Why is there uneven tasseling/pollination in my corn?
Each year in the spring, as corn is emerging, Mike Stan-
yard and I get called out to assess why some fields are
exhibiting uneven stands. Many reasons can contribute
to doubles, skips, or blanks in the row. Here are five
common causes for you to think about.

1. **Variability in soil moisture.**
   Soil moisture differs in topography, soil type, and
texture. Corn seed will imbibe roughly 30% of its
weight in water during the germination process.
Changes in soil texture across a field affect moisture
availability, which in turn affects the crop stand.

2. **Soil temperature at planting.**
   If soil temperatures are averaging 50 to 55 degrees
F at planting, corn may take up to three weeks to
emerge.

3. **Seed-to-soil contact.**
   For corn seed to imbibe the required moisture
needed for germination, it’s imperative to have
good seed to soil contact in which soil is firmed
around the seed.

4. **Planter calibration and settings.**
   Have you had your planter’s seed meters calibrated
lately? Was the downforce set correctly on the
planter?

5. **Early season-pests.**
   Insects can pose a threat to the young corn, like
black cutworm and true armyworm.

What’s the yield effect on uneven tasseled/pollinated
corn?
Many growers are wondering what the yield effect will
be on stands with uneven tasseled corn. A Canadian
scientist found that when one of six plants was delayed
in emergence by 2 plant leaves, the overall yield was
reduced by 4%. Illinois and Wisconsin researchers
looked at the response of corn when 25, 50, and 75%
of plants were either planted 10 or 21 days after the
original planting date and found overall yields were
reduced by 6-7% with the 10-day delay regardless of
the percentage of plants delayed at planting.

So, what is the yield affect in addition to early season
stresses?
Well, let’s review! By mid-April, soil temperatures
were still averaging 42-48°F with some planters in the
field. Despite the cooler than usual weather in May,
significant numbers of black cutworm and common
armyworm were being recorded. Most of the region
surpassed the 300 growing degree day mark by early
June and we were seeing some cut plants in fields that
had to be sprayed. A week later we were getting more
reports of cutworm injury to corn with leaf feeding
and missing plants in addition to our first report of
armyworm feeding in winter triticale and hayfields. By
June 18th Mike and I were getting plenty of calls about
common armyworm feeding in corn and wheat with
larvae ranging from ½ to 1” in length. Then we went
through a hot spell and by early July we were seeing
drought effects in corn in some areas. Yield compo-
nents most affected by environmental stress at differ-
ent growth stages; V5-V7: number of kernel rows and
V9-VT: number of potential kernels per row (row
length). Yield losses have been estimated up to 13%
per day of stress. If we combine any of the common
causes for uneven corn stands, in addition to season
stressors, we can potentially expect a 10-20% overall
yield reduction depending on the field and location.
To simplify information, brand names of products may be used in this publication. No endorsement is intended, nor is criticism implied of similar products not named.

Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Changes occur constantly & human errors are still possible. These recommendations are not a substitute for pesticide labeling. Please read the label before applying pesticides.

By law and purpose, Cooperative Extension is dedicated to serving the people on a non-discriminatory basis.
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Upcoming Webinars

September 14, 2020 - Noon (CST)
“Calcium and the Transition Cow”
Gary Oetzel, University of Wisconsin Veterinary Medicine

September 22, 2020 - 9AM - 10AM (ET)
“To Cross or Not to Cross: A Talk of Beef x Dairy”
Tara Felix, Penn State Extension Beef Specialist
https://extension.psu.edu/to-cross-or-not-to-cross-a-tale-of-beef-x-dairy

October 28, 2020 - 10:30AM - 1:30PM (ET)
“Tools to Reduce Mastitis on Your Farm”
Greg Strait & Amber Yutzy, Penn State Extension
https://extension.psu.edu/tools-to-reduce-mastitis-on-your-farm-webinar
“As the industry continues to increase its investment in technology, I can’t think of anyone better to serve the farmer than the people at Dairy One.”
-Blumer Dairy, Alexander, NY

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**The purpose of this article is to highlight the research of Professor Loren Tauer, Cornell University, and Jonathan Dressler, formerly of Cornell University. All content is credited to:**

- a November 2019 Presentation by Professor Tauer to CCE extension educators

**Summary**

- When faced with an unfavorable economic environment, dairy farm business owners may consider exiting dairy farming – for decision making purposes, producers consider profit, cash flow, balance sheet, family related (age, succession plans, etc.) objectives and goals.
- The field of economics offers models that: explain past, current and predicted future behavior associated with business entry and exit; and provide decision rules for exit.
- Tauer and Dressler describe and use a model to estimate exit prices, where decisions depend upon current returns, future expectations (costs, output price and others), risk and uncertainty (variability in expectations and outcomes).
- In a recent email exchange, Professor Tauer noted the following regarding the exit decision work, “I recall the message I really wanted to present ... is that it is rational for farmers to hang in there even during very low prices, because of the option value of waiting for conditions to improve.”

**Background**

The topic of exiting the dairy industry may again be on the minds of producers and those with agriculture sector interests. Farm business owners examine the exit decision given profit, cash flow, balance sheet, family and other objectives and goals. Economic models with decision rules for an exit price can help decision makers better understand the problem, and make decisions. Professor Loren Tauer, Cornell University, has studied the exiting dairy farming decision for a number of years as the dairy industry cycled through favorable and unfavorable economic conditions.

---

**The Exit Decision**

A standard economic model provides a simple rule for exit – producers should consider exiting dairy farming when the milk price received falls below the farmer’s total cost of production, and should seriously consider exiting when the price of milk is less than the variable cost of production. However, the decision may depend upon more than the current milk price and current cost of production. The rule above ignores the value of waiting to see if future conditions improve -- including if the value of waiting lowers the exit milk price.

Tauer and Dressler describe and use a model where exit price depends upon: the cost of production per hundredweight; net liquidation value per hundredweight; measures of variability in milk price, including trend; and the interest rate. Variables that impact exit milk price, with values used for illustration (see the ‘Exit Price Findings’ section below) follow.

| Variable cost: $18.93 per cwt. | Investment (for fixed cost): $46.49 per cwt. |
| Cost (and lost capital) to liquidate the farm: $10.00 per cwt. | Average growth rate in milk price: 0.00 |
| Variance in milk price: 0.03 | Interest rate (return w/o apprec. on all capital): 0.04 |

**Exit Price Findings**

Given the above values, Tauer recently calculated exit prices and reported the following selected findings.

- Given variable cost equal to $18.93 per cwt., and total cost equal to $20.65 per cwt., exit price adjusted by the option value equals $10.42, which is lower than the variable cost.
- If milk price trends up 1%, then exit price equals $8.33

(Continued on page 6)
Onboarding Dairy Employees

**Safe, Productive and Engaged from Day One 2020**

The first days and weeks on the job set the course for a new employee. A successful onboarding program can be an essential tool to help reduce employee turnover, increase employee safety and productivity, and contribute to a farm’s success.

Identified as a priority by New York’s Ag Workforce Development Council, Cornell Ag Workforce Development is seeking farmers to participate in the second year of an onboarding project funded by the New York Farm Viability Institute.

This project focuses on navigating employment requirements and improving human resource management practices, including enhancing training skills.

Over a three-session Zoom series, participating farmers will gain an understanding of and complete an onboarding template, and be supported by Dr. Richard Stup, Cornell Ag Workforce Specialist, Extension educators, or industry consultants, to implement onboarding materials, trainings and methods.

**Sample Onboarding Tools:**

- Employee Handbooks, SOP’s, Training Videos, New Hire Forms, Job Descriptions, Farm Safety Plans, Checklists, Organizational Charts, Mission Statement, Written Policies, and more...

**To Participate, Contact:**

Libby Eiholzer  
NWWY Dairy, Livestock and Field Crops Team  
P: 607-793-4847 | E: geg24@cornell.edu  

or  
Joan Petzen  
NWWY Dairy, Livestock and Field Crops Team  
P: 716-378-5267 | E: jsp10@cornell.edu  

(agworkforce.cals.cornell.edu)

(Continued from page 5)

(remaining in business is more attractive when compared to the initial scenario).

- If milk price trends down 1%, then exit price equals $12.02 (exit is more attractive when compared to the initial scenario).

**Final Thoughts**

Professor Tauer’s and Jonathan Dressler’s research calculates exit prices for ranges of key variables (please see the Extension Bulletin referenced at the beginning of this article). The results reported in this article illustrate basic characteristics of their research. Farmers’ decisions to stay in business are supported by using a model that combines aspects of current returns, expectations regarding future economic performance, and uncertainty. Results help explain why dairy farmers continue to produce even though a standard model suggests exit. As mentioned above, this work supports, underlies Professor Tauer’s message, “I recall the message I really wanted to present ... is that it is rational for farmers to hang in there even during very low prices because of the option value of waiting for conditions to improve.”
Managing for Success in a Robotic Milking System
by Margaret Quaassdorff

There is a lot of discussion out there on how to best move cows through a robotic milking system. One rule of thumb is that high early lactation visits = high later lactation visits. Successful managers of robotic milking systems say that an excellent pre-calving diet, that promotes high post-calving intakes, leads to healthy fresh cows that have a high drive to visit the robot early in lactation. This leads to higher milk production which drives partial total mixed ration (PMR) intake, which continues to drive visits and milk production. This method assumes the cow is comfortable with the robot and the pen system that she is in, and works really well for mature cows that are used to the robot.

Early lactation milking visits (number of times going through the robot each day) are really important to a successful lactation in a robotic milking system, and are an area where heifers struggle. In a study that looked at 4-week milk from 32 herds, 1st lactation cows that were approaching their peak milk were still only getting milked twice daily. Compared to older cows, 1st lactation cows averaged 2 visits per day in the first week, and never got above 2.75 visits throughout the lactation. Mature cows in the same herds averaged over 2.5 visits in the first week, and averaged above 3 visits through the next 6 months after that (Siewert et al., 2017). In another study that compared guided and free-flow traffic systems across 40 herds, 1st lactation cows had fewer milking visits during early lactation than mature cows in both systems (Siewert et al., 2018; Figure 1).

Early lactation is not only a metabolic transition period for heifers, but is also oftentimes a social and environmental transition. Stress of navigating a new system may be mitigated by training your heifers to the robot before they freshen.

Pre-training heifers decreases fetching after calving.

A farm compared the number of 1st lactation cow visits from heifers trained to go through a robot system before calving vs peers that had entered the milking system without previous training. The farm had updated a robot barn to contain a pre-fresh pen, which gave them the opportunity to walk heifers through the robot system twice daily before they freshened. Looking back at data from heifers that were not trained, they saw that in the first week of lactation, trained heifers visited the robot 2.12 times vs 1.82 times per day for those that did not receive training, and were visiting on their own by 3 days in milk. By 30 days in milk, trained heifers were visiting the robot an average of 3.27 times vs 2.16 times per day. This trend of approximately one more visit per day on average carried through the trained heifers’ lactation (Peiter et al., 2018), which allowed for increased milk production. If it is possible to train heifers to the robot before freshening, it gives them one less thing to stress about, and it shows in their rapid adjustment to the system.

What about after freshening, how long do I train my heifers?

Jim Salfer, of University of Minnesota, recommends taking time to teach a fresh 1st lactation cow about the entire pen, making sure not to chase her into the robot, and making it a good experience. Though it can be tedious, he suggests that slowly guiding her to the robot morning and evening, and one or two times more throughout the 24-hour period may help the 1st lactation animal to learn quicker. Again, the idea here is to teach high visits early in lactation in order for the cow to maintain high visits throughout her lactation, which equals high milk throughout.

You can look forward to our Automated Milking System Discussion Groups starting up again in the future. If you are interested in joining, please send an email to maq27@cornell.edu or call Margaret at 585-405-2567.
CONSULTING SERVICES  As your business continues to adjust to the “new normal” it’s crucial to make sure you’re doing all you can to adapt. From operational changes to reworking budgets, the farm business consultants at Farm Credit East are here to guide you. Keep your business Strong at the Roots. Call your Farm Credit East advisor today.

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Fall Pasture Management by Nancy Glazier

As I write this (August 10), I can tell we are on the downswing of summer as the days are getting shorter. Maybe the next month or so would be a good time to assess your pastures before the grazing season becomes a distant memory. Should they be more productive? Are you looking to raise more animals on the same acreage? Are there just too many weeds? Does it just ‘look bad’? Plans for improvement can begin now for next spring.

Fall is a good time to take a walk through your pastures with pen and paper and write down what you see. Note if pastures have bare patches or thin spots. Also, note what weeds are present and whether they are annuals, biennials, or perennials. Once evaluated an action plan can be developed. Weeds are opportunistic, that’s why they are weeds. They will fill in wherever there is a bare patch or thin spot. Chances are, you’ll have bare areas near gates; those areas are unavoidable. If at all possible, move water troughs each rotation to prevent problem areas. A short term fix is to reseed those bare patches. For long term solution, address the culprit and try to prevent those bare spots. It may be compaction related.

Know weed species to target control. Timely grazing and clipping are helpful. Annuals and biennials can usually be taken care of with clipping prior to seed set. Perennials may need multiple mowing over years to control. One option would be to clip perennials then spray regrowth with herbicide. The downside of herbicide use is it also controls desirable broadleaves, such as clovers and trefoil. Maybe spot spraying is an option. Pay attention to timing if herbicide is used. Read the label, and make sure to keep animals off the pastures for the required time. If some pastures need renovation, can they be taken out of rotation for a short period next season?

Under-producing pastures can be due to lots of reasons. Rainfall is out of our control, but should be recorded. What percent are legumes, grasses, and weeds? This may help guide your decision making, whether renovation is needed.

You can’t change your soil type, but it can be improved with fertility. Take a soil sample and review the results. If lime is needed, do that as soon as possible, if the ground is dry enough to drive on. It will take time for lime to react with the soil. Don’t apply more than 2 tons to an existing pasture. If potassium and phosphorus are needed, apply fertilizer or manure to the recommendations.

If there aren’t many legumes present, grasses would greatly benefit from some nitrogen fertilizer in the spring or later in the 2021 grazing season. Nitrogen only boosts production if sufficient moisture is present. Pencil out the least expensive form of nitrogen; only apply when the grasses are actively growing to reduce losses from volatility or leaching. It will only pay for itself if you need more forage. If a paddock or two need to be completely renovated, maybe an application or two of nitrogen will help you get through the season while the other paddocks get established.

What about adding species? An option is to frost-seed clovers. White or red clover will supply nitrogen to the grasses. Now is the time to make sure there will be bare soil for good seed contact. Pastures can be mowed or grazed short to improve frost seeding success in March. Grass and legume mix could be no-till drilled into the pasture, too. This could be done early spring or late summer. Existing pasture would need to be ‘held back’ by overgrazing or short clipping. These both require a bit of luck and cooperation with timely rains.

It is also important to look at your plant-animal balance. Utilizing a rotational grazing system is a great start to improving yields. Rest and recovery are critical for regrowth. In general, pastures should not be grazed shorter than 3-4”. There are specific reasons to do otherwise, though, if you are frost or overseeding. If needed, I can provide some resources to help you calculate how many animals your farm can carry.

Where will you keep your livestock this winter? It could be in a paddock that needs to be renovated. The added nutrients will be there from manure and wasted feed. If this is done, try to move hay rings or feeders around the pasture to help evenly distribute the nutrients. Make sure there will be no runoff to any water sources.

A part of a good grazing system is to have a sacrifice area. This can be a barnyard or small paddock that livestock can be moved off pastures and fed stored feed. This can be used any time of the year when pasture growth has stopped.

This is a short overview of some things to think about this fall and winter. If you have questions just let me know.

This photo shows the first season after bale grazing. The wasted hay will eventually decompose and add nutrients to the soil. Photo: N. Glazier / CCE NWNY Team
Another challenging year for wheat. The crop came through the winter beautifully. We had warmer than normal temperatures early in NWNY and then it got cold. We had below freezing temperatures, some late frosts and even snow flurries in May. Bottom line: Overall farm averages were lower than expected. Wheat yields were all over the board. Many growers reported having ranges of 30 to 100 bu/a on the same farm! Well, that crop is in the books so let’s start thinking about the 2021 crop and getting it off to a great start.

**Variety Selection.** Cornell has small grain trials planted across the state each season. You can review this year’s and past year’s results for red and white winter wheat on their website, [https://plbrgen.cals.cornell.edu/research-extension/small-grains/cultivar-testing](https://plbrgen.cals.cornell.edu/research-extension/small-grains/cultivar-testing).

**Planting Dates.** Ideally, between the last week in September and the first half of October has been the most productive planting window for wheat.

**Seeding Rates, Wheat.** Seeding rates should increase as the season gets later and should be adjusted based on soil conditions (See chart) and % live seed. Seeds should be drilled 1-1.5 inches deep for good emergence. See examples below on how to calculate million/pounds of live seed per acre.

<table>
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<th>Soil Condition</th>
<th>Sept. 15</th>
<th>Sept. 25</th>
<th>Oct. 5</th>
<th>Oct. 15</th>
<th>Oct. 25</th>
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<tr>
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<td>1.69</td>
<td>1.8</td>
<td>1.93</td>
<td>2.06</td>
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</table>

Live seed % = Recommended rate / Percentage of live seed = Rate/acre
Example: 1,450,000 seeds / .90 live seeds = 1.61 million live seeds/acre

To figure out how many pounds per acre, use the following formula:
Seeds per acre / # seeds/lb. = lb./acre
Example: 1,610,000 / 13,000 = 123.8 lb./acre

**Starter Fertilizer.** Phosphorus is very important and winter grains need 15 pounds just for strong seedling establishment. Follow your soil sample recommendations for P and K. Small grains should have 10-20 pounds of N, most of the P and possibly a little K in the starter.

**Broadleaf and Grass Weed Management.** Winter annual weeds are the most prevalent weed competitor for our winter grains. Chickweed, purple dead nettle, shepherds purse, corn chamomile and others in the mustard family emerge right along with the crop in the fall. Many producers spray with Buctril or Harmony Extra in the fall so they are starting clean in the spring.

Marestail/horseweed can also germinate this fall right along with the wheat. Remember, most of our population is glyphosate (Group 9) and ALS (Group 2) resistant and will not be controlled with Buctril or Harmony Extra. This weed can be managed with tillage prior to planting. It hates even a little bit of tillage. For No-tillers: small marestail can be taken out with 1 pint of Banvel but needs to be applied at least 20 days prior to planting. It is important to start clean of marestail in either circumstance. We have more options to go after it in the spring with 2,4-D and Huskie (see Special Local Needs (SLN) label for NY on rates).

Annual and roughstalk bluegrass and cheat populations continue to increase across the region. These grasses also emerge in the fall right along with the wheat. I recently learned that the NYSDEC approved a Special Local Needs (SLN) registration for Osprey Xtra (Osprey + Thiencarbazone) to replace Osprey for control / suppression of roughstalk bluegrass and cheat in winter wheat. Osprey Xtra can only be applied up to the jointing stage so it has to be sprayed early.

**USDA to Measure Small Grain Production.** During the first two weeks of September, growers of small grains will receive a survey from the USDA’s National Agricultural Statistics Service (NASS). Please take the time to fill out this survey. It will help give a more accurate picture of wheat and other small grain acreage, yield and production estimates at the county and state level, to be published in December. There will be an option to respond online.

Winter Wheat on April 15 in Monroe County.  
Photo: M. Stanyard / CCE NWNY Team
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<table>
<thead>
<tr>
<th>Make</th>
<th>Model</th>
<th>Year</th>
<th>Mileage</th>
<th>Condition</th>
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**Additional Listings:**

- **Mack Trucks:** Various models and years available, prices ranging from $50,000 to $150,000.
- **Freightliner Trucks:** Range from $40,000 to $120,000, with various years.
- **Kenworth Trucks:** Models like T680, T880, and T660, prices starting from $70,000.

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**Construction Equipment:**

- **Excavators:** Various brands available, ranging from 60,000 to 100,000 pounds, with prices starting from $30,000.
- **Loader Backhoes:** From $25,000 to $60,000, depending on size and condition.
- **Skid Steers:** Starting from $15,000 to $30,000.

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**Contact Information:**

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**Note:** Prices and availability may vary and are subject to change. Please call for more information.
Herbicide Resistant Weed Control Virtual Field Day - 11:00am to 1:00pm. This free online event will offer 2 DEC pesticide applicator credits and CCA CEU's. Pre-registration is required for DEC credits! More information and online registration is available on the NWNY Team website: https://nwnyteam.cce.cornell.edu/events.php

COVID-19 Information Websites:

Need information? View the following Cornell CALS and CCE Resource Pages that are updated regularly.

**General Questions & Links:**
https://eden.cce.cornell.edu/

**Food Production, Processing & Safety Questions:**
https://instituteforfooodsafety.cornell.edu/coronavirus-covid-19/

**Employment & Agricultural Workforce Questions:**
http://agworkforce.cals.cornell.edu/

**Cornell Small Farms Resiliency Resources:**
https://smallfarms.cornell.edu/resources/farm-resilience/

**Financial & Mental Health Resources for Farmers:**
https://www.nyfarmnet.org/

**Cornell Farmworker Program**
www.farmworkers.cornell.edu
www.trabajadores.cornell.edu (en espanol)