Sustainable Poultry Farming Group

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Hay Fertilization Demonstration Project Results – 2001 Season

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Objective: To evaluate the use of broiler litter applied to hayland on a Lillooet ranch.

Project Schedule of Events

Soil Sampling June 29 July 23 August 24

Manure Application July 1

Yield Sampled August 9

Overview

This trial site was set up as a satellite site to support the work at Spring Creek Ranch about 3 miles north of this ranch. Initially, the trial was designed to have a fertilizer and control treatment running as a comparison to the poultry manure treatment. However, since fertilizer was not applied to the fertilizer treatment, both the control treatment and fertilizer treatment field strips were combined as the control treatment. In the end, duplicated treatments were established for both manure and control and were set out as field strips of about 65 feet x 800 feet.

Soils were sampled once before manure application, and twice after. Crop yield was measured through weighing each bale and the representative distance between each bale. These measurements, along with swather width were used to calculate yield. Difficulties were found in accurately measuring the yield from the treatment areas. It appeared that the level of sensitivity of the measurement was in question, as well as error through the technique used.

Manure and soil samples were sent to Norwest Labs. Langley, B.C.

Poultry Manure Analysis

Total Nitrogen	Available Nitrogen	Phosphorus (as P2O5)	Potassium (as K2O)	Calcium	Magnesium
- - - - % as sampled - - - -					
3.7	3.0	2.5	1.6	1.5	.36

Poultry manure was applied at a rate of about 5 tons (10,000 lb) per acre.

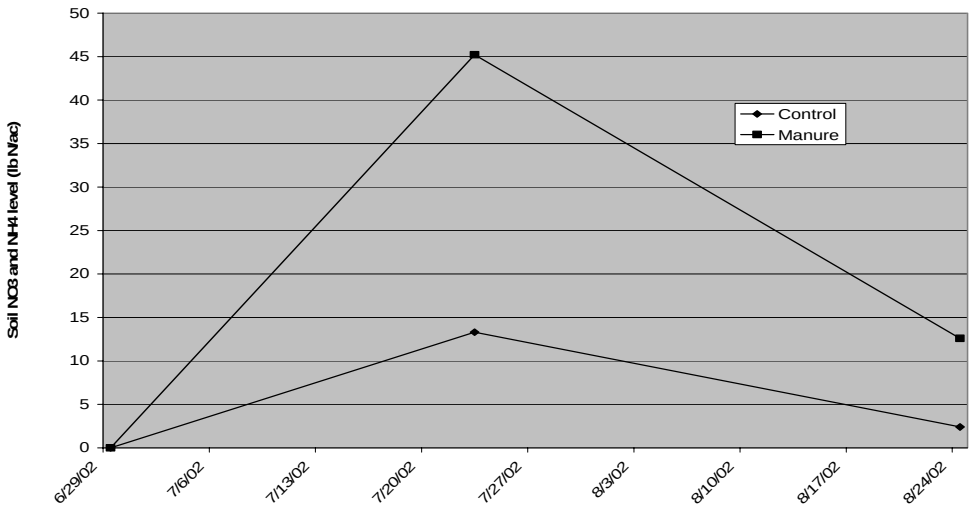
At this rate, the applied nutrients would be:

Total Nitrogen	Available Nitrogen	Phosphorus (as P2O5)	Potassium (as K2O)	Calcium	Magnesium
370	300	250	160	150	36

Soil Nitrogen Levels (see Figure 1)

At the time of soil sampling on July 23, an increase in soil nitrogen of about 32 lb N/acre was noted for the poultry manure treatment. This additional nitrogen would likely translate into a higher crude protein level for the harvested hay crop. Crop samples were not taken for analysis so such higher protein levels could not be verified.

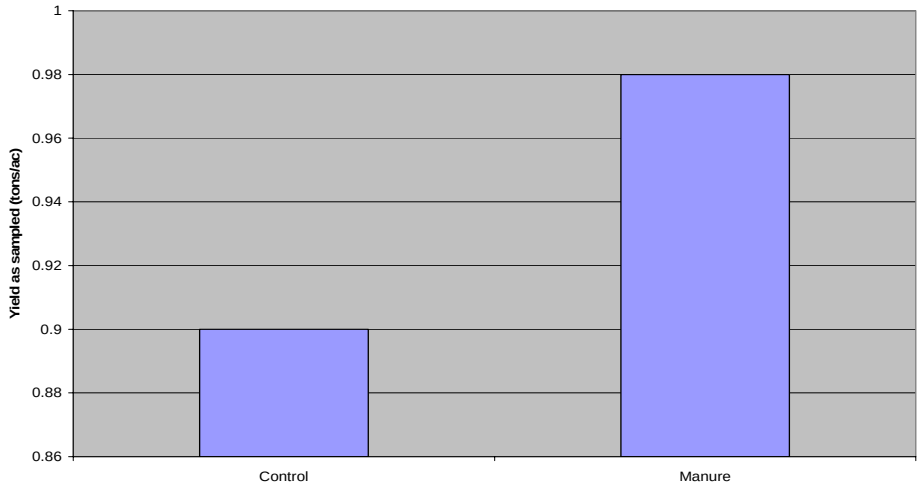
Figure 1 Ken White Ranch 2001 - Soil NO3 and NH4 levels



Crop Yield

Yields (Figure 2) did not differ between the two treatments to any large degree; the control yielded about 0.9 tons/acre while the manure treatment was about 1 ton/acre. Both treatments showed low yields probably indicating the condition of the grass stand. The trial location was in a field with an older grass stand that was probably in need of rejuvenation.

Figure 2 Ken White Ranch - 2001 Hay Yield



Grass species present did not appear particularly responsive to fertility additions in that after manure addition, a definite greening effect was noted for the manure treatment, however this did not translate into large yield increases.

Certainly, soil fertility levels increased (as noted by higher soil nitrogen levels) which likely increased crop quality for the manure treatment, but not yield.

Conclusions/Recommendations

In this trial, poultry manure application did increase crop yield, but not significantly. It is suspected that the method by which yield was measured may not be accurate enough to adequately detect changes due to treatment.

Soil nitrogen levels ware significantly increased over that of the control through manure addition. Through the higher levels of soil nitrogen, crop quality was likely increased, although this was not tested in this trial.

In the future, to get full value from manure addition, the grass stand should be reseeded with varieties responsive to fertility additions.