

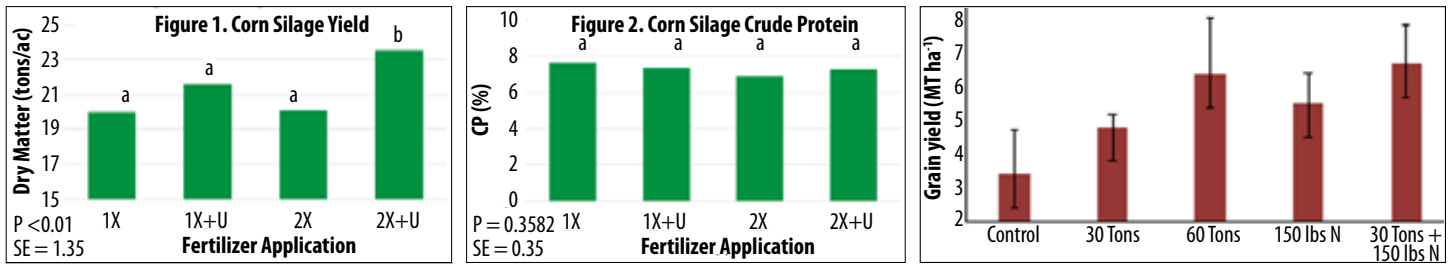
WISCONSIN—Students Training & Preparing to Enter the Work Force Through Applied Research
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A second year of research on farmers real issues continues with funds from an AFRP (USDA NIFA) grant, providing an opportunity for UW-River Falls students to conduct applied research. Many dairy farms use manure and an inorganic nitrogen (N) fertilizer routinely without knowing the cost benefits or added nutritive value. Knowing this can improve management of these resources. Following are selections from ongoing projects:

Forage evaluation & nutritive value – year 2 of fertilizer source effect on corn silage nutritive value. Results from 2018 support the previous year’s conclusion showing high applications of manure (60 tons/ac) may not be necessary to increase CP, but the low rate (30 tons/ac) tested plus urea (110 lbs/ac) can help farmers make economical and environmentally friendly decisions on fertilizer applications that can still maximize their silage output.

Dairy manure effect on soil fertility & soil health. Research has included many studies: evaluating variability of corn growth and yield response as a function of split-applied N; effect of manure on soil health and fertility; and, evaluating effects of spent grain and brewery waste water on corn growth and yield. In our study evaluating effect of dairy manure on soil health and fertility, soil samples were collected pre-plant and one week before harvest. We included 5 treatments: control (0 manure/0 N); 30 tons/ac of applied manure; 60 tons/ac manure; 150 lbs N/ac applied as urea (46-0—0); and 150 lbs of N and 30 tons of manure per acre. Results showed the treatment with 30 tons and 150 lbs N per acre had the highest yield. This treatment also had the most CO₂ flux increase (data not shown). Conclusion – higher rates of manure and manure w/inorganic N have the most benefits to soil health and fertility in comparison to inorganic N alone.

Figures 1 & 2. Year 2 evaluation of corn silage yield & CP as affected by 30 tons/ac (1x) manure application and 60 tons/ac (2x) manure application with and without 110 lbs urea/ac.



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