

## **FACT SHEET 4: Industry snapshot**

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As part of this project, a survey was conducted on corn silage growers in the Northeast. A summarization of some of the main points from the survey may be useful to other producers as they consider management related to corn silage harvest and kernel processing.

### **KERNEL PROCESSOR ADOPTION**

83 percent of survey respondents reported that the harvester used to harvest the majority of corn silage on the farm had a kernel processing unit. This suggests that 17 percent of respondents are not using this technology and implementation represents a major opportunity area on these operations.

Optimizing the benefits of kernel processing on a farm requires looking at all aspects of the feeding system. Increased accessibility of the starch will need to be accounted for by adjusting the total diet accordingly.

### **PROCESSOR TYPE**

In a traditional harvester, corn flows through a cutter bar that chops the whole plant into small pieces (of a pre-determined length based on the adjustment of the cutter bar) and then the small pieces go through the processor unit, which acts to crush the kernels that are within the mass of plant material. An alternative to this method is known as shredlage<sup>®</sup>, which is a process where the plant material is shredded into longer pieces (instead of cut), while still working to crush the kernels. When asked what style of processor each harvester was equipped with, 86 percent of respondents reported use of a traditional processing unit while 14 percent reported use of a shredlage<sup>®</sup> unit. All of the shredlage<sup>®</sup> units were on self-propelled harvesters.

### **EQUIPMENT UPGRADES AND MAINTENANCE**

It is common for a harvester to be purchased with a kernel processing unit installed; however, older units may have been purchased without a processor or in other cases, a farm may opt to purchase an aftermarket unit to achieve better processing performance than the factory unit. In the survey, 58 percent indicated the processor was original to the harvester and the remainder indicated the harvester contained an aftermarket unit.

*During the 2018 and 2019 growing seasons the New York Farm Viability Institute funded a project led by Cornell PRO-DAIRY to better understand a number of field factors related to CSFS. Project collaborators include: Cornell Cooperative Extension, Miner Institute, SUNY Morrisville, Cornell University Ruminant Center, Corteva Agri-Science, Seedway, Dairy Support Services, Pominville Dairy, Hilltop Divine Dairy and Kingston Farm.*

When asked if the processor had been modified to improve performance, 41 percent of respondents said yes, while 59 percent said no. Questions about common practices to adjust and upgrade aspects of the processor were also asked. The main adjustments include changing the speed differential between the two rollers and upgrading the belts and pulleys that drive the rollers to reduce slippage and increase roller consistency. Of the respondents who indicated making adjustments, 90 percent reported making adjustments to the roller speed differential while 50 percent reported modifications to the belt and pulley system.

## **PROCESSOR MAINTENANCE**

The rollers in the processor do wear out over time and need to be replaced. Respondents were asked how roller wear is tracked with the options of tracking 1) by the acre, 2) by harvester's hours, 3) by tons harvested and 4) other. With these options, 53 percent reported tracking by acres harvested, 20 percent use hours of harvesting and 27 percent track by tonnage.

When asked if there was a certain number of acres, hours, or tons when rollers were replaced, the answers varied widely, with no consistent answer. The answers ranged from visual inspection to a calendar approach to a defined tonnage.

Notes in some text comments were based on monitoring performance, indicating that the farm is monitoring the harvested material for kernel processing and if the chopper is no longer able to hit the goals for kernel breakage in the chopped forage then the rolls are changed.

## **PROCESSOR PERFORMANCE MONITORING**

It is recommended to routinely monitor performance to understand if the processor needs to be adjusted or, as indicated above, components such as the rollers replaced.

In addition to standardized laboratory methods to assess kernel processing, commonly referred to as kernel processing score (KPS) or corn silage processing score (CSPS), there are in-field methods for quick assessments. These methods are outlined [in the first article](#) of this series.

When asked how often processing was checked during the season, just over 50 percent of respondents reported continuous monitoring, 30 percent reported two to four times, 11 percent reported only checking it at the beginning of the season, and 7 percent reported not checking it at all.

When asked what method was used to monitor processing, the highest response was “eyeball it” at 44 percent. Following that, 26 percent reported using the 32 oz cup method, 18 percent the PSPS, 4 percent the bucket and water method, and 7 percent responded “other”.

All operations should strive for continuous monitoring and implement farm specific plans that make it achievable (see [Corn silage kernel processing](#)).

While sending samples to the laboratory during harvest may not provide timely data to make adjustments, it is still the best method to determine overall performance for the season with a standardized technique. Respondents were asked if they or a farm consultant sent samples to a laboratory for analysis. For this question, two thirds of respondents reported sending samples to a laboratory. Of those reporting that samples are sent to a laboratory, 76 percent reported sending in fresh samples, and 94 percent reported sending in fermented samples at feed-out.