Wisconsin - Corn Silage Complements Alfalfa Silage for Dairy Cows

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A study was conducted to determine the effects of different dietary ratios of alfalfa silage (AS) to corn silage (CS). The study used four different diets and 28 lactating Holstein Cows. Diets averaged 17% CP, 49% NFC, and 24% NDF. Diet ingredients (% of dry matter) included in the study were alfalfa silage, corn silage, high-moisture shelled corn, and soybean meal (Table 1).

Results show milk production, dry matter intake, milk fat content, and digestibility of both neutral and acid detergent fiber decreased when CS replaced AS. Decreased fiber digestion and milk fat may have been due to increasing fluctuation in ruminal pH. However, N efficiency increased and N excretion in manure decreased as CS replaced AS.

Production was depressed on the diet highest in CS. No diet minimized N excretion without negatively affecting production. The 24:27 AS:CS diet was the best compromise for improved N efficiency and sustained production. Since it complements AS, CS should be fed in AS based diets to maintain milk production and improve N utilization.

Table 1. *Diet ingredients (% of DM)*

Diet	Alfalfa Silage	Corn Silage	High-Moisture Shelled Corn	Soybean Meal
A	51	0	43	3
B	37	13	39	7
C	24	27	35	12
D	10	40	31	16

Table 2. *Varying dietary ratios of alfalfa silage to corn silage (AS:CS) and their effects on cows.*

Item	51:0	37:13	24:27	10:40
DM Intake (lbs/day)	59	58	56	52
3.5%-Fat Milk (lbs/day)	95	94	89	85
Milk Fat (%)	3.8	3.6	3.4	3.3
NDF Digestibility (%)	39	37	36	31
ADF Digestibility (%)	41	41	39	33
Total N Excretion (g/day)	490	480	430	400
N Efficiency (lbs milk:lbs N Excreted)	86	90	99	101