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Meat and bone meal as nitrogen fertilizer to cereals in Norway

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Abstract

Meat and bone meal (MBM) contains appreciable amounts of nitrogen (N), phosphorus and calcium making it interesting as fertilizer for crops. The effect of Norwegian MBM as N fertilizer has been evaluated in pot and field experiments. The soils used in the pot experiment were peat and a sand/peat mixture, both low in content of plant nutrients. The field experiment was carried out on a silt loam. In the pot experiment increasing amounts of MBM gave significantly increased yields, although there was a partly N immobilisation shortly after application to the soil based on peat organic matter. In the field experiment there was no period of N immobilisation and good N effect was found for small amounts of MBM (Total N 50 kg ha⁻¹). At total N 100 kg ha⁻¹ there were no significant differences in grain yield of spring wheat between the treatments with MBM, mineral N fertilizer, and combination of MBM and mineral N fertilizer (N 50 kg ha⁻¹ from each). The results show that the relative N efficiency of MBM compared to mineral fertilizer is 80% or higher, if MBM is applied to cereals in spring.

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