

Evaluation of Equipment for Liquid Hog Manure Application

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The application of manure has become a concern for society and the hog industry. Equipment must be found that applies manure according to the following parameters: minimal odor release, at a consistent rate that matches nutrient uptake of the crop, in a manner that avoids leaching and surface runoff, under varying field conditions, and in a practical and economical manner.

We compared the *Aerway* manure applicator (a new prototype machine developed by Dr. Bittman) to splash plate and surface banding (dribble application) on pasture and cropland at two different application rates (7000 gallons/acre and 3500 gallons/acre) and made cursory evaluations based on the above parameters. Preliminary soil test results for nitrogen (see table) indicate that there is an increasing level of nitrogen remaining in the soil after crop removal in the following order: control, surface banding, splash plate, *Aerway* and injection. This is what we expected since the odor released (on cursory observation) is in the exact reverse order.

Hog Manure Demonstration – Soil Test Results – Cropland (Oats)*

Nitrate N	Control	Splash Plate	Surface Banding	<i>Aerway</i>	Injection
Before	25	25	25	25	25
After crop removal	28	32	54	74	120

Units are in pounds per acre (lb/ac) in the 0 – 6 inch depth

*Crop was cut and baled as greenfeed

Implications: The *Aerway* deserves further scientific investigation (along with other equipment) since it seems to meet the main criteria for spreading liquid manure on cultivated land, pasture, forage crops or zero-till land. Supported by Alberta Environmental Sustainable Agriculture Program.