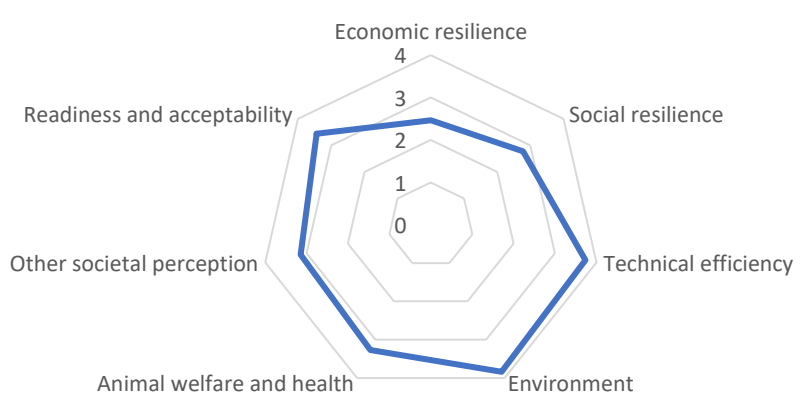
- Storage dimension <500 m^3.
- When all the field that must be preaded are within 3-5 km from the farm
- When the spreading is mostly done before tillage or seeding
- When the spreading is performed with a slurry tank

Quote of a farmer:
«With the separation we reduced our carbon footprint»

WORTHWHILE when ONE of these situations occurs:

- Storage dimension >500 m^3, which needs much energy to move them: with the separation of the liquid fraction the power of pomps and mixers can be reduced, with consequent reduction of energy consumption
- When the spreading must be done on fields that are far from the farm or parceled out: it is economically convenient to dedicate the solid fraction to the farest field and the liquid fraction to the nearest ones
- When the spreading is done on fields covered with crops: crops will not get dirty
- When the pipeline system has a small diameter

Assessment



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