Crop Insurance – The Farm Safety Net

“Agriculture is an inherently risky business. Farmers and ranchers need to regularly manage for adverse weather and financial, marketing, production, human-resource, and legal risks.

Federal crop insurance is the pre-eminent risk management solution for farmers and ranchers, providing effective coverage that helps them recover after severe weather and bad years of production. For some farming and ranching operations, crop insurance is the difference between staying in business or going out of business after a disaster. For the next generation, crop insurance provides the stability that will allow them to begin farming.”

- USDA
Tucked away in the northwestern most corner of the state, Freund’s Farm sits on 600 beautiful acres, proudly serving as one of Connecticut’s most notable and progressive dairy farms. The farm was started in 1949 by Eugene and Esther Freund. The operation has grown over the past 70 years and now boasts a herd of nearly 300 happy, healthy Holsteins. The family has done well to evolve with changing times, outfitting their operation with solar power to help reduce costs and their impact on the local environment. Freund’s Farm also employs the use of robotic milking machines which greatly improves the efficiency of the milking process while keeping their cows content and productive.

In 1970, the Freunds took advantage of a surplus of an unlikely resource, cow manure, with the invention of Cow Pots. These thoughtful and eco-friendly pots have become a favorite of gardeners from all walks due to their biodegradability, making seed starting a breeze. The resourcefulness of the family over the years has made them a leader in sustainability, receiving the US Dairy Sustainability Award of Outstanding Resource Stewardship. Freund’s Farm has also established a successful bakery and farmer’s market, providing their local community with fresh local food. Despite the often-risky nature of dairy farming in CT, the Freund family continues to solidify their position as an industry leader due to their ingenuity and dedication.

UConn Extension had an opportunity to talk with Ben Freund of Freund’s Farm about some of the risks associated with dairy farming in Connecticut and the role that insurance plays to alleviate some of the associated stressors. The biggest risk to dairy farming is often the weather, a factor that can hardly be controlled. However, market variability is a risk to which there are a range of mitigation strategies. Both the costs of inputs and the market price of milk fluctuate often. The Freunds work closely with insurance agents to customize government subsidized insurance plans to meet the farms needs and guarantee the price of milk for a certain period of time. The flexibility of the plans
allows the farm to maintain operations even when the market price of milk does not meet expectations. Ben Freund asserts the insurance is “an important tool” and that “having some sort of risk mitigation on the farm is worthwhile to understand and use”. You can watch Ben Freund’s entire video at the CT Risk Management website under the “Resource Library” tab.

Banner Photo: Cabot

**Spotlight: Soil Degradation**

One of the most pressing resource related issues around the world is the continual reduction in the percentage of arable land. Currently, 37% of land worldwide is considered agricultural, only 10% is deemed arable, or plowable, and suitable for crop production (World Bank Group, 2015). The shrinking percentage of suitable farm land is a direct result of soil degradation, which is attributed to tillage practices and the use of agrochemicals in intensive agriculture. Overgrazing of rangelands, natural occurrences such as wildfires, and non-agricultural human activities such as road salt applications also contribute to the degradation of soils, making mediation efforts cumbersome. Although the degradation of soils is a multifaceted process with a range of negative effects, effects tend to be closely tied with one another making the process as a whole degenerative.

The current intensive agricultural systems in place throughout the world aim to maximize production through increased inputs, such as labor and agrochemicals, while reducing waiting periods between crops. Large-scale annual crop production relies primarily on conventional tillage methods such as the moldboard plow, an implement that cuts a
A furrow slice of soil (around 8 inches in depth). The furrow slice is lifted, flipped, and dropped back down, inverting the soil profile. Simultaneously, this implement forms a hardpan layer of compacted soil beneath the disturbed portion. Both the inversions and hardpans negatively impact the soil’s structure. A compromised soil structure carries its own concerns and at the same time predicates multiple downstream effects.

A soil’s structure refers to the arrangement of fine soil articles into groups called aggregates. Many soil activities such as water movement, heat transfer, and aeration are directly impacted by the formation and arrangement of aggregates which results from a range of slow biological, physical and chemical processes. Aggregates are delicate and become destroyed in frequently disturbed soils such as those in annual cropping systems. Destruction of aggregates increases the bulk density of a soil. As bulk density increases water infiltration, water holding capacity, aeration, and root penetration decrease, making it more difficult for crops to access resources essential for growth.

The regular application of agrochemicals in cropping systems further diminishes the health of soil. Agrochemicals include herbicides, pesticides, fertilizers, and other soil amendments. One of the main concerns with the addition of these chemicals is their interaction with soil organisms. Soil macro- and microorganisms include bacteria, fungi, and earthworms; all contribute to a healthy plant rhizosphere and provide a range of benefits within cropping systems. These organisms are very sensitive to variation in their environment such as changes in pH, salinity, and the carbon:nitrogen ratio. These inputs represent rapid cyclic environmental shifts to which soil organisms cannot acclimate or adapt to. Instead, the diversity of soil organism diversity is diminished.

Soil organisms play a range of roles in the development and maintenance of a healthy soil profile, which in turn affects the growth and development of crops. Microorganisms such as bacteria fix nitrogen, making the largely inaccessible pool of atmospheric nitrogen available for plant uptake. Fungi, like mycorrhizae, form mutualistic associations with plant roots, extending their network of nutrient and water uptake. Larger organisms such as earthworms help to form soil aggregates by creating macropores and producing worm castings. Many insects also contribute to the formation of soil aggregates as well as help reduce the weed seedbank via predation. Healthy, natural soil systems are engineered by a consortium of organisms and by design are able to provide the needs of plants. However, in some cropping systems, this level of provision is deemed inadequate, prompting the need for agrochemicals and at the same time impacting the functionality of the soil.
Soil degradation is not limited to artificial systems. There are several factors, both natural and human induced, contributing to the percentage of degraded land around the world, outside of agricultural systems. Wild fires, which occur regularly in arid regions, burn vegetation which help to hold soils in place. Climate change, combined with lack of management in fire-prone areas, has dramatically increased the frequency and intensity of these fires, increasing the potential erosion. Mismanagement and overgrazing of rangelands in dry regions also diminishes soil-stabilizing vegetation, creating the same potential for erosion. In more temperate regions, road salt application during the winter months has become cause for concern as these salts become distributed into the ecosystems affecting both soil structure and soil organisms.

The effects of soil degradation are not discrete, often tied to each other in a continuum in which some agricultural practices initiate a predictable sequence of events that ultimately leads to diminished soil health. Conventional tillage methods and the use of agrochemicals seem to be the catalytic events for such series of events in annual cropping systems; affecting soil structure, organic matter content, and the health of soil organisms. These in turn compromise the functionality of soils as the medium for crop growth and development. There is wealth of information on alternative practices that aim to reduce the impact of agriculture on soil health. For more information on soil conservation and alternative agricultural practices please visit the UConn Extension website or contact your local extension office.

Despite the evidence supporting the continual degradation of soils due to agricultural activities, there is little consideration for the viability of suggested remediation practices in regard to the effects on food production, farmers and the agriculture industry as a whole. Reducing tillage and agrochemical input is not a solution for many agricultural systems as some crops simply do not perform well in no till systems, while reduced agrochemical input would greatly compromise crop yields. Considering the importance of agriculture to society at large, farmers, who may be the most hardworking and underpaid individuals in the world, utilize available options to maintain soil health while still maintaining a productive and economically feasible operation.

From the farmers perspective, this is often represented by tradeoffs. Farmers are not ignorant to the concept of soil degradation or the importance of soil health. In fact, they understand the impact of these much better than anyone else. Operations which use agrochemicals and employ conventional tillage methods still take steps to maintain soil health. Many of these cropping systems utilize conservation practices such as the incorporation of cover crops or selection of organic agrochemical alternatives. Elizabeth Creech of NRCS (Natural Resources Conservation Service) wrote an informative piece entitled “The Dollars and Cents of Soil Health: A Farmer’s Perspective” which depicts many of the challenges farmers face when it comes to maintaining soil health. For more information please follow this link: https://www.usda.gov/media/blog/2018/03/12/dollars-and-cents-soil-health-farmers-perspective.
On October 26, 2017, UConn Extension and CT Farm Risk Management program teamed up to host the Robotic Milking Conference at the University of Connecticut in Storrs, CT. The conference program boasted an impressive lineup of farmers, researchers, and industry professionals. All seemed to advocate highly for the incorporation of the technology into the dairy industry. The event was attended by a range of local CT dairy farmers, most of whom who have already employed the technology in their dairy farming operations.

Robotic milking machines are hardly a novel technology, being commercially available since the early 1990's. Since then, the technology has evolved to include a range of benefits to both the farmers and cows alike. The robotic milking machines are voluntary meaning that the cows only get milked when they are ready. Upon entering the system cows are weighed and the teats are cleaned. The systems utilize a quarter-milking strategy, allowing for each teat to be milked individually. After the milk has been extracted cows return to the herd.

Much data is provided during the milking process that gives farmers a better idea on the health of the cows as well as the quality of milk collected. This information allows farmers to make more informed decisions about the herd and provides for the early detection of health problems. Measurements such as somatic cell count, total plate count, and milk fat percentage determine the quality of milk. Farms which have adopted the use of robotic milking machines
tend to see an increase in both somatic and total plate count within the first year. This is especially important for larger farms where somatic cell count tends to be lower than in smaller operations.

As times change, it is important for businesses to evolve. Robotic milking machines are playing an integral role in the evolution of this industry. The availability of reliable labor in agriculture is becoming increasingly pressing issue. This technology provides for the adaptation to a changing environment and allows farmers to spend their time doing more important things such as marketing and developing plans for the ever-growing agrotourism industry. For more information on this technology please visit the UConn Extension or CT Farm Risk Management website.

**IPM – Cultural Practices to Reduce Risk: Cover Cropping**

Cover cropping is one of the most beneficial and relatively simple cultural practices employed in agriculture. The use of cover crops provides a range of benefits from increased soil nutrients to erosion control. Organic and sustainable farming operations advocate highly for the use of cover crops; however, many large-scale industrial farming operations also make use of this simple and effective management practice. The USDA pushes for the use of cover cropping across all scales of farming, offering different cover crop mixes, selection tools, seeding rates and guidelines.

Cover cropping has become somewhat of a “no-brainer” when it comes to increasing and maintaining soil health. During the time in between cropping, it is important that fields not be left bare. Bare soils are highly sensitive to both wind and water erosion. Keeping a vegetative cover helps prevent this by holding the fine soil particles in place when the fields are not in use. At the same time, incorporation of cover crops into soils increase organic matter content, providing essential nutrients like carbon and nitrogen while reducing a soil’s bulk density. Maintaining soil nutrient levels with these “green manures” allows for reduced agrochemical inputs, creating a more sustainable and healthy soil profile.

Aside from increased soil health, cover crops provide protection from many different types of crop pests. Cover cropping between crops does a few things. The first is that it provides habitat for both natural pest enemies and habitats for small animals that feed on weed seeds. Weed prevention is accentuated during times of cover cropping because of the continuous competition cover crops provide with native weedy species. Without this continuous competition, weedy species are more likely to establish themselves on bare soils, produce seed, and contribute to the field weed seed bank.
There are many options for cover cropping. Each provide different benefits and it is easy to tailor the crop or mix of crops to a farm's needs as each cover crop has a different carbon:nitrogen. Some cover crops work better with different crop varieties and provide allelopathic benefits. Others with deep roots can be used to break up compacted soils and increase water infiltration. For more information on the different types of cover crops available, cover cropping practices, or their benefits please visit the UConn Extension or USDA - NRCS website or contact your local Extension office.

Upcoming Events:

UConn Extension’s
Cut Flower Workshop

Tuesday, January 8, 2019
9 am - 3 pm
Scout Hall, 28 Abbott Rd, East Windsor, CT
With Evelyn Lee, Butterhut Gardens, Southport, CT

AGENDA
9:00: Opportunities in cut flowers
9:20: Outlets for cut flowers
10:00: Logistics of growing cut flowers
10:30 - 11:00 Break
11:00: Bouquet making and vase design - spring and demonstration and vase design
11:45 - 12:15 LUNCH
12:30 Risk Management Information As It Relates to Cut Flowers: Joe Belcastro UConn
12:45 What the industry is calling for
1:05 Specific flower run-down From tulips to woody branches to specialty chrysanthemums - growing tips, markets and opportunities for specific flowers.
2:15 Expanding the idea of a CT Grown Flower Consortium
3:00 Wrap up and final discussions (time as needed)
UConn Extension's Annual Vegetable & Small Fruit Growers' Conference is on Monday January 7th, 2019.

[Click here](#) to view the program and register today. Early Registration is $40 and includes the Trade Show, continental breakfast, coffee, and lunch!

3 Pesticide Re-Certification Credits Available!

Contact [mackenzie.white@uconn.edu](mailto:mackenzie.white@uconn.edu) for more information.