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Agronomic recycling of pig slurry and pig sewage

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Abstract

Recycling pig slurry as organic fertilizer is a convenient and suitable way of waste elimination due to its low cost and high agronomic benefits. The objectives of this two year study are focused on improving and recycling pig slurry appropriately, and monitoring the soil-plant system at the same time. The evaluation of the agronomic effectiveness of different types of pig slurry (raw, solid, treated and depurated) in different doses (170 kg N ha-1 (legislated dose), 340 and 510 kg N ha-1) is innovative because the fertilizer value of each amendment can be balanced. Furthermore environmental issues such us volatilisation, leaching and salinisation have been considered for each treatment in order to set the viability of the study and to justify the treatments applied. Electrical conductivity, Kjeldhal nitrogen, sodium and potassium are the physico-chemical parameters most influenced in soils treated with doses 340 and 510 kg N ha-1. Additionally plant samples, especially halophyte, have shown the highest major and minor nutrients contents. Finally, pig slurry application in legislated doses could be considered a useful environmental practice; however, the development of the crop will be very influenced by the type of dose and amendment selected.