EIP-AGRI practice abstract

Short title:

Technology for N&P recovery as compost starting from vegetable, fruit and garden wastes with "IOK Afvalbeheer" anaerobic digestion and composting process

Summary:

Selectively retrieved VFG-waste is shredded, stripped of impurities (iron, glass, plastics), heated with steam and fed into a dry thermophilic anaerobic digester (OWS) that yields digestate and biogas which is partly used as a fuel for 2 CHP's (combined heat and power-motors Jenbacher and MAN) in situ. The biogas is upgraded via membrane technology for gas grid injection. Planned expansion of IOK's processes is to capture the CO2 (during biogas upgrading) and use it as a nutrient in surrounding greenhouse crops.

The minerale-rich digestate is mixed with (sieved, de-ironed and shredded) green waste in an intensive composting process: this aerobic digestion phase in a closed hall mimics the natural conversion process from organic matter to humus in the soil (humification). This composting is also a controlled proces lasting a minimum of 4 weeks with minimum 3 turns, after which sieves (16mm) are used to separate the compost from the overflow fraction (recirculating to shredder/start of composting process). To ensure hygienisation of the end product (vfg compost) the following minimum temp/time- are upheld and controlled: thermophile digestion of min 2 consecutive weeks >50°C, followed by min. 2 weeks composting at min. 45°C of which min. 4 days at min. 60°C or min. 12 days at min. 55°C. The sieved matter (<16mm) further post-composts and matures, including further turning of the piles, outside for about 8 – 10 weeks.

This robust technology can be used in all EU regions where vfg- and green waste are selectively retrieved. It produces clean energy and over 25.000 t/y of ahygienised and stabilised high quality soil improver with slow nutrient release.

For more information: https://nutriman.net/farmer-platform/technology/id_271

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