

## Thicker Pasture study – Alderson Dairy

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Thank you for your work in the pasture study this summer. We looked at the effects of the addition of a Thicker Pasture formulation of microbes marketed through the Thicker Pasture

<i>Treatment list</i>
Thicker Pasture only
21-0-0 only
21-0-0 with Thicker Pasture
16-20-0 only
16-20-0 with Thicker Pasture
Control

Company. The intent of the project was to look at the effects of the microbe product on pasture production and species composition. We also evaluated the Thicker Pasture product in conjunction with and without fertilizer. We use ammonium phosphate sulfate (16-20-0-13) and ammonium sulfate (21-0-0-24) as fertilizer sources. Both fertilizers were applied at 200 pounds per acre.

Each treatment was 10 feet wide and 145 feet long. In order to account for the difference in production throughout the field we repeated the treatments three times by developing three full blocks of treatments with treatments randomly allocated in each block.

Plots were set up and sprayed with Thicker Pasture on July 18<sup>th</sup>, 2012.

The pasture was irrigated the next day, ensuring the microbes were incorporated into the soil. We then allowed the microbes to become established for a month before continuing treatment applications. Fertilizer was applied on August 16<sup>th</sup> and the entire treatment area was grazed to a uniform level on August 18<sup>th</sup>. The field was not grazed again until after it was monitored. The field was monitored on September 19<sup>th</sup>.

### Plot layout

block 3	Thicker Pasture only	Control	16-20-0 only	Thicker Pasture + 16-20-0-13	Thicker Pasture + 21-0-0-24	21-0-0-24 only
block 2	16-20-0 only	Thicker Pasture + 16-20-0-13	21-0-0-24 only	Thicker Pasture + 21-0-0-24	Thicker Pasture only	Control
block 1	21-0-0-24 only	Thicker Pasture + 21-0-0-24	Thicker Pasture only	Control	Thicker Pasture + 16-20-0-13	16-20-0 only

We did notice a significant difference in production based on our treatments.

<i>Treatment*</i>	<i>Treatment average lbs/acre</i>
21-0-0 only	2370
Control	2374
Thicker Pasture only	3400
21-0-0 with Thicker Pasture	3433
16-20-0 only	3498
16-20-0 with Thicker Pasture	3879
*Treatments with the same color were not statistically different	

The only treatment that did not exhibit a response over the control was the treatment of ammonium sulfate (21-0-0-24). There was no significant difference between the control and the treatment of ammonium sulfate. This was likely due to the pasture having a large legume component (40% white clover) that was already fixing nitrogen, thus the addition of 42 pounds per acre of nitrogen did not

<i>Treatment</i>	<i>Average cover for white clover</i>	<i>Statistical significance – treatments with the same letters are not different</i>
Thicker Pasture only	32%	a
21-0-0 only	35%	a
21-0-0 with Thicker Pasture	35%	a
16-20-0 with Thicker Pasture	43%	ab
Control	43%	ab
16-20-0 only	52%	b

make an increase in production. It does appear that the addition of 40 pounds per acre of phosphorus (ammonium phosphate, 16-20-0) did have an increase in production over the control. Likely, the clover responded to the increase in phosphorus.

The addition of Thicker Pasture did appear to raise the pasture production by slightly over 1,000 pounds per acre. There was no significant difference between the treatments of the Thicker Pasture alone, or in combination with fertilizer. In this field trial it appears that a combination of phosphorus fertilizer and the Thicker Pasture were not necessary, but rather a use of one or the other could produce the same result.

Our treatments had a significant effect on the pasture cover of white clover (see table to the left). The treatment of ammonium phosphate significantly raised the clover composition over the fertilizer treatments that used ammonium sulfate (52% vs. 35%). It is not clear that the

Thicker Pasture product had any effect on white clover plant cover.

With the exception of white clover, the treatments in this project did not exhibit significant effects on the pasture plant cover composition. The fact that the plants were established prior to treatment initiation probably had the most to do with this. Below is a summary of the average composition of the sampled pasture.

Percent cover of pasture forage species over the entire treatment area*							
bareground	Slender aster	ryegrass	Orchardgrass	Dallisgrass	Fescue	Bermuda	annual grasses
0.00	0.00	15.42	0.00	33.02	8.69	0.00	0.69
white clover	red clover	trefoil	plantain	bindweed	Chicary	Smutgrass	Dock
40.09	0.00	0.00	0.64	0.00	0.36	0.11	0.69

\*Plants with 0% values appeared in the pasture, but were too infrequent to make up a sizable composition

These treatment responses, particularly in production, lead me to believe that further investigation in the use of this product is warranted. Thank you again for your valuable help in producing this research!