Sex Hormones from Poultry Litter--Their Fate and Transport in Runoff and Drainage from Cropped Till- and No-Till Plots. (S03-jenkins153609-Poster)

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Abstract:

The millions of tons of poultry litter that are applied to agricultural fields annually are a source of the sex hormones estradiol and testosterone. Our objective was to determine if the concentrations of these two sex hormones in runoff and drainage from till and no-till soils receiving broiler litter were greater than in runoff and drainage from control plots receiving mineral fertilizer. The experiment consisted of six no-till and six tilled 10 X 30 m plots; three plots of each received either broiler litter, or mineral N, P, and K. After applying 7,500 kg/ha of litter, and planting rye, the plots were irrigated. Preliminary data indicated that volumes of drainage ranged from 9,200 to 17,000 l; no differences existed between till and no-till plots. Volumes of runoff ranged from 31 to 1750 l; runoff from tilled plots was greater (P = 0.05) than from no-till plots. Flow-weighted concentrations of estradiol ranged from six to 36 ng/l in drainage, and from 16 to 38 ng/l in runoff. For testosterone the range was from six to 11 ng/l in drainage, and from four to nine ng/l in runoff. No differences between plots receiving litter and mineral fertilizer existed. This finding may change as data are generated from additonal irrigation and natural rain events.

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