

HORSE MANURE: CURRENT HANDLING AND FUTURE POSSIBILITIES



Author

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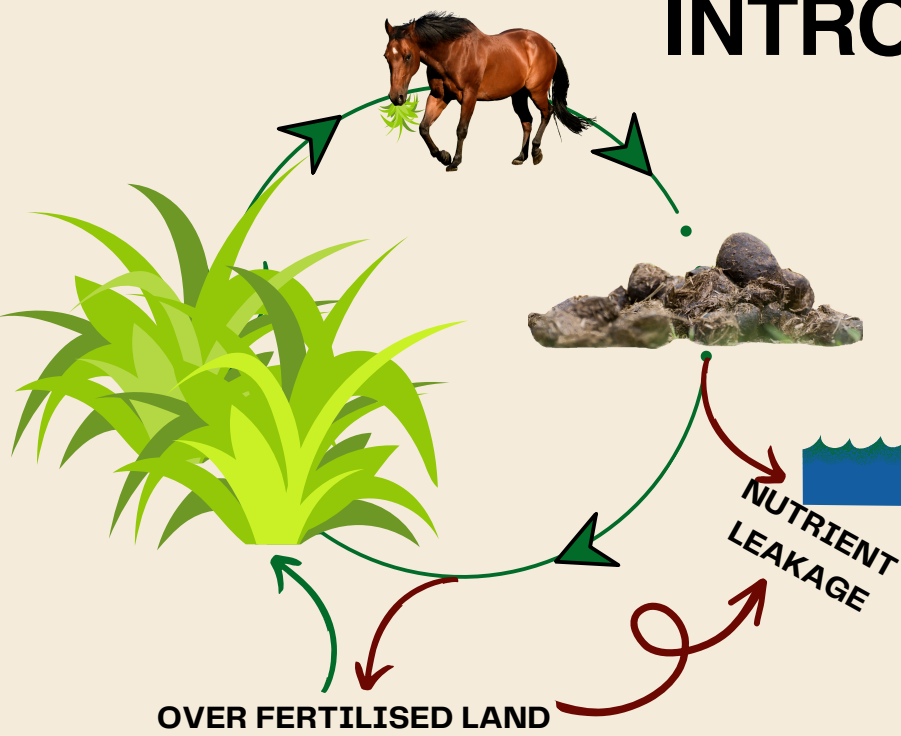
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INTRODUCTION



- Some horse keepers have no sustainable place to put their horse manure
- Many have no long-term plan
- Risk: Nutrient pollution

AIMS

- Clarify the current circumstances (**Now**) for horse manure handling + reasons behind it
- Investigate the potential for the **future** for the nutrients to be recycled. Potential effects for transportation and biogas extraction

METHODS

Now:

- Online survey (Sweden)
- Interviews (mostly Kalmar municipality)
- Current nutrient balance:
 - Assumptions and calculations of horse location and manure nutrient content (N, P & K)
 - + all other manure types available to farming
 - - the crop nutrient demand

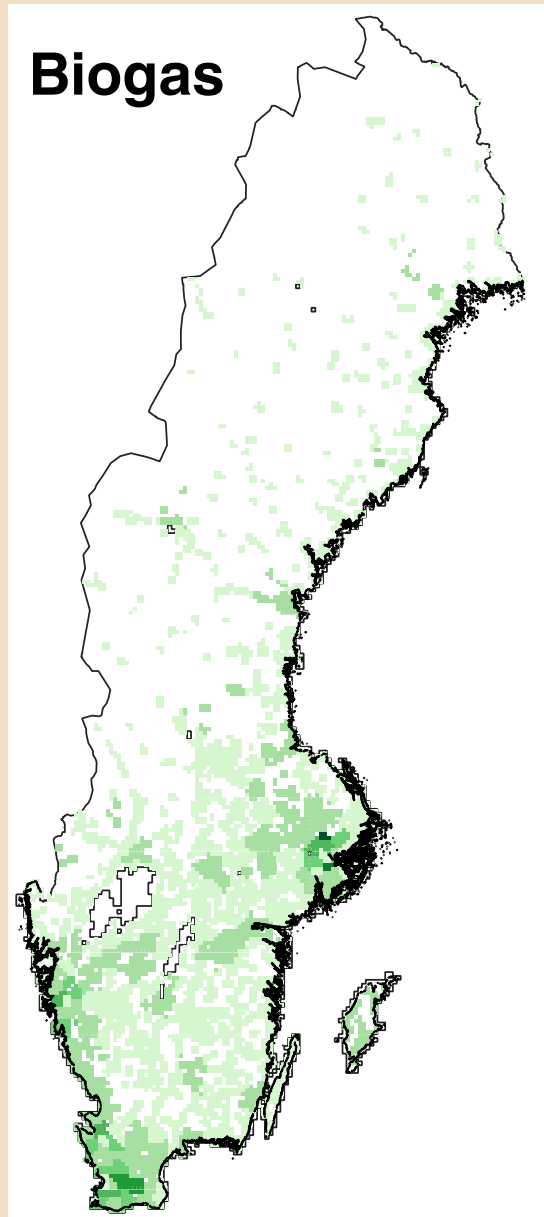
Nutrient content in other manure and crop nutrient demand data from: Metson et al. (2022). Swedish food system transformations: Rethinking biogas transport logistics to adapt to localized agriculture. Sustainable Production and Consumption



The possible **future** was calculated for:

- Optimisation model:
 - Minimum transportation distance x weight the horse manure (Sweden) needs, to find nutrient balance
- Biogas potential of Sweden's horse manure

Biogas



Now:

RESULTS

- Some horse manure stored indefinite, or left on unsuitable lands
 - Reason: lack of options (northern Sweden), cheaper, less farmers take the manure
- Most frequent use: farming
- Farmers and horse keepers: compatible bedding needs due to composting
- Getting rid of horse manure is generally an expense.
- Some gardeners and farmers are interested in horse manure, biogas facilities are curious
 - Single-farm-based biogas facilities available

Potential future:

- Biogas potential (green on map):
 - 0.6% of Sweden's energy need 2022, and 3.3% of the energy produced by wind power 2022
- Optimisation model:
 - There is too much manure compared to crop nutrient demand in Sweden

CONCLUSION

There are issues with getting rid of the manure sustainably.

There is potential: Some gardeners, farmers and biogas companies are interested in horse manure.

Sweden has too much manure compared to crop need.