

# Curious corn crop of 2019 by the numbers

John Goeser for *Progressive Dairy*

## AT A GLANCE

Samples from the 2019 corn crop compared to previous years prove that generally starch content is higher and fiber levels are lower.

Approaching Christmas in 2019, there were still fields yet to take off as high-moisture corn, snaplage or earlage – and even corn silage, if you can believe it. The 2019 corn crop seems like my preschool- and kindergarten-aged kids, evolving and changing from day to day with new experiences. Yet there are now enough samples in the feed analysis laboratory databases that we can

draw summaries for the season.

There were multiple different factors at play for farm-grown forages and grains in the silos. The growing season was tumultuous for many. Delayed or prevent plant situations resulted in variable crop emergence. Then, continued wet and cooler weather as the season progressed equated to growers recognizing substantial variation

in yield and quality within fields. Later, the harvest season proved to pour added challenges for many, with cooler wet weather delaying or preventing crop maturation and harvest.

As mentioned above, there were considerable corn and soybean acres standing for the holidays. With the desire to not focus on the challenges but gather the information we now have in hand and project resulting nutritive quality, let's review the crop nutritive value for many U.S. dairies.

### Corn silage crop quality for East to West growers

A majority of energy per ton comes from fiber and starch in silage and swings in performance result from changes in both nutrient content (i.e., grain-to-stover ratio) and nutrient digestibility (fiber or starch digestibility). Thus, we can take a look at energy value per ton for samples submitted to date by comparing and contrasting several growing season results for Eastern, Midwestern and Western dairies.

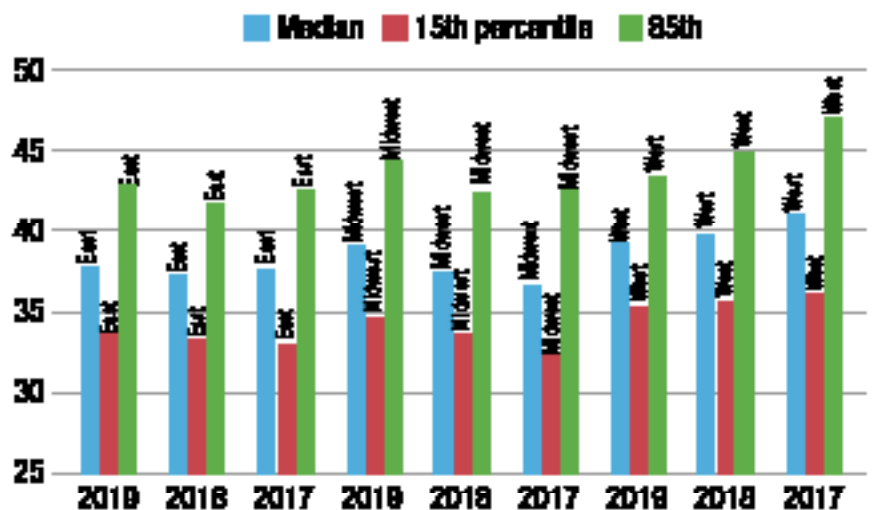
The statistics tool within the [www.rockriverlab.com](http://www.rockriverlab.com) client portal provides a quick and efficient way to run database queries for all samples analyzed by Rock River Laboratory. In about 10 minutes, I was able to generate the data table needed to put the following graphics together for discussion and evaluation. **Figures 1 through 4** are all presented in a similar fashion, with the median nutritional value highlighted in blue and then the 15th and 85th percentiles shown in red and yellow, respectively.

For eastern U.S. dairies, fiber content is slightly up (Figure 1), with grain and starch yields slightly down (Figure 2) for 2019 corn silage relative to 2017 or 2018. These factors equate to less energy per ton because fiber always carries about half the energy starch does. Then combine this observation with slightly lesser fiber digestibility (Figure 3) and slightly increased rumen starch digestibility (Figure 4); we should expect a slight drop in quality on average for 2019 silage relative to the prior two crop years.

For mid-western U.S. dairies,

FIGURE 1

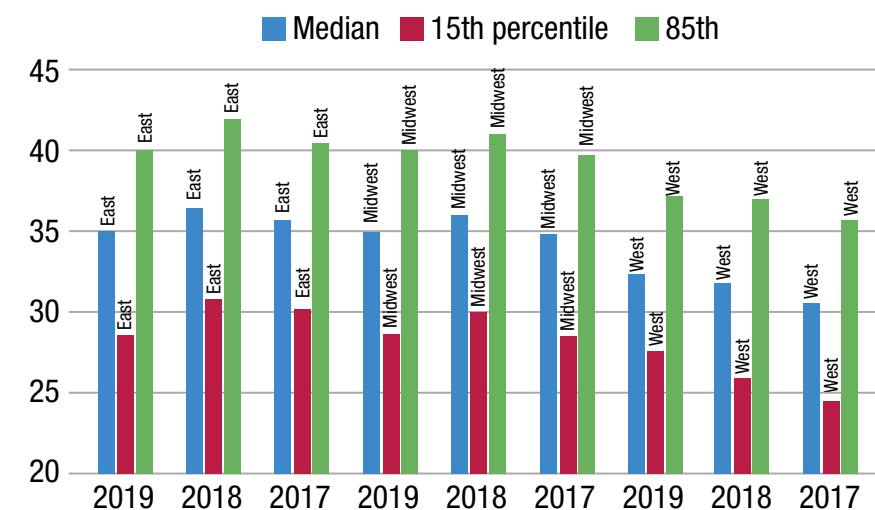
Corn silage fiber content for 2017 to 2019 crop years, for Eastern, Midwestern and Western U.S. samples analyzed



Corn silage aNDF, % DM

FIGURE 2

Corn silage starch content for 2017 to 2019 crop years, for Eastern, Midwestern and Western U.S. samples analyzed by Rock River Laboratory, Inc.



Corn silage starch, % DM



**Since 1967,**  
we've been committed to  
building long-lasting relationships  
and high performance machinery.

As we continue to grow and move forward,  
we want you to farm smarter with our most  
reliable and innovative farming equipment!

**For 2020 H&S Introduces the NEW  
"BLACK" Line of Forage Boxes!**

For more  
information on  
the NEW "BLACK"  
Forage Boxes,  
check out the  
DEALER LOCATOR  
on the H&S  
website for your  
nearest dealer!

**NEW FEATURES INCLUDE:**

- "Swept-Back" unit look/design
- 5200 & 6200 Series are available in Apron or Twin Auger unload systems
- Faster unload time (nearly 50% faster than the XCAP design) with the smoothest unloading system on the market
- Easy install 4th beater option
- Spring loaded tighteners on the beater drive chains
- Remote grease zerks for the beater bearings
- 5200 Series features a removable roof
- Standard 24" spring assist extension has the ability to tip **DOWNWARD** 22 degrees on the 5200 & 6200 Series Hydraulic Tilt is optional



[hsmfgco.com](https://www.hsmfgco.com)  
715.387.3414



*With ear and stalk rots having come on strongly during the back half of the growing season, mold, wild yeast, mycotoxin load and potential bacterial contamination from soil or mud could be factors that rob your cows from capturing the full energy value per ton.*

the trends are similar to the East – however, with a more pronounced increase in fiber content (Figure 1) with less grain per ton (starch content, Figure 2) and tough growing conditions recognized for many in this region. Fiber and starch digestibility appear slightly increased for 2019 relative to the prior two crop years, somewhat offsetting the potential energy losses per ton due to fiber-to-starch ratios. However, the overall quality trend appears to be a slight drop in quality for the Midwest as well.

For western U.S. dairies, the 2019 crop bucks the trends portrayed by samples for the rest of the U.S. as we recognize greater starch content and less fiber (Figures 2 and 1, respectively).

Fiber digestibility has trended down slightly; however, starch digestibility appears to have offset the fiber quality dip, and in general we should expect better quality for 2019 Western silages.

Evaluating average begins to tell a story as the variation in the data should also be considered for year-over-year trends. There continues to be widespread forage analysis results across the U.S., with the only meaningful deviance appearing to be less spread (range from 15th to 85th percentiles) to the corn silage quality results for Western dairies and growers. This is logical, recognizing that many have corn under irrigation and thus are likely in a better position to manage quality through environmental factors.

With quality trends and variation discussed, recognize these comments relate to nutrition analyses and potential; however, we did not consider or discuss anti-nutritional. These are the curious factors alluded to previously. Undesirable feed hygiene factors are at play for many due to factors beyond our control (environment). With ear and stalk rots having come on strongly during the back half of the growing season, mold, wild yeast, mycotoxin load and potential bacterial contamination from soil or mud could be factors that rob your cows from capturing the full energy value per ton. Consult with your nutritionist and veterinarian if dairy performance and feed efficiency are not up to expectations relative



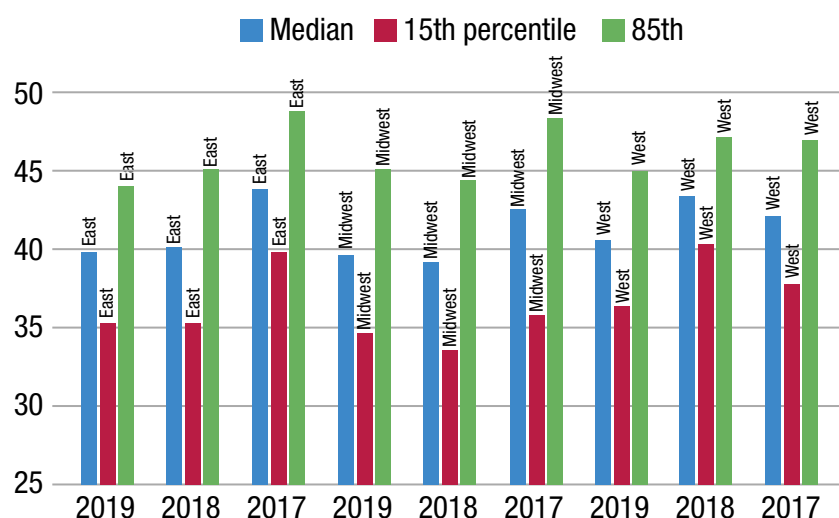
**John Goeser**  
Director of Nutrition,  
Research and Innovation  
Rock River Laboratory Inc.  
[johngoeser@rockriverlab.com](mailto:johngoeser@rockriverlab.com)

to both your results and those presented here. 🐮

*John Goeser earned a Ph.D. in animal nutrition from the University of Wisconsin – Madison where he currently serves as an adjunct professor in the dairy science department. He also directs animal nutrition, research and innovation efforts at Rock River Lab Inc. based in Watertown, Wisconsin.*

**FIGURE 3**

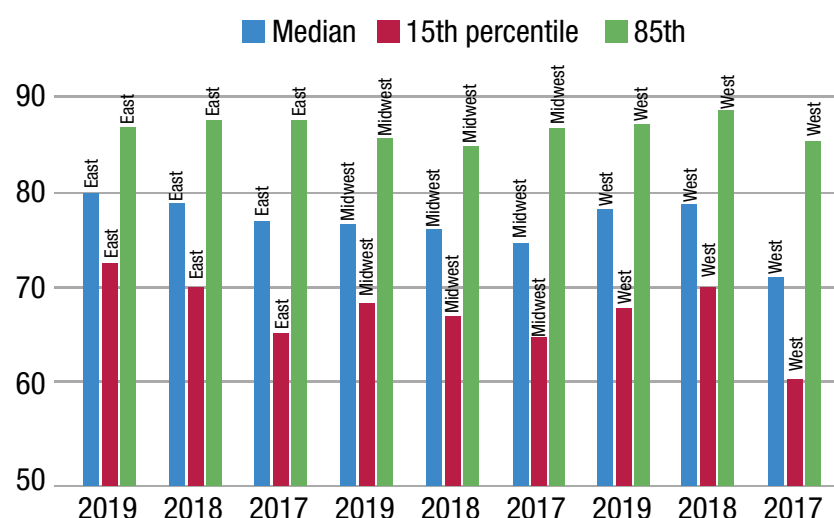
Corn silage fiber digestibility 2017 to 2019 crop years, for Eastern, Midwestern and Western U.S. samples analyzed by Rock River Laboratory, Inc.



Corn silage total tract NDF digestibility, % aNDF

**FIGURE 4**

Corn silage in situ rumen starch digestibility 2017 to 2019 crop years, for Eastern, Midwestern and Western U.S. samples analyzed by Rock River Laboratory, Inc.



Corn silage in situ rumen starch digestibility, 7h, % starch



**The widest variety in stanchion styles and sizes!**

**Milk Cows, Heifers, and Calves**

We make livestock handling dramatically safer for both cattle and handler. Our patented designs feature the use of few moving parts providing DURABILITY and a longer product life.

## DaSilveira Southwest, Inc.

*Leading the way Forward – Complete lock rails and parts available*



**We have 18 7/8" Top Openings!**

The widest opening on the market, allows easier access for larger cows and bulls.



**With our new Extra-Wide "Self-Locking Crown Stanchion" opening 18 7/8"** your cows will have more space to enter the stanchion without compromising spacing from hole to hole, along with the widest down cow release. Also our new innovative Lock-rail guide makes removing and installation of the locking mechanism easier. Available in 5 holes in 10' Cow size, and 6 holes in 10' Heifer size.

**The Originators**

Give us a call today and check out our prices.

**1-800-687-0843**

**[www.dasilveira.com](http://www.dasilveira.com)**  
[sales@dasilveira.com](mailto:sales@dasilveira.com)