

Opportunities, Risks and Challenges in Harvesting, Storage and Feeding of Snaplage

Increased use of high capacity field harvesters equipped with kernel processors, combined with custom harvesters desiring to get more use out of equipment, has enabled the product known as snaplage to make a comeback. As with any other forage or grain produced on-farm, the decision to put up snaplage should be carefully considered prior to harvest season. Consideration needs to be given to proper processing, storage capacity at the farm, strategies to ensure adequate feedout rates, and if snaplage fits the harvest routine of yourself or your custom harvester. Ultimately, the decision to harvest snaplage depends on if snaplage fits the diets and production goals for your farm. Discussions should include your custom harvester and nutritionist to make sure everyone understands the opportunities, risks and challenges of this unique product and parameters are set prior to harvest.

Snaplage consists of the corn grain, cob, husk and some upper plant parts. It is harvested with a silage chopper equipped with a snapper head and processed with an internal processor. In contrast, earlage is picked or combined to save a portion of the cob and then processed through a grinder or roller mill. As previously stated opportunities and risks need to be carefully weighed on each farm to determine if snaplage fits.

Advantages of snaplage

- Earlier harvest than dry corn
- Harvesting and processing happens in one operation, allowing for a quicker process
- Harvesting economics favor harvesting with a field chopper versus combining
- Increased yield per acre versus high moisture or dry corn
- Ability to spread manure on land earlier
- Land is available earlier for fall seeding
- Starch is ruminally available

Disadvantages of snaplage:

- Very narrow window available to put up at optimal moisture (many nutritionists prefer 35-40% moisture; field recommendations vary between 32-45%)
- Comes immediately on the heels of corn silage harvest (custom harvesters may not have machinery converted when snaplage needs to be harvested)
- Variability of product depending on how much cob, husk harvested
- More storage capacity needed
- Potential sorting of cob, husk and kernel, both in storage and in the feedbunk if not harvested/processed properly
- Stability in storage can be an issue; cob has potential to bring in more mold and mycotoxin



- Harvest moisture, pack density and feed-off rate are critical to maintain stability in storage and feed out
- Lower energy than high moisture corn due to fiber from cob
- Requires some diet flexibility for optimal profitability

Harvest and storage

While a major advantage with snaplage is the ability to harvest earlier, the window to get snaplage up is fairly narrow. Field recommendations for snaplage moisture range from 32-45%. In general, the wetter the product, the easier it is to store - particularly in bunker silos - but the more difficult it can be to feed. The most common and costly error is to get it too dry. This can have potentially negative effects on palatability, fermentation, yeast and mold growth in storage. In return, these factors negatively impact stability, starch and cob digestibility, and sorting issues.

One of the concerns with custom harvest is snaplage comes immediately following corn silage, thus many operators are still doing corn silage when snaplage harvest needs to occur. Thus, a discussion with all parties involved in harvest needs to take place to make sure machinery will be available when snaplage is ready. Harvest for snaplage should commence when the kernel is at or close to physiological maturity or black layer. For most hybrids, this means the kernel moisture will be at 32-36% moisture. Since the cob is wetter, a rule of thumb is to add 4 to 6 points to reach the final snaplage moisture. Thus, if kernel moisture is at 35%, the approximate moisture of snaplage will be about 40%. It is critical to use an accurate kernel moisture tester and verify it with a certified tester available at most grain receiving facilities. The amount of cob, husk and plant material can vary in the final product due to hybrid difference and settings on the snapper head.

In general, work done to date would suggest cob fiber digestibility is similar to average haylage digestibility - somewhere around 50-55% NDFd. As the corn ear matures, cob digestibility declines quickly. While some hybrids promote increased cob digestibility more suitable for snaplage, the author has not seen any work published to date.

As with any ensiled forage or grain, whole crop moisture influences proper fermentation and porosity (air spaces). Too dry (less than 35%) can result in less than ideal fermentation and oxygen infiltration. The addition of the cob and husk makes for a more inconsistent product and can result in separation within the storage unit. As the product gets drier, it gets more difficult to get a uniform particle size and this can contribute to product variability and resulting “trashy” look. This variability is particularly noticeable for upright units with a poor distributor.

The addition of the cob increases the risk for the introduction of molds and/or mycotoxins since mold formation often begins at the cob and moves up into the kernel. In years when mold counts have the potential to be high or when working with a stressed crop, some producers have elected to forgo snaplage in favor of high moisture or dry corn to minimize this risk. Another tactic producers have employed to reduce the potential risk of molds and mycotoxins forming in the field is the use field fungicides. Other producers feel it is advantageous to harvest fields for snaplage that are planted following another crop to lower potential contamination. It is highly recommended to use a proven inoculant like Crop-N-Rich Stage 2 that applies high numbers of *L. buchneri* to



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lessen the risk of yeast and mold contamination. *L. buchneri* has proven to increase snaplage stability and help control heating during feedout, particularly in the warmer summer months.

Due to the potential for poor bunklife, it is recommended to feed off a foot or more of snaplage due to its potential to heat, particularly in summer. Since well-packed snaplage will average 30 to 40 pounds DM/cu. ft., feed off will limit how snaplage is stored on many farms. On many farms, utilizing a bag or upright unit is the only way to achieve adequate feed-off.

Feeding

While much has been written on how to harvest snaplage, less has been written on feeding it to high producing dairy cattle. Snaplage put up at 35-45% moisture feeds similarly to high moisture corn and the starch contained in corn silage. The starch tends to be highly available and, like high moisture corn and corn silage, tends to increase in rumen availability over time. In contrast to moisture recommendations for storage, many nutritionists find it a challenge to feed snaplage over 40% moisture and prefer snaplage moisture in the 32-40% range. They cite the ability to maintain butterfat - particularly on high corn silage diets and during summer months - as a concern.

To minimize some of these challenges, some nutritionists and producers have elected to only feed snaplage during the cooler winter months and move into a less ruminally available starch source during summer. This has the added advantage of reducing the potential of storage losses. Others have reported that harvesting snaplage a bit on the drier side (32-40% moisture) and storing it in bags versus bunker silos has been advantageous. In all cases where diet digestibility is high, nutritionists want the flexibility to feed more dry corn. In situations where fat test and rumen function is compromised, flexibility is key to getting the maximum economic benefit from snaplage and avoid costly problems.

While moisture infiltration is a concern with any feedstuff, it is particularly troublesome with high starch feedstuffs. It is imperative to make sure water infiltration is controlled by diligent bunker cover and bag maintenance. Additionally, bunker faces may need to be protected during periods of high rainfall or snow melt. High moisture corn and snaplage that gets wet feeds similar to wet flour and severe digestive upsets and even cattle deaths have been reported when even seemingly small amounts get into the diet.

Summary

The decision to harvest snaplage needs to be carefully thought out to ensure optimal farm profitability. Inclusion of key members in your decision making will help identify the potential opportunities, risks and challenges of this unique product and determine if snaplage fits into your farm's harvesting, production and, ultimately, economic goals.



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