

EIP-AGRI practice abstract

Short title:

Ammonium sulphate/nitrate from poultry manure by "Poul-AR®" technology

Summary:

The output of the Poul-AR® is a substrate with acceptable N-levels to use in a thermophilic CSTR. The other main product-output is a N-fertilizer: the stripped ammonia from fresh poultry manure is washed with a sulfuric acid leading to ammonium sulphate, or with a nitric acid, leading to ammonium nitrate. This resulting liquid and transparent scrubber water is a highly efficient ammonia fertilizer with a 9% nitrogen (dm) content.

This product is comparable to commercial available artificial fertilisers and has an average wholesale costprice of € 100/tonne. The N-fertiliser has been tested over last years through universities and farmer organisations mainly in the Netherlands, but also in other EU countries (Belgium, Spain and Italy): current TRL7 expected to be TRL 9 from 2020 onwards. The product can be put together in the same concentrations as the commodity fertilizers. This opens a broad market, as existing machinery can be used to spread these fertilizers. Ammonium sulphate and ammonium nitrate are good fertilizers particularly for alkaline soils. In the soil the ammonium ion is released and forms a small amount of acid, lowering the pH balance of the soil, while contributing essential nitrogen for plant growth. Ammonium nitrate is an important fertilizer because it contains both cation (NH₄⁺) and anion (NO₃⁻) nitrogen. The amounts of the product to be applied and application technology depend on product characteristics, the crop needs (N and S) season and soil characteristics.

For more information: https://nutriman.net/farmer-platform/product/id_281