Cornell Cooperative Extension
South Central NY Dairy and Field Crops Program
Broome | Cayuga | Chemung | Cortland | Onondaga | Tioga | Tompkins
DAIRY & FIELD CROPS DIGEST
July/Aug 2022

2021 Performance of Dairy Farm Business Summary Co-operators in South Central New York

By Mary Kate MacKenzie, Farm Business Management Specialist

Cornell Cooperative Extension farm business management educators work closely with dairy farm operators to complete Cornell University's Dairy Farm Business Summary (DFBS) on an annual basis. This article summarizes 2021 DFBS results for dairy producers from 11 counties across Central New York and the Southern Tier: Broome, Cayuga, Chemung, Chenango, Cortland, Madison, Oneida, Onondaga, Schuyler, Tioga, and Tompkins.

Dairy Farm Business Summary and Analysis (DFBS)*

The DFBS is open to any farm that wishes to participate, and participation is voluntary and confidential. Thirty-four dairy farms from this region completed the DFBS in 2021. We have two years of performance data from 32 of those farms, which also completed the DFBS in 2020. Dairies selling organic milk are not included.

Farm Size & Production Yields

In 2021, farms reported an average herd size of 1,054 cows, an increase of 2% from 2020. Herd size ranged from fewer than 265 cows to more than 2,100 cows. The average number of heifers per farm also increased, yet the average ratio of heifers to cows remained constant at 0.80 heifers per cow.

Average milk sold in 2021 was 29.3 million pounds per farm, a 3% increase over 2020. This jump reflects the 2% increase in herd size, plus a 1% increase in milk sold per cow. Average milk sold per cow was up 335 pounds, from 27,495 pounds in 2020 to 27,830 pounds in 2021.

Average tillable acres per farm increased by 3%, from 1,810 acres in 2020 to 1,861 acres in 2021. On average, dairy producers saw hay yields increase by 22% and corn silage yields increase by 6% in 2021 compared to the prior year.

Farm Labor

Dairies reported a 1% increase in worker equivalents per farm, on average, from 20.5 FTE in 2020 to 20.7 FTE in 2021. Labor efficiency also increased. The average number of cows per worker was 50.9 in 2021, up 0.7%, from the previous year. Milk sold per worker increased by approximately 27,000 pounds, or 1.9%, from 1.39 million pounds per worker in 2020 to 1.42 million pounds per worker in 2021.

Hired labor continues to be the second highest production cost on New York dairy farms, and it increased in 2021. Farms paid $48,239 per worker equivalent in 2021, up 3.7% from 2020. Due to the increase in labor efficiency described above, the cost of hired labor per unit of milk production rose 1%, from $2.92 per hundredweight in 2020 to $2.96 per hundredweight in 2021.

Milk Price & Income Generation

In 2021, farms experienced a significant increase in milk price and a drastic reduction in government payments. Gross milk sales rose 7%, on average, from $18.60 per hundredweight in 2020 to $19.99 per hundredweight in 2021. Gross milk sales averaged $5,563 per cow in 2021, up $449 per cow from the previous year.

Miscellaneous receipts, the income category that includes government payments, fell 78%, on average, from $3.00 per hundredweight in 2020 to $0.66 per hundredweight in 2021. This change reflects the extraordinarily high government receipts associated with the Coronavirus Food Assistance Program (CFAP) and other COVID-19 relief programs directed to farms in 2020 but not in 2021.

The decline in government payments more than offset the increase in milk price such that total farm operating receipts per unit of milk sold fell 1%, from $23.05 per hundredweight in 2020 to $22.91 per hundredweight in 2021. However, at the farm level, total operating receipts rose 2.4% due to the 3% increase in the total volume of milk produced. Total operating receipts averaged $6,377 per cow in 2021, up $39 from $6,338 per cow in 2020.

(Continued on page 11)

Cornell Cooperative Extension

South Central NY Dairy and Field Crops Program

We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cayuga, Cortland, Chemung, Onondaga, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call.** Visit our website: http://scnydfc.cce.cornell.edu and find us on social media!

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We put knowledge to work in pursuit of economic vitality, ecological sustainability, and social well-being. We bring local experience and research-based solutions together, helping our families and our community thrive in a rapidly changing world.

2022 Summer Interns

South Central Dairy and Field Crops team welcomes their new summer interns, Will Salamone and Molly Mueller. The team is excited to work with these two dynamic individuals and assist them in reaching their goals in their time with us.

Will Salamone is a senior in Animal Science at Cornell. He grew up in Livingston County and began working on a dairy in high school. This summer Will is an intern for the Nutrient Management Spear Program where he will be a part of the team working on Dairy Sustainability. His project aims to understand nutrients brought onto farms via by-product feeds and working to create nutrient field balances. Will is also working with Janice Degni with the South-Central NY Dairy and Field Crops team gaining exposure to CCE. After graduation, Will plans to pursue a career working with several aspects of the Dairy Industry. In his spare time, Will enjoys working outdoors, kayaking, and spending time with his dog, Creed.

Molly Mueller is a rising sophomore at Cornell University in the Environment and Sustainability major. Molly grew up on a dairy farm in Ontario County NY. She is an intern for the Nutrient Management Spear Program on the Dairy Sustainability Project at Cornell. This project helps educate and guide local farmers to measure and regulate the greenhouse gas emissions that are associated with the production of their crops and dairy products. Along with the NMSP side of things on campus, Molly will be in the field with Cornell Cooperative Extension. Janice Degni will be taking Molly and the other CCE intern, Will Salamone, along for soil sampling and other various tasks while they learn what extension does for the local communities and dairy farms in the respective counties. Molly one day hopes to pursue a career in sustainable global agriculture, though she is not entirely sure where that path might lead her. In her free time, Molly likes to read, cook, and spend time outdoors.

Cornell Cooperative Extension

South Central NY Graziers

2022 Pasture Walks

Grazing Education & Networking

Mark your calendar for an exciting series of pasture walks featuring a wide range of farm types and management styles! Meet experienced graziers and learn about pasture management strategies to boost soil health and profits. Network with others in the grazing community and discover funding opportunities to expand or improve your grazing operation.

Cornell Cooperative Extension
South Central NY Dairy and Field Crops Program

This program is supported by the South Central NY Dairy & Field Crops Team, a partnership between Cornell University and the CCE Associations in Broome, Cayuga, Chemung, Cortland, Onondaga, Tioga, and Tompkins Counties.

JUNE 11 | 10:00-11:30am
Rotational Grazing with Beef Cattle

Maple Acres, McGraw, NY
Contact: Dana Havas
CCE Cortland
(607) 391-2664
dmh353@cornell.edu
Register by June 9 at:
https://tinyurl.com/RGPasture

JULY 6
Pasture Walks & Healthy Soils Workshops

12:30-2:30pm | Maridale Farm
545 Turnpike Rd, Cayuga, NY
Custom grazing dairy heifers

6:30-8:30pm | Will-Sho Farm
1913 Dixon Rd, King Ferry, NY
Finger Lakes Natural Beef

Contact: Ron Kuck
CCE Cayuga
(315) 255-1183
rak76@cornell.edu

AUGUST 13
Multi-Species Grazing & Direct Marketing

Red House Ranch
Van Etten, NY
Contact: Liz Alexander
CCE Chemung
(607) 734-4453
ema228@cornell.edu

SEPTEMBER 15 - 16
Silvopasture Tour

Multiple locations
Contact: Brett Chedzoy
CCE Schuyler
(607) 535-7161 bjc226@cornell.edu
More details available at:
www.silvopasture.ning.com

OCTOBER
Stockpiling Forages for Winter Sheep Grazing

Shetler Farm, Candor, NY
Contact: Barb Neal
CCE Tioga
(607) 223-2753
ban1@cornell.edu

Summer Feed Bunk Management

By Betsy Hicks, CCE Dairy Management Specialist

Feeding dairy cows in the summertime comes with its own unique set of challenges. These challenges can manifest as variable dry matter intakes, sorting, butterfat issues or metabolic issues, and more. While most of these things should be considered as symptoms, getting down to the issue at hand is critical to preventing these challenges from becoming a serious problem.

Troubleshooting On Farm

If summer is usually a more challenging time for your herd, there are a few places to troubleshoot for problems, including ration consistency, TMR heating and cattle behavior.

Starting at the feed bunk, feed should be assessed at delivery for consistency and heating. These same two things should be assessed at different timepoints during the day, and then again before it's removed as refusals. The goal of refusals should be that it very closely resembles the consistency of the feed as it was delivered. A TMR audit (*"TMR AUDIT":* https://www.progressivedairy.com/topics/feed-nutrition/how-to-audit-your-tmr-ration-for-consistency) can be performed along the length of bunk that a load of feed was delivered to give more information about the consistency of delivery. Refusals can be submitted for nutrient analysis alongside fresh TMR to ensure minimal nutrient changes.

Temperature changes can be assessed using composting thermometers. For heating issues, finding the source of the heating is crucial for minimizing its impact. Most nutritional consultants have access to thermo-imaging cameras, which can be used to assess bunk face temperature. Approaching a bunk face with a composting thermometer to assess temperature is discouraged because of safety issues and should be avoided. If no thermo-imaging camera is available, a section of bunk can be defaced and bucketed away using a loader to assess for temperature using a thermometer safely away from the face.

Cattle should be observed for signs of sorting, preferring feed at one particular end of the bunk over another, or any other behavioral indicators that could clue into a potential issue. CCE, as well as many consultants, have time-lapse cameras to put up in barns to watch for patterns.

Strategies to Help

If any of these areas (TMR consistency, feed temperature, sorting) shows a deviation from what is desired, the herd is likely experiencing some issues, even if they haven't become a major problem yet. The TMR audit link above walks through some keys for digging into TMR audit results. Monitoring cattle behavior after a change is made, as well as performing a follow-up TMR audit can be helpful to assess differences.

If feed temperature is an issue, there are several ways to minimize any downstream effects from a heating issue.

- Audit bunk management practices – is enough being removed from the face every day? Is a tight face being maintained? Is only enough feed for that day being removed?
- Binders can be included in the diet to minimize toxin issues from molds or yeast, although these sometimes have limited effectiveness in tough forage situations. 2021 corn silage crop has been challenging for some farmers. Has that crop been tested for mycotoxin levels? Have they changed?
- Antioxidant feed additives can help maintain feed freshness and keep feed cool – again, farmers have seen mixed results with these additives so be sure it can work in your particular situation.
- Limiting or replacing the problematic forage in high priority groups (prefresh, fresh and high groups) is encouraged if neither of the first two options is desired.

(Continued on page 5)

(Summer Feed Bunk article; Continued from page 4)

- Feeding more than once a day can be considered, although weighing load sizes versus number of loads should be a consideration, especially in smaller loads (load consistency issues) and with the high price of fuel (mixing cost)
- Consider discarding refusals completely, or at least not feeding to lactating groups or high priority groups. Many farms only feed refusals to pregnant heifers or a beef group and have stopped feeding refusals to lactating groups altogether.
- Audit feed bunk management. Are refusals completely removed daily? Early in my nutrition career, there was a farm with a rough, pitted feed bunk that wound up not being able to be cleaned up thoroughly. Feeds stuck in these areas, and left heating, undesirable feed that was causing butterfat issues. Attention to cleaning this area helped dry matter intake and helped correct butterfat.

Thoughts on Targeting Feed Refusal Amounts

A good article I came across from PennState Extension (https://extension.psu.edu/what-is-your-feed-refusal-costing-you) covers some good food for thought on targeting refusals for groups. Especially in times of high feed prices, it makes sense to go over feed refusal amounts and target appropriately according to group being fed. As shared in the article, "It is often recommended that refusals for the fresh group remain around 2 to 4%, 1 to 3% for high groups, and 0.5 to 3% for late-lactation groups. In general, feed refusal should not exceed 3 to 4%. A point to note is that if feed refusals are similar in composition to feed offered, you can go for the low end numbers. If the feed refused is different from what is offered, you should go for the high end numbers."

Monitoring Results

As is always said, "you can't measure what you don't monitor". Be sure to write down and date the herd's "before" numbers, the date of the change and what was changed to adequately compare to the herd's "after" numbers. Whether these are herd metabolic statistics, butterfat results, dry matter intake or feed delivery variation, knowing where numbers started, what the goal is and when a specific change was made are keys to deciding if a change was effective.

YouTube

In Case You Missed It…

Visit our YouTube Page to catch up on any of our programming you may have missed out on!

Our Playlist now includes the following materials:

⇒ Net Zero

⇒ Transition Cow Tuesdays

⇒ Healthy Hardy Heifers

⇒ Critical Calf Care

⇒ Feeder School (Spanish & English)

⇒ Podcast "Troubleshooting Herd Health Issues"

⇒ Podcast "Dialing In To your Best Dairy"

Visit Us at:
https://tinyurl.com/SCDFCYTplaylists

Cornell University
Cooperative Extension

Agronomy Fact Sheet Series Fact Sheet #114

Emergency and Alternative Summer Annual Forages

Introduction

When spring planting is delayed due to challenging weather or an already established forage crop fails, farms may need to reduce animal numbers, purchase additional forage, or plant an alternative forage crop. After May 15-20 in New York, cool season grass seedings may not compete well with summer annual weeds, but annuals can be considered. June 5 is considered the end of alfalfa seeding window for the same reason. When selecting a summer annual to grow as an alternative forage, crop selection will depend on seed availability, soil moisture status, remaining growing season, any carryover of herbicide treatments, the intended use (for which animal species) and harvest and storage methods (dry hay, silage, grazing). In this factsheet, we present forage options for late spring or summer planting considerations.

Corn or Brown Midrib Corn

- Warm season annual grass. Select a short-season variety, for ear development, to target the R5.5 quality peak, or a longer-season variety, if ear formation is not important, to achieve the R1 quality peak.
- Plant by July 15; drill or use 15-inch row spacing; seed 50,000-60,000/acre at 1.5–2 inch depth.
- Harvest just prior to tasseling, about 60 days after planting; harvest for wet green chop (check for high nitrates) or after frost for silage or baleage.

Brown Midrib Sorghum Sudangrass

- Warm season annual grass.
- Plant by June 15 into 60ºF soils or warmer; drill; seed 65-70 lbs/acre at ½-¾-inch depth.
- Harvest at 36-48 inches and cut at 5-6 inches for good regrowth; cut again in about 40 days; wide swath for proper drying or chop at 65% moisture; prussic acid can be a concern if frosted; 15-16% crude protein; use as silage or baleage.

Figure 1: Regrowth of brown midrib sorghum sudangrass two weeks after the first cutting.

Spring Oats

- Cool season annual grass; use a rust-resistant variety if possible.
- Plant by mid-August; drill; 3-3.5 bu/acre at ⅛-¼-inch depth.
- Harvest in 60-75 days; use as silage, baleage; high in crude protein (~20%).
- Consider cutting high into a wide swath to facilitate drying at this time of year.

Spring Oats and Winter Triticale Mix

- Cool season annual grasses.
- Plant by August 5; drill 100 lbs oats and 80 lbs triticale/acre at 1¼–1½ inch depth.
- Harvest for fall oat forage and spring triticale forage; mow oats in the fall at a minimum of 4 inches above the ground to ensure triticale survival.

Figure 2: Harvest triticale at stage 9 (no heads visible but flag leaf fully emerged) for highest forage quality.

Pearl Millet

- Warm season annual grass; well-suited to warm, dry growing conditions.
- Plant early to late July; drill; seed 15–20 lbs/acre at ½-1 inch depth.
- Harvest in 55–60 days; use as silage or baleage.

Buckwheat

- Warm season annual; saturated soil at planting or in the two weeks after planting can stunt growth.

- Plant mid-June through mid-July; drill 50–60 lbs/acre at 1–2 inch planting depth.
- Harvest at flowering, 5–6 weeks after planting; use as silage or baleage.

Teff

- Warm season annual grass; well-suited for dry growing conditions.
- Plant June through late July; tiny seed, needs a firm, fine seedbed; drill or use a cultipacker seeder; seed 4–5 lbs/acre at ⅛–¼ inch depth.
- Harvest 50–55 days after planting (at 3-4 inch minimum mowing height) at early boot stage and then again 40-45 days later; use as silage, baleage or dry hay.

Figure 3: Teff can be harvested for silage, baleage or dry hay.

Pea and Small Grains Mixture

- Cool season annuals; oats and peas do not typically overwinter in New York.
- Plant before May 1; 30–45 lbs/acre for the small grain (oats, barley, wheat, triticale) and about 174,000 pea seeds/acre (pea size varies considerably); adjust seeding rate down if moisture is limiting and seed cost is higher; plant 1–1.5 inch deep.
- Harvest based on maturity stage of the small grain: late boot stage for lactating dairy cows and soft dough stage for heifers, dry cows, and beef cattle; unless N is limiting, adding peas to small grains will have minimal effect on total yield but will improve overall forage quality and palatability.

Forage Radish, Rape, Kale, Turnip

- Cool season annuals; will not overwinter in New York and will emit a strong odor when decomposing.
- Plant late summer (soil temperatures >50°F); 2–8 lbs/acre depending on planting method and companion crop; needs firm, well-prepared seedbed; drill or seed with a cultipacker seeder at ¼–½ inch depth, up to 1 inch in dry conditions; plant with an overwintering grass to capture nutrients from the decomposing tissue in spring.
- Graze before heading for best forage quality; introduce animals slowly and/or supplement with dry hay to avoid health disorders.

In Summary

The forages listed in this factsheet can provide an alternative or emergency forage during challenging years. To select the crop that best fits farm goals, consider seed availability, costs, and seeding and harvest timing, as well as the forage type and quality needed for the animals on the farm.

Additional Resources

- Nutrient Management Spear Program Fact Sheet Series: http://nmsp.cals.cornell.edu/guidelines/factsheets.html. Includes agronomy factsheets on Brown Midrib Sorghum Sudangrass (#14 and #26); Triticale (#56); Teff (#24 and 46); Forage Radishes (#64).
- Alternative Crops for Alternative Crops? 2019. Tom Kilcer. Advanced Ag Systems Crop Soil News. https://advancedagsys.com/wp-content/uploads/2019/06/July-2019-late-late-forage.pdf
- Buckwheat for Forage. Thomas Bjorkman and Larry Chase. Cornell University Extension. http://www.hort.cornell.edu/bjorkman/lab/buck/guide/forage.php.
- Pea and Small Grains Mixtures. 2014. Dan Undersander. University of Wisconsin Extension. https://fyi.extension.wisc.edu/forage/files/2014/01/PeaSmallGrainFOF.pdf.
- Use of Brassica Crops in Grazing Systems. 2017. Dan Undersander. University of Wisconsin Extension. https://fyi.extension.wisc.edu/forage/files/2017/03/Use-of-Brassica-Crops-in-Grazing-Systems.pdf.

Disclaimer

This fact sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this fact sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of discharge levels from agricultural land.

For more information

Cornell University
Cooperative Extension

Nutrient Management Spear Program
http://nmsp.cals.cornell.edu

Kitty O'Neil, Mike Hunter, Jerry Cherney, Joe Lawrence, Tom Kilcer, Thomas Bjorkman, and Quirine Ketterings

2020

June 30 Dicamba Cut-off Date Reminder

By Mike Hunter, Regional Field Crops Specialist, CCE North Country Regional Ag Team

June 30, 2022 marks the official cutoff date for the over the top use of XtendiMax, Engenia and Tavium on Xtend or XtendFlex traited soybean in New York. Now the question that will be asked by growers is "I've planted Xtend soybeans, now what are my options?".

For soybean growers that have resistant tall waterhemp and palmer amaranth in soybeans there are other effective herbicide options available. The postemergence control of resistant tall waterhemp and palmer amaranth in *all* soybeans, including conventional, can be achieved by applying Reflex or Flexstar (fomesafen) or Prefix (s-metolachlor + fomesafen) or Warrant Ultra (acetochlor + fomesafen) before the weeds reach 3 inches tall. If necessary, a late rescue treatment of Cobra (lactofen) can be applied.

Unfortunately, for soybean growers that have multiple resistant marestail (Groups 2 and 9) in Xtend soybeans there no other effective postemergence herbicides to control this problematic weed without using one of dicamba herbicides. Postemergence applications of Reflex, Flexstar and Cobra, *will not* control marestail (see fig. 1 &2).

For growers that planted XtendFlex soybean, Liberty (glufosinate) herbicide will provide an additional option for the postemergence control of marestail under 6 inches tall. Once marestail is over 6 inches tall it becomes increasingly difficult to control. For best results, apply 32 to 43 ounces of Liberty plus 3 pounds spray grade ammonium sulfate per acre using 20 gallons water as a spray carrier to ensure adequate coverage. Hot, sunny, humid days provide ideal conditions for the application of Liberty herbicide. Consider making applications between dawn and two hours before sunset for improved control of some tougher to control weeds such as marestail. Liberty herbicide can be applied up to R1 or beginning bloom stage in soybeans.

Always read and follow label directions prior to using any herbicide. If you have any additional questions about late season soybean weed control, contact your local Cornell Cooperative Extension office.

Figure 1

Figure 2

Marestail sprayed with Reflex 35 days after treatment

2022 Aurora Farm Field Day

Date & Time
Thursday,
August 18, 2022
9:45 am - 3:00 pm

Location
Musgrave Research Farm
1256 Poplar Ridge Road
Aurora, NY 13026

2.0 Agricultural Plant, 2.0 Demonstration, 2.0 Private Field and Forage NYS DEC Certified Pesticide Applicator Recertification credits will be available and CCA credits will be requested.

The program will include:
Effects of tillage and cropping system on deep soil organic carbon | Pesticide compatibility | Biological Soil Amendments, Dairy Net Zero Greenhouse Gas Measurements & Rainfall Simulator Studies | Managing rodents on the farm | New tools and new crops for organic no-till systems | Supporting New York Crops Producers for the Future | Risk assessment tool for predicting seedcorn maggot | Proximal Sensing for Modeling Development Curves and Accelerated Breeding of Climate Resilient Crop Varieties

Register Here: https://cals.cornell.edu/field-crops/about/extension/field-days

Late postemergence herbicide applications in field corn: How tall is too tall?

By Mike Hunter, Regional Field Crops Specialist, CCE North Country Regional Ag Team

It's early July and at a point in the growing season when this is your last chance to get the weeds controlled in your corn fields. Before a field of taller corn is sprayed you need to ask the question "How tall can the corn be when you spray?".

Postemergence corn herbicides have restrictions on the maximum height of the corn at the time of application. Once corn reaches 12 inches tall, atrazine and atrazine containing premixes are not an option. There is even a 30" corn height restriction for glyphosate applied to glyphosate tolerant (Roundup Ready) corn and a 24" corn height restriction for glufosinate applied to glufosinate tolerant (Liberty Link corn).

Late postemergence herbicide choices for conventional corn are somewhat limited once the corn exceeds 20 inches in height. Most, if not all, late total postemergence conventional corn herbicide programs will require more than one product in the tank mix. Correctly identifying the weeds present and actually measuring the heights of both the corn and weeds will be critical. The heights of the weeds will often times dictate the rates of many of these herbicides. Pay close attention to the herbicide labels and the adjuvants necessary to add to the spray tank.

See table below for many postemergence herbicides and the over the top maximum corn heights as listed on the label for taller corn:

Table 1: Postemergence herbicides and the over the top maximum corn heights

• Accent Q- 20" or V6 • Acuron Flexi- 30" or V8 • Acuron GT- 30' or V8 • Aim- V8 • Armezon Pro- 30"or V8 • Dicamba/Clarity- 36" • Basagran 5L- None • Buctril/Brox- Before tassel • Callisto- 30" or V8 • Callisto GT- 30" or V8 • Capreno- V6 • Diflexx- V10 or 36" whichever comes first • Diflexx DUO- 36" or V7 (7th leaf collar) • Empyros- 20" or up to V6 stage • Empyros Triad- up to 12"	• Empyros Triad Flex- up to 12" • Halex GT- 30" or V8 • Harmony SG- 16" or 5 collars • Impact/Armezon-up to 45 days before harvest • ImpactZ- up to 12" • Impact CORE- 11" • Harness MAX- 11" • Hornet WDG- 20" or V6 • Laudis- V8 • Katagon- V5 or up to 20" tall, whichever is more restrictive • Peak- 30" • Permit- Layby (about 36" tall corn) • Permit Plus- 6 leaf corn (5 collars)	• Realm Q- 20" or V7 • Resolve Q- 20" or before V7 • Resource- V10 • Revulin Q- 30" or V8 • Shieldex 400SC- 20" or V6 whichever comes first • Sinate- 24" to V7, whichever comes first • Status- 36" or V10 • Steadfast Q- 20" but before V7 • Stinger- 24" • Yukon- 36"

It is not an ideal situation when we are dealing with taller corn and weedy fields. It is difficult to control taller weeds and yield losses can be expected due to the early season competition with the corn. It is important to read and follow all label directions prior to the application of any herbicide.

Matching Your Pasture Forage To Your Herd

by Fay Benson – Cornell Cooperative Extension of Cortland County

After being involved with grazing livestock for much of my life, first on my family's dairy then owning a grazing dairy, and finally working here at CCE, I am surprised that more grazing doesn't happen in the Northeast. We have a good climate for growing cool-season grasses which support the nutritional needs of all ruminant livestock including the lactating dairy cow. The cost savings are substantial since no machinery is required to harvest the forage, store the forage, put the forage in front of the cow, and on top of that, they spread their own manure. Then I consider the statement that "Grazing is an art" and I can understand why some farmers don't want to understand the complexities of grazing, considering the season is only 180-200 days a year. An essential component of this art is estimating the forage needs of the animal with pasture forage availability in the pasture.

I am only going to be describing rotational grazing in this article with a pasture residency or duration of 12 hours to 3 days. I believe the adage that the first day of grazing in the pasture is like eating in the dining room. The second day is like eating in the bedroom, and the third day is like eating in the bathroom. In order to make economic use of your pasture acreage, it's important to match the pasture size to your herd size. There are multiple reasons for this:

- One of the costs that are often ignored in a pasture operation is the cost of owning the land. By matching your herd to the land base you can minimize this cost per animal.
- To maximize dry matter production of the sward (mix of forage species that make up a pasture) it's important to allow for a proper rest period for the sward to recover. Too many animals will weaken and reduce pasture productivity, and too few will limit your profit potential.
- Having more animals than the pasture can support will lead to overgrazing which leads to compaction and weakening the soil's health and its ability to support the higher-yielding pasture species.

The Math of Matching Pasture to Livestock

The following information was taken from "Pasture Map" [i]

1. *How to Calculate Stock Days / Acre (SDA)*

This is the pasture inventory method popularized by folks in adaptive grazing or management intensive grazing. It's practical and only requires your boots, eyeballs, and some quick math.

Go out to pasture and pace off a square patch of pasture that you think will feed one Animal Unit (AU) per day. For reference, one standard Animal Unit (AU) is a 1000-pound steer, eating 3% of its body weight per day. This would be 30 lbs of dry matter per day. So this patch is going to feed one Animal Unit Day or one cow day.

Measure by paces how big your patch of pasture is. Count how many square yards your paced-off patch is. For example, 20×20 yards is 400 sq yards.

Divide to find how many cow-days one acre has to get Stock Days / Acre (SDAs). One acre has 4840 sq yards per acre.

In this example, 4840 sq yards / 400 sq yards = 12.1 Stock Days/ Acre.

Stock Days/Acre is a measure of how much grass you have. It's an indication of forage inventory and carrying capacity. You can use Stock Days/Acre (SDAs) to calculate an appropriate stocking rate for your animals. Once you've trained your eye, it will become easier for you to better at eyeballing SDAs on your pasture over time.

2. *Eyeball forage inventory*

If you'd just like a quick, but less accurate estimate of your pasture dry matter, all you need is an estimate or measurement of the forage height. Once you have the average height in inches of the forage in your pasture, multiply it by 200. This is an average estimate of pounds of dry matter per acre per inch of forage height. For example, if your grass is 10 inches tall, multiply 10 x 200 to get 2000 lbs/acre of dry matter. If you want to get a little more precise, use the table below to estimate. Just replace 200 with the relevant number below based on the type and health of forage you have in your pasture.

Rising Plate Meters

In my work with Extension, I like to have a quicker and more accurate way to evaluate the amount of dry matter both available and also consumed by the livestock. I use a Rising Plate Meter. This

(Continued on page 11)

(5 Tips for a Successful Dry; Continued from page 10)

handheld tool combines height with the density of the pasture sward to provide a reading that can be calculated to give a more precise measurement of forage in a pasture. The rising plate meter consists of a thin aluminum plate mounted on a shaft by a gear connected to a mechanical counter (see picture). As the rod is lowered into the pasture, the plate is supported at a height determined by the sward's thickness, height, and the plants that compose it. On farms where accurate calculations are needed to not only give what's currently in a pasture but also to monitor the growth of all pastures. The monitoring allows graziers to get the most out of their pastures. If there is a predicted shortage in future pastures, they can lengthen the residency of the herd by adding stored forage. If there is an excess of future forage then some of the pasture can be harvested for stored feed. I will write more about this tool in the next Dairy Digest (and share on the blog).

[i] https://pasturemap.com/pasture-inventory-estimate-available-dry-matter/#:~:text=Once%20you%20have%20the%20average,lbs%2Facre%20of%20dry%20matter.

(2021 Performance of DFBS Co-operators article, Continued from page 1)

Cost Control

Farms reported higher expenses across many cost categories in 2021. On a per hundredweight basis, the total farm operating expense rose 7%, from $18.17 in 2020 to $19.37 in 2021. Much of the $1.20 per hundredweight cost increase stemmed from the higher cost of purchased feed, which is the largest single expense category on most dairies. In 2021, the cost of purchased grain rose $0.71 per hundredweight, while the cost of purchased forages rose $0.11 per hundredweight. Fertilizer and fuel were the next largest contributors to the overall cost increase, with fertilizer up $0.13 per hundredweight and fuel up $0.11 per hundredweight in 2021.

Only seven cost categories showed a decrease in 2021 compared to 2020. The largest cost savings came from the interest expense category, which fell $0.08 per hundredweight. Our data show a drop in the average interest rate and an increase in debt per cow in 2021, suggesting that farms may have paid off some higher interest debt and secured new debt at lower rates. Farms achieved modest cost savings in six other expense categories: land, building and fence repair; custom boarding; crop professional fees; veterinary service and medicine; milk marketing; and other miscellaneous expenses. Together these six categories accounted for a cost savings of about $0.09 per hundredweight in 2021.

The total economic cost to produce milk, which includes operating costs plus depreciation and opportunity costs of labor and capital, increased 3%, on average, from $19.71 per hundredweight in 2020 to $20.34 per hundredweight in 2021. Notably, the total cost to produce milk exceeded gross milk sales in 2020 and 2021. This indicates that, on average, the sale of milk did not cover the full economic cost to produce milk. These numbers exclude CFAP payments, which contributed to higher total farm revenues and profits in 2020.

Net Farm Income & Return on Investment

Net farm income (without appreciation) is a key measure of profit. Net farm income averaged $584,970 per farm in 2021, which is equivalent to $555 per cow or $1.99 per hundredweight. This represents a 39% reduction in net farm income compared to the previous year. Average net farm income for the same group of farms in 2020 was $956,228 per farm, $923 per cow, and $3.36 per hundredweight. The 2020 net farm income includes almost $3.00 per hundredweight in government receipts due to payments from CFAP and other COVID-19 relief programs.

Rate of return on equity capital (ROE) and rate of return on all assets (ROA) are important measures of profitability that account for the economic cost of operator labor and management. Excluding appreciation, the average ROE was 3.9% in 2021, compared to 8.6% in 2020. The average ROA was 3.7% in 2021, compared to 7.2% in 2020. These data show that, on average, participating dairies were less profitable in 2021 compared to 2020. However, without CFAP payments and other COVID-19 relief programs, 2020 would have been a very difficult year for the dairy industry, certainly much less profitable than 2021.

Final Thoughts

Dairies across Central NY and the Southern Tier achieved increases in productivity (pounds of milk per cow) and labor efficiency (pounds of milk per worker) in 2021, both of which respond directly to management choices. These trends show positive change for operations striving to make the most of their resources and opportunities. Despite lower milk prices in 2020 compared to 2021, dairies in this region achieved higher profits in 2020 due to generous COVID-19 relief programs. Milk price and government payments had considerable influence on financial performance, yet farm managers have little control over these external factors. To survive and thrive in an industry characterized by rapid and unpredictable changes in milk price and input costs, dairy operators must focus on improving the management practices and outcomes under their influence, while considering strategies to mitigate price risk and other threats that exist beyond their control.

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Upcoming Events Calendar

July 13 10:00—3:00 pm	2022 Soil Heath and Climate Resiliency Field Days—**DEC credits available** Rodman Lott and Sons, Seneca Falls; Cover crops and reduced tillage | $10 FMI and to register: fielddays.newyorksoilhealth.org
July 6, August 13, September 15-16, October tbd	South Central NY Grazier 2022 Pasture Walks Grazing Education and Networking Various Counties through out the Region FMI: https://scnydfc.cce.cornell.edu/events.php
August 18 9:45 - 3:00 pm	2022 Aurora Farm Field Day; Musgraves Research Farm; **DEC CREDITS** FMI and to register: https://cals.cornell.edu/field-crops/about/extension/field-days
August 23 1:00 - 4:00 pm	Growing Great People: Training Skills for Dairy Farmers; Sunnyside Farms, Scipio Ctr FMI and to register: https://scnydfc.cce.cornell.edu/event.php?id=1898

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