

Shelled Corn, Ear Corn and Snaplage - What's the Difference?

Often times dairy producers who are low on corn, look to High Moisture Ear Corn or Snaplage to extend their feed supply. HM Ear Corn and Snaplage will extend tonnage -- but what is the nutritional value of each? How much effective-fiber does the cob and husk provide in the ration?

First, let's define exactly what each feedstuff contains.

High Moisture Shelled Corn - basically clean corn grain harvested at an increased moisture level (25%-30%).

High Moisture Ear Corn - corn grain and cob only (27%-35% whole ear moisture) - usually harvested with a corn husker or combine with special sieves.

Snaplage - corn grain, cob, husk, and some stalk material (27%-38% moisture) - usually harvested by placing a combine header on a forage harvester.

As you include more plant material along with the corn, the overall energy level (Mcal) decreases due to the dilution of higher energy grain with lower energy parts such as cob and husk (Table 1)

Table 1 - Average nutrient composition of high moisture shelled corn, high moisture ear corn, and snaplage.

	High Moisture Shelled Corn	High Moisture Ear Corn	Snaplage
Dry Matter (DM) %	72	72	62
Crude Protein % of DM	10	8.9	8.7
NDF, % of DM	11	27	32
Lignin, % of NDF	3	7	8
Fat, % of DM	4.3	3.7	3.6
NE (L) (Net Energy) (Mcal/lb DM)	0.92	0.80	0.75

Effective fiber increases chewing, rumination, and production of saliva to buffer the rumen and prevent acidosis. What determines whether the fiber in a feedstuff is "effective" or not depends on particle size, fiber digestibility, and bulk density. Ground HM Ear Corn and Snaplage have little effect on chewing because of the small particle size and increased rate of passage. While HM Ear Corn and Snaplage will increase the overall fiber level of a ration, they contribute little to effective fiber.

Recommended Neutral Detergent Fiber (NDF) levels for high producing dairy cows are 25% to 30% of the ration dry matter, and 30% to 36% for mid or late lactation cows. HM Ear Corn and Snaplage contain higher levels of NDF than HM Shelled Corn. Included in this increase of NDF is an increase of lignin, which is completely indigestible by animals.

Table 2 shows three separate rations, one with HM Shelled Corn, one with HM Ear Corn, and one with Snaplage. As you can see, the overall net energy per pound is decreased with Ear Corn and Snaplage, while NDF is increased. This decrease in overall net energy will not support the desired 100 lbs. per day which the ration was originally formulated for. The addition of more corn to offset this decrease in energy can result in unnecessary gut fill and hamper intake on high producing dairy cows. HM Ear Corn may supply the necessary energy for mid to late lactation, lower producing cows, but not for high producing, early lactation animals.

Along with this increased energy also comes starch which is more soluble in the rumen. However, one must be cautious to not overfeed this readily available starch and cause an acidosis condition in the rumen

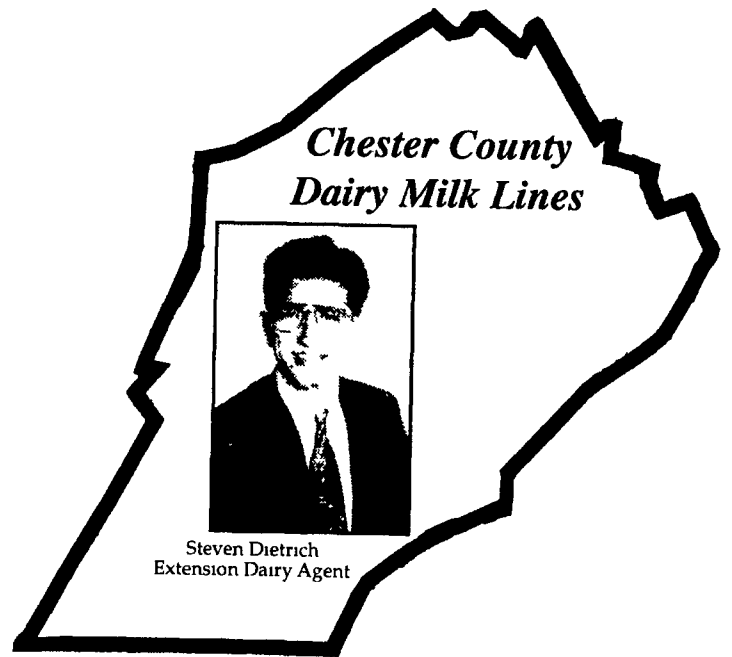


Table 2 - Rations in which HM Shelled Corn is replaced on a pound-for-pound basis with HM Ear Corn or Snaplage (formulated for a 1350 lb. Holstein cow producing 100 lb. of milk at 60 days in milk).

	Pounds of Dry Matter (DM) Ration 1	Pounds of Dry Matter (DM) Ration 2	Pounds of Dry Matter (DM) Ration 3
High Moisture Shelled Corn (0.92 Mcal/lb)	15	0	0
High Moisture Ear Corn (0.80 Mcal/lb)	0	15	0
Snaplage (0.75 Mcal/lb)	0	0	15
Alfalfa Haylage	15	15	15
Corn Silage	10	10	10
Whole Cottonseed	6	6	6
Protein Supplement	8	8	8
Mineral and Vitamin Premix	1	1	1

	Ration Composition	Ration Composition	Ration Composition
NE(L) (Net Energy Mcal/lb)	0.80	0.76	0.75
NDF (% of DM)	27	34	37

Basically, considering the lack of effective fiber, low digestibility of fiber from the cob and husk, High Moisture Ear Corn and Snaplage is not as efficient as High Moisture Shelled Corn in normal corn silage/haylage rations for high producing dairy cows

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