

EIP-AGRI practice abstract

Short title:

Technology for N Recovery as liquid ammonium sulphate or ammonium nitrate starting from separated liquid slurry with "Circular Values" stripping and scrubbing process

Summary:

This technology provided by Circular Values offers an extraction of nitrogen from a variety of possible waste streams (liquid slurries, liquid fraction digestate, discharged water,..). First the slurry, digestate or discharged water is separated for further treatment of the liquid fraction. Then the stripping is performed by blowing air through the liquid fraction of the slurry or digestate while increasing temperature or pH (e.g. with CaOH) which will gasify the mineral nitrogen (NH₃). Afterwards the NH₃-filled air will be washed with acidified (HNO₃ or H₂SO₄) water (scrubbing) to capture the ammonium again in liquid form (ammonium sulfate from H₂SO₄ or ammonium nitrate from HNO₃). Circular Values static units can be profitable when the farmer has production of 4000 kg N and more (>1000 tons manure/digestate). For lower than 4000 kg a mobile Circular Values solution can fit. The recovery capacity is up to 85% of the ammonium-N from the slurry or digestate. Furthermore, since it is a closed process no further emissions occur. As it removes the ammonium the NH₃ emission for the digestate or manure is reduced. A high quality fertilizer replaces the production and use of an artificial fertilizer. This technology offers solutions for intensive husbandry in any EU region.

For more information: https://nutriman.net/farmer-platform/technology/id_265