Emissions de gaz à effet de serre et bilan économique de la petite méthanisation à la ferme et du raclage des déjections en élevage porcin

Pascal LEVASSEUR (1), Thomas COOREVITS (1), Sandrine ESPAGNOL (1), Pierre QUIDEAU (2)

(1) IFIP-Institut du Porc, BP 35104, 35651 Le Rheu Cedex
(2) Chambre Régionale d'Agriculture de Bretagne, CS 74223, 35042 Rennes Cedex

pascal.levasseur@ifip.asso.fr

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Greenhouse gas (GHG) emissions and economic balance of on-farm anaerobic digestion of fresh slurry in pig farms

The study determined the reduction of GHG emissions from a pig farm using a small anaerobic digestion plant, and its economic profitability when associated with the use of fresh slurry. A farrow-to-finish farm with200 sows and conventional equipments for slurry management, produces 800 t eq CO_2 /year, starting from feed distribution up to the spreading of slurry. 42% of the total emissions come from buildings, 33% from outdoor storage and 10% from spreading. Covering the outside pit and burning the collected methane allows for a 29% reduction in GHG emissions compared to the standard situation. This reduction can exceed 50% when anaerobic digestion is combined with collection of fresh liquid manure from fattening pigs, resulting in a moderate extra energy production. However, none of this scenario was profitable in the current economic situation. For profitability it would be necessary to combine a considerable reduction in investment cost (or the contribution of subsidies) with an increase in gross profit from a higher and better valued energy production.