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Harvesting and Feeding High Moisture Corn, Ear Corn and Snaplage

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High moisture corn, high moisture ear corn and snaplage provide potentially lower feed costs as well as feeding and harvesting flexibility. High moisture corn and high moisture ear corn have been popular for a long time. Improved harvesting equipment such as snapper heads and kernel processors are fueling a renewed interest in snaplage.

High moisture corn is, as the name implies, corn harvested before the kernels dry down, usually processed by a roller mill or hammer mill, packed into an appropriate structure and allowed to ferment. High moisture ear corn is similar to high moisture corn but it includes some portion of the cob. Snaplage includes the grain, cob, and shuck (husk).

Advantages of high moisture corn, high moisture ear corn and snaplage include:

- The elimination of drying costs
- The ability to harvest high moisture corn 2 to 3 weeks earlier than dry corn. Often high moisture corn is harvested between corn silage and dry corn.
- The ability to utilize an immature crop
- Field losses decreased by 3 to 6 percent
- Earlier availability of stalk grazing
- The ability to minimize sorting by adding moisture to the diet

Disadvantages include:

- Less grain marketing flexibility
- More storage facilities and equipment required
- Potentially higher spoilage and storage losses
- More likely to be associated with acidosis in a feedlot setting. High moisture grains are rapidly fermentable.
- Snaplage may appear stringy. Sorting can increase if the cob and husk portion of high moisture ear corn or snaplage are not chopped fine enough.

The chart below shows the approximate dry matter composition of the different products.

Dry Matter Composition of High Moisture Corn, Ear Corn and Snaplage

	High Moisture Corn	High Moisture Ear Corn	Snaplage
Corn, %	100	84 - 90	75 - 80
Cob, %	0	10 – 16	10 - 15
Husk, %	0	0	5 - 10
Crude Protein, %	9.5	9	8.5

Advantages of high moisture ear corn and snaplage over high moisture corn include:

- Increased tonnage harvested per acre
- Digestible and effective fiber – all the components of high moisture corn, high moisture ear corn and snaplage are highly digestible. Corn cob and husk have the added benefit of containing effective fiber. Effective fiber helps protect the rumen from acidosis. The effective fiber contained in these ingredients reduces the amount of forage that needs to be included in the ration to maintain optimal rumen health.

Disadvantages include:

- Mycotoxin concentration in the cob portion. Avoid harvesting moldy or damaged corn as ear corn or snaplage
- The need for increased storage capacity to handle the extra volume coming from the cob and husk.

All high moisture corn feedstuffs must be harvested at an appropriate moisture level and properly ensiled. The corn cob contains higher moisture than the corn grain so high moisture ear corn and snaplage should have higher moisture levels than high moisture corn by itself. Cob digestibility falls off dramatically as the crop matures and moisture levels fall. Moisture testers are available to estimate the moisture of the corn grain. On average snaplage will run about 5% higher moisture content than high moisture corn. Ideally snaplage will be harvested when the corn grain itself tests over 28% moisture.

Ideal moisture levels

High Moisture Corn - Bunker, %	26 – 32
High Moisture Corn – Oxygen Limited Silo , %	22 – 26
High Moisture Ear Corn, %	28 – 32
Snaplage, %	35 – 38

High moisture corn can be stored either whole or ground and in upright or bunker silos. Whole high moisture corn is commonly stored in upright silos. High moisture corn should be ground if it is to be stored in a bunker silo. There is no advantage to grinding high moisture corn beyond the ability to store it in bunker silos. High moisture ear corn needs the cob fraction to be reduced to ½ inch or less to insure adequate packing and consumption by the animals.

High moisture feedstuffs have different feeding characteristics compared to similar dry feeds. High moisture corn ferments faster in the rumen than dry corn and traditionally was thought to add to the difficulty of getting animals started on feed and offer slightly less performance especially early in the feeding program. Currently, the popularity of corn distillers grain and corn gluten feed programs have minimized or eliminated that concern. The lower starch content of corn coproduct based diets decreases the risk of rumen acidosis. High moisture corn may be more valuable in modern corn coproduct diets than in traditional corn pellet diets. Combinations of dry corn and high moisture corn offer 5 to 10 percent greater weight gains and feed efficiencies than either one alone.

High moisture ear corn offers 6 to 10 percent greater feeding value than dry ear corn. High moisture ear corn and snaplage include a digestible fiber portion and a rumen effective fiber portion that helps meet the roughage needs of the animals.

Inoculants and preservatives are not discussed in this paper but they do present an added opportunity to decrease storage losses and add to feeding value. Inoculants and preservatives add value to all high moisture grains.

High moisture corn products have many advantages and are excellent feeds for beef cattle. Preharvest planning allows producers to optimize the moisture and fiber content in their diets and provide optimum combinations of dry and high moisture grains for maximum performance.