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Title	**Swedish farmers attitudes to reuse of urine and residues from anaerobic digestion**
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Swedish farmers attitudes to reuse of urine and residues from anaerobic digestion

In Sweden, urine diversion (UD) systems have been piloted and developed for more than 15 years. There are several municipal systems where the amounts of urine collected are sufficient to use in conventional large-scale agriculture. As a parallell, there are six bigger plants for production of biogas where residues from slaughterhouses, manure and household waste is anaerobically digested, resulting in a fertiliser with similar properties to urine. Handling systems for the digestion residue including quality control are well established.

The paper will present qualitative results of interviews with farmers receiving digestion residues from the six major biogas plants in Sweden, as well as with the farmers in the Stockholm region where urine has been or will be used on agricultural land. The paper will discuss aspects important to the farmers such as the attitudes of the market for agricultural products, including consumers, processing companies and agricultural cooperations, as well as smell, agricultural effect of the fertilisers and logistical aspects.

Preliminary results show that it is extremely important to the large scale industrial farmer that the products that are to be sold are accepted by the marketing organisations, and therefore, systems for quality control of urine as well as digestion residues needs to be implemented and developed. The farmers have certain criteria for accepting these fertilisers, notably, that the product should not be diluted with water, the product should be free from contaminants such as heavy metals and persistent chemical substances, and the product should be easily integrated in the handling system on the farm, especially in relation to storage and spreading.

Preliminary results also show that the farmers are willing to use urine as a fertiliser, if conditions according to the criteria stated in the paper are met. Some of the farmers are afraid that urine may be associated with sewage sludge, and that this may repel consumers, but their own concerns are mainly on practical issues such as application strategies and agricultural effect. Regarding digestion residues, no such concerns were identified, possibly due to the fact that the digestion is based on agriculturally related products such as manure, slaughterhouse waste etc.