

EIP-AGRI practice abstract

Short title:

Ammonium sulphate from co-digestion of corn silage, chicken manure and other biowaste by BENAS process

Summary:

The BENAS biogas plant uses a modified stripping process to recover the ammonium nitrogen from digestates. By adding a cheap FGD gypsum, it produces a concentrated marketable ammonium sulphate solution (25% AmS) and a solid calcium carbonate fertilizer (Lime, 70% DM). The BENAS process recovers 67% of $\text{NH}_4\text{-N}$ as AmS and 6% of $\text{NH}_4\text{-N}$ as Lime. It also reduces the greenhouse gas emissions by lowering CO_2 emissions from digestate transportation and reduce ammonia, nitrate and nitrous oxide emissions.

The produced AmS solution can be used for producing mineral fertilizer solutions or for upgrading manure or digestate low in N content. It benefits as its neutral pH is well tolerated by plants. The concentration of 25% AmS avoids evaporative crystallization, making it a suitable for direct application on crops. This product can be applied to all crops in need of nitrogen and especially those sulphur demanded. The recommended dosage will depend more on the sulphur requirements of crops. In order to reduce the risk of emission during application, it is recommended to apply the AmS solution via injection or immediately incorporated into soil after surface application.

For more information: https://nutriman.net/farmer-platform/product/id_667