Cornell University
Cooperative Extension
NWNY Dairy, Livestock & Field Crops Team

NORTHWEST NEW YORK DAIRY, LIVESTOCK & FIELD CROPS TEAM

Ag Focus

Happy Tech New Year!

Happy New Year! **** *There's no better time than January to start or try something new. Many technology advances are available, whether it is on the dairy, in the field or with the livestock. The team highlights a few options in this issue.*

Livestock Management? There's an App for That!

By: Nancy Glazier

There are more and more requirements for recordkeeping in production agriculture; if not a requirement it should be a necessity. You nearly always have your phone with you, so if you have a smartphone put it to work! There are many agriculture apps out there (hundreds) and I'll take a quick look at some available for livestock production I recently downloaded to my smartphone from the Google Play Store. These are all free, so keep in mind there may be upgrades or better ones for a small fee.

iLivestock. This is a good all-around app for livestock recordkeeping. Individual animals can be tracked by entering ID, sex, species, breed, and date of birth. Management can be done by groups of your own choosing which would be useful for group-treatments. This app can read from EID tags, too. Medicines and individual treatments can be tracked. This app can import data from other devices though I did not try that feature. Available for Android and iPhones.

Cattle Market Mobile. Try this one to keep tabs on market prices, formerly Cattle Talk Mobile. This app allows the user to check market reports from around the country by choosing the location of a market. It also gives you the option of estimating the value of your cattle for sale. Default markets can be set to speed up your use. This is available for Android and iPhones.

Continued on page 3

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Ag Focus
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Mission Statement

The NWNY Dairy, Livestock & Field Crops team will provide lifelong education to the people of the agricultural community to assist them in achieving their goals. Through education programs & opportunities, the NWNY Team seeks to build producers' capacities to:

- Enhance the profitability of their business
- Practice environmental stewardship
- Enhance employee & family well-being in a safe work environment
- Provide safe, healthful agricultural products
- Provide leadership for enhancing relationships between agricultural sector, neighbors & the general public.

Continued from page 1

ASI Market News. American Sheep Industry Association's app helps keep track of sheep markets. The report data is compiled by the USDA Agriculture Marketing Service. Available for Android and iPhones.

Feed Cost Calculator. This app comes from South Dakota State University. It was developed to compare the cost of feeds selected from a list. The app comes loaded with nutrient analyses but can be easily updated to your own analyses.

Pro Grass Rotation, coming soon! I am not sure if this one is applicable to the US, but this one is under development. Smart Farm Apps out of Ireland help manage the grazing system. Yields can be estimated, maps paddocks, displays graphs of grass growth.

This is a very short list. I'll post *Apps for Agriculture* to our website, which is a list that consists of sixteen apps compiled by Texas A&M AgriLife Extension.

And if you get tired of real-life farming, there are plenty of apps to play at it!

2014 Pesticide Training & Recertification Series

Mondays, February 3, 10, 17, 24, 2014;
Exam Monday, March 3, 2014

CCE - Ontario County
480 North Main Street, Canandaigua

Anyone interested in obtaining a pesticide certification and meets the DEC (Department of Environmental Conservation) experience / education requirements **OR** current applicators seeking pesticide recertification credits should attend. 2.5 recertification core credits will be available for each class. $140 for certification which includes the training manuals and all 4 classes. Does not include the $100.00 exam fee. Recertification is $75.00 for all 4 classes or $20.00 per class.

Registration:
Nancy Anderson: 585.394.3977 x 427 or x436
Registration form is available on the website:
www.cceontario.org

Since 2000 we've had 11 of the 13 warmest years on record. Droughts, extended heatwaves, floods and violent storms are becoming more frequent. And abnormal weather has become the new norm. You can't change the weather. But you can change the way you respond to it – with crop insurance and the Non-insured crop Assistance Program (NAP) from FSA.

In 2012, New York farmers purchased $539 million in crop insurance protection. That year, 1,131 farmers with coverage received more than $67 million in payments, or roughly $5.84 for each dollar they paid in premiums.

Which means crop insurance and NAP are not an expense, but a powerful tool that protects your harvest return.

To learn more about crop insurance and to enroll by the March 15 deadline, contact your crop insurance agent. Or **visit www3.rma.usda.gov/apps/agents to find a local agent near you.**

USDA
Risk Management Agency
This institution is an equal opportunity provider.

The New NY WORKS for Agriculture
New York State Dept. of Agriculture & Markets

Is your current disaster protection plan adequate for 2014?

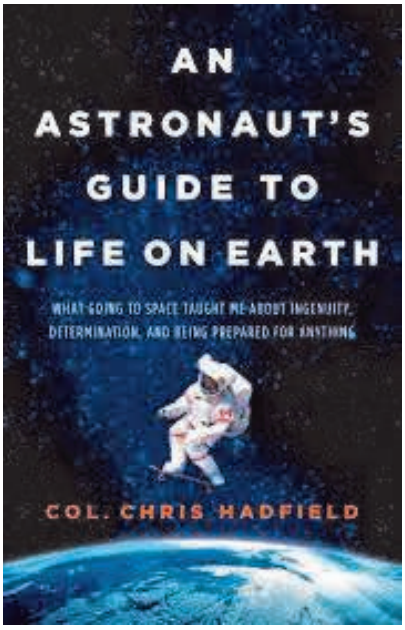
Call an agent today. You have until March 15, 2014 to sign up for or modify Crop Insurance for most vegetables and field crops.

For more information go to www.agriculture.ny.gov/AP/CropInsurance.html or call 800.554.4501

Books to Read in the New Year

By: Libby Gaige

While there's rarely a shortage of equipment to fix, snow to plow, or meetings to attend during the winter, things tend to be a little more relaxed than during the frantically paced growing season. If you find yourself sitting by the fire with nothing to do on a cold winter night, why not invest a little time in yourself? Pick up one of these books to learn something new about leadership and management to bring more value to your business.



Drive: The Surprising Truth About What Motivates Us – Daniel Pink

What motivates your employees the most? Is it that monthly milk quality bonus? Is it the lunch you buy them every once in a while? Or is it the word of thanks you offer them for a job well done? In this book the author shares his belief that what really motivates people is "the deeply human need to direct our own lives, to learn and create new things, and to do better by ourselves and our world."

The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change – Stephen R. Covey

We all experience personal and professional problems, no matter how successful we are. This book discusses the way that people perceive and act regarding productivity, time management and positive thinking, then guides you through the seven habits to "give you the security to adapt to change and the wisdom and power to take advantage of the opportunities that change creates."

An Astronaut's Guide to Life on Earth: What Going to Space Taught Me About Ingenuity, Determination, and Being Prepared For Anything – Col. Chris Hadfield

While the story of a Canadian astronaut might not seem all that applicable to your own life, anyone involved in agriculture could benefit from learning something about ingenuity, determination and being prepared for anything. I would argue that these are three traits necessary for being a successful farmer!

Outliers: The Story of Success - Malcolm Gladwell

The author of the bestsellers *The Tipping Point* and *Blink* delves into the question of what sets high-achievers apart from everyone else. Are they successful because of what they do or where they come from? This book will transform the way you think about success.

How to Win Friends and Influence People – Dale Carnegie

This book is certainly the oldest on the list, since it was first published in 1937, yet its message is just as relevant today as it was then. Carnegie believed that financial success is due 15 percent to professional knowledge and 85 percent to "the ability to express ideas, to assume leadership, and to arouse enthusiasm among people." Whether you're dealing with business partners, employees or salesmen, learning to deal with people so that they feel important and appreciated, and without making them feel manipulated, could definitely improve your working relationships.

GreenSeeker™: Sensor Technology for High Management Wheat

By: Mike Stanyard

It was a great year for wheat production in NWNY. With wheat prices remaining favorable, many producers utilized a high management approach and it paid off. National Ag Statistical Service (NASS) NY office reported that we averaged 68 bushels on 115,000 acres this year. However, many farms had fields that went over 100 bushels/acre and most had their best overall farm averages ever!

So where do we go from here with our high management wheat system? We have seen the importance of phosphorus early in wheat development. We have shown that fungicides are effective tools in the wheat system and they pay off. We have seen the importance of calculating tiller counts to determine nitrogen application timings and amounts. Nitrogen truly is the most limiting factor in wheat production so we should probably spend more time determining how much we can apply to maximize yield (and the plants don't lodge).

The GreenSeeker™ is an optical sensor that can be used to determine how much nitrogen is needed by the wheat crop. It is not a new technology and was first developed by Oklahoma State University in 1989 as a tool for detecting and spraying weeds. In 1994, it was used to take biomass readings from wheat plots and N applications were made based on a set of equations that correlated sensor reading to N rates. It underwent a lot of changes and it wasn't until 2000 that the N Fertilizer Optimization Algorithm (NFOA) was established. This algorithm incorporated yield prediction and the response index to determine mid-season N rates. It wasn't until 2002 that the first GreenSeeker™ was commercially released by N-Tech Industries (Ukiah, CA). Trimble acquired N-Tech in 2009 and in 2012 they began marketing hand held units as well as those that are mounted to sprayer units to determine N needs.

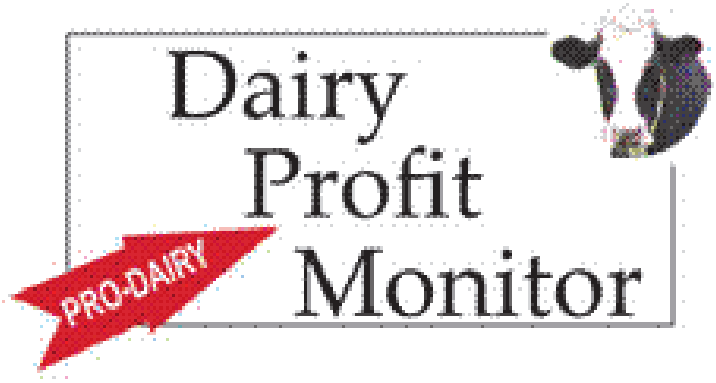
How does it work? It basically measures the health of the crop and applies the optimum amount of N. The GreenSeeker™ system uses optical sensors to measure and quantify the variability of the crop. It then creates a targeted prescription to treat the crop variability. The system is calibrated using a Nitrogen Rich Strip in every field. This single pass of roughly 150 pounds of N is applied at planting or shortly after. N needs can be determined by comparing the sensor readings in the N Rich Strip to the normal wheat next to it. The biomass per day can then be estimated and used to estimate wheat yield obtainable. Yield and N needs can then be determined.

Can this sensor technology be used in NY? It is already being used. There are a few GreenSeeker™ units being utilized by custom applicators and individual producers in NWNY. We have limited data so far but those that are using them for N applications feel that it is helping them put on the appropriate amount on a field by field basis. In the near future, we will see other possible uses with herbicide and fungicide applications.

At the 2014 Soybean/Small Grain Congresses on February 5 & 6, we will take a closer look at the GreenSeeker™ and how we may be able to incorporate this tool into our small grain production. Until then, here are some good videos on how the GreenSeeker™ is being used on the sprayboom http://www.youtube.com/watch?v=nwK3hNfSbm8 and as a handheld device http://www.youtube.com/watch?v=zpw-5GbOMQA.

Tools for Dairy Farm Business Management and Planning

With 2014 just around the corner, the season for year-end financial planning is upon us! These valuable tools are available to help improve the financial analysis and management of your farm business, and NWNY farm business specialists are here to help you get started!



Dairy Farm Business Summary

An annual benchmarking program that provides insight into your financial situation, cost of production and profitability in the past year. This information can help you make better financial decisions, as well as enable you to set future goals, http://dfbs.aem.cornell.edu/

Dairy Profit Monitor

A monthly business management program featuring self-directed data entry, providing timely and concise reports to help measure ongoing operational performance, profitability and management changes on your dairy farm,

http://www.dairyprofit.cornell.edu/

Dairy Acceleration Program

Cost share program to help eligible dairy farmers to develop business plans for successful and environmentally responsible growth. Funds may be used for creation of strategic business plans focused on growth, design of new or remodeled facilities, or development of environmental and farmstead plans,

http://ansci.cornell.edu/prodairy/dairy_acceleration/

Dairy Profit Teams

NY Farm Viability funded program to help fund teams of professionals such as your nutritionist, extension agent, veterinarians, etc., selected by you, that meet regularly and work together to help improve business operations and farm profitability.,http://www.nyfvi.org/Default.aspx?PageID=2399

Contact your dairy business specialist today!

Joan Petzen: 585-786-2251 x122

John Hanchar: 585-991-5438

Beth Dahl: 607-592-5345

$SSSS WE BUY MACK, FREIGHTLINER, PETE, KENWORTH, Etc. TRUCKS and CAT, KOMATSU, CASE, HYUNDAI, IR, Etc. CONSTRUCTION EQUIPMENT for $SSSS

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OVER 325 TRUCKS AND OVER 150 PIECES OF CONSTRUCTION EQUIPMENT

1998 KENWORTH T800; 335 HP Cummins M11 Diesel; 319,911 Miles; 8LL Trans.; Hendrickson Susp.; 4.88 Ratio; 22.5 Tire; All Steel Wheels; 208" WB; Tri-Axle; 20K F/A; 40K R/A; Very Clean, Low Mile Cab & Chassis w/Double Frame; Stk. #4456 - **$34,900**

2001 PETERBILT 357; 380 HP CAT C15 Diesel; 376,244 Miles; 13-Spd.; Engine Brake; Air Ride Susp.; 3.70 Ratio; 22.5 Tires; All Steel Wheels; 201" WB; Tandem Axle; 12K F/A; 40K R/A; Good Running, Low Mile Daycab w/Double Frame & Wetkine System; Stk. #4457 - **$21,500**

(4) 2009 & (1) 2008 MACK GU713 CAB & CHASSIS; Mack MP8 12.8L 485 HP; 18-Spd. Eaton Fuller Manual; Engine Brake; PTO; 8.27 Ratio; 20K F/A; 65K R/A; Camelback Susp.; 252" WB; Triple Frame; 52K and 61K Miles - **$71,900**

2003 MACK CH613; (2) 2003 & (4) 2002; 10-Spd. Manual; 164" WB; EXPORT PRICE SHOWN!; Very Clean Daycab; Work Ready; Fleet Owned; Matching 2002 With The Same Specs; 619K Miles; Stk. #4411 - **$13,500**

2000 MACK RB688S; E7; 350 HP; Eng Brake; Maxitorque; 13-Spd.; Air Lift 3rd Axle; Dbl. Frame; 20 Front/44 Camelback; 276 in. WB; 25 ft. Flat Bed; Front Mtd Knuckle Boom; Hyd Outriggers; Block Forks; 240,323 Miles. We Will Separate Flatbed and Boom

2000 PETERBILT 378; CAT C15 6NZ 475 HP; Jakes; 18-Spd. Manual Trans.; 16K Front w/Dual Steer Box; 46K Rears; Hendrickson Susp.; PTO Wetline Kit; 557K Miles; Good Running Heavy Spec Truck; Very Clean; Double Frame; Full Locking Rears; 16'8" Of Frame Behind The Cab; 152" CT; 228" WB; Headache Rack; Stk. #4425 - **$35,900**

2001 STERLING LT9513 6-AXLE DUMP TRUCK; CAT C12 430 HP; Engine Brake; 8LL Trans.; Air Lift 3 Self-Steering Axles; Hendrickson RB Suspension; 316" WB; 24' Aluminum Box - **$53,900**

1999 STERLING AT9513 FLATBED DRYWALL BOOM TRUCK; CAT; Jake; 8LL Trans; 20 Front/46 Rears w/Tag Axle; Walking Beam Suspension; Fast 300 SE Drywall Boom; 25' Bed; 301,419 Miles. We Will Separate Flatbed and Boom

2005 MACK CX613; Mack 460 HP; Jakes; 13-Spd. Manual Trans.; Very Clean Single Bunk Sleeper Truck; 223" WB; Refrigerator; 775K Miles; EXPORT PRICING SHOWN!!; Stk. #4418 - **$22,500**

2002 FREIGHTLINER FLD DUMP; Detroit Diesel 12.7 HP; 470 HP; Jakes; Allison Auto.; 20K FA; 65K Rears; 50,796 Miles; (ECM Plug-In Verified!!); 18' Steel Box; Rubber Block Susp.; 12Rx24 Tires; 244" WB - **$47,900**

1999 PETERBILT 378; Cab and Chassis; CAT; 10 Spd Manual; 20/44 Rears; Air Ride; Tag Axle; 25 ft.

2000 PETERBILT 378; 475 HP CAT 3406 Diesel; 597,698 Miles; 18-Spd.; Engine Brake; Air Ride Susp.; 22.5 Tires; Alum. Wheels; 196" WB; Tandem Axle; 14.6K F/A; 46K R/A; Heavy Spec Daycab; Full Locking Rears; One Line Wet Kit; Will Be Sold With New In-Frame Engine Rebuilt w/12-Month Warranty; New Caps Rear/85% Front Rubber; Stk. #4309 - **$37,850**

1997 PETERBILT 357; 330 HP Cummins M11 Diesel; 716,000 Miles; 9LL Trans.; Engine Brake; Walking Beam Susp.; 17'6" Length Steel Body; 22.5 Tires; Alum. Wheels; 260" WB; Quad Axle; 20K F/A; 46K R/A; Very Heavy Dump Truck w/13" Frame; Electric Tarp; Stk. #4483 - **$28,500**

2000 OSHKOSH F2346; Cummins M11 330 HP; Diesel; 9-Spd.; Eng. Brake; Hend. Susp.; Steel Composition; 216" WB; T/A; 23K FA; 46K RA; Oshkosh F2346 6x6 Water Truck; Dbl. Frame; 6,000 Gal. Tank; Water Cannon & 5 Spray Nozzles; Will Separate If Want 6x6 Chassis; Stk. #4451 - **$39,900**

(2) 1999 INTERNATIONAL PAYSTAR 5000; 195,567 Miles; Good Running Mixers; Cummins M11; 9LL Manual Trans.; haulmaax Susp.; D/F; 50-75% Rubber; McNeilus 10.5 Cu. Yd. Mixers; We Will Separate The Mixers From The Chassis; 20' Of Frame Behind Cab; 150" CT; 214" WB; Full Locking Rears; Stk. #3966/3965 - **$27,900 Each**

(5) 2005 MACK CX DAYCAB; Mack 350/380 HP; Jakes; 10-Spd. Manual Trans.; 400K-525K Miles; Ask About Special Export Pricing - **$22,500**

2000 PETERBILT 379; 460 HP Cummins N14 Diesel; Engine Brake; Air Ride Susp.; 206" WB; 24.5 Tires; Alum. Wheels; Tandem Axle; 12,000# F/A; 44,000# R/A; 860,930 Miles; Good Running, Clean Daycab; Recent Engine Work; New Cylinder Heads; In-Line Wetline; Rubber 90%; Stk. #4325 - **$31,500**

2007 WESTERN STAR 4900; CAT C15 475 HP; (2) Tanks; 18-Spd.; Eng. Brake; 4.10 Ratio; 18K FA; 46K RA; Air Susp.; 500K Miles; 19'6" Alum. Dump Body; Stk. #4237 - **$59,900**

1999 PETERBILT 357 CAB & CHASSIS; Cummins ISM; 10-Spd. Trans.; 20K F/A; 40K R/A; Dbl. Frame; Clean Chassis; Stk#4458 - **$24,900**

(2) 2004 KENWORTH T800B; C10 CAT 335 HP; Diesel; 10-Spd.; Eng. Brake; Neway Susp.; 172" WB; 22.5 Tires; All Steel Whls.; T/A; 12K FA; 44K RA; Full Lockers; 156,441 Miles; Very Clean; Low Mile Tractors w/Braden 45,000# Winches; Dbl. Frame; Tall Rollers; 75% Rubber; **Second Truck: 2003 w/Same Specs; 245K Miles; 6x4**; Stk. #4427/4428 - **$31,900**

2006 VOLVO VHD42B200; 395 HP Volvo VED12D Diesel; 200,337 Miles; 8LL Trans.; Engine Brake; TuffTrac Susp.; 16' Steel Body; 4.89 Ratio; 24.5 Tires; 232" WB; Tandem Axle; 20,000# F/A; 46,000# R/A; Good Running, Clean Dump Truck w/Electric Tarp; Stk. #4006 - **$62,500**

2001 KENWORTH T800; 370 HP CAT C12 Diesel; Auto. Trans.; Engine Brake; 15'6" Steel Dump Body; Chalmers Susp.; 4.88 Ratio; 22.5 Tires; Tri-Axle; 18,000# F/A; 46,000# R/A; 309,159 Miles; Good Running Dump Truck w/Auto. Trans.; 18,000# Lift Axle; D/F; We Can Remove Body; 15' Of Frame Behind Cab; #4278 - **$36,900**

2010 WESTERN STAR 4900SA; 14.9L; Detroit Diesel 560 HP; Engine Brake, Eaton Fuller 18-Spd., PTO, 6.75 Ratio; 20K FA; 65K RA; Walking Beam Rear Susp., 219" WB; Dual Vertical Exh., Dual External Air Cleaners; Dual Steering Boxes; Double Frame, 28,159 miles - **$79,800**

1997 VOLVO WG64F; Standard Cab; Cummins M11 330 HP; Diesel; 8LL; T-Ride Susp.; 4.87 Ratio; 250" WB; 22.5 Tires; All Steel Wheels; Tri-Axle; 21K FA; 46K RA; Clean Low Mile Cab & Chassis; 172" DT; 23' Of Frame Behind Cab; Stk. #4450 - **$25,900**

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Mapping Management Zones with Soil Conductivity

By: Bill Verbeten

By measuring differences in conductivity across the field in combination with GPS data, management zones can be identified for variable rate management. Currently the NY Corn and Soybean Growers Association is in the early stages of conducting on-farm research across the state of New York using the Veris system in conjunction with variable seeding rates and fertilizer rates in corn and soybeans across many soil types. Additionally mapping soil conductivity can enable variable herbicide rates corresponding differently in organic matter levels and soil types. Many consulting companies and individual farms are also exploring soil conductivity in northwestern NY.

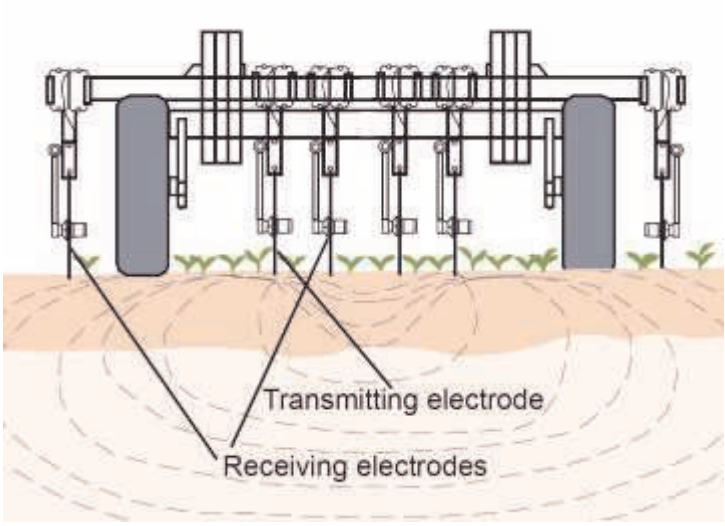

Figure 1: Contact Soil Conductivity Unit
Source: Veris Technologies

What is Soil Conductivity?

It is a measurement of how well the soil conducts electricity. Two types of technology are available for measuring electrical conductivity in the soil. The sensors are either contact (Veris) or non-contact (Geonics Limited and Geophex). Both types measure the ability of the soil to conduct an electrical current. The output is usually recorded as units of milliSiemens per meter (mS/m) or deciSiemens per meter (dS/m) (1 dS/m = 100 mS/m). Contact sensors have at least one coulter sending electrical current into the soil (transmitting electrode) and at least one other coulter (receiving electrode) which measures the volt -age drop between the electrodes. Veris units operate with this technology, are the mostly widely used, and a schematic is pictured in *Figure 1*. Often multiple sets of sensors will run at multiple depths to better examine the variation in soil composition across a field.

Non-contact sensors use electromagnetic induction and do not come into contact with the soil relying on a transmitter and receiver coil mounted on a non-metallic frame. A metal frame would interfere with the electromagnetic induction readings. The EM38 (Geonics Limited) and GEM-2 (Geophex) sensors utilize this technology. Often these non-contact sensors are used in smaller scale research plots, but some commercial scale equipment is available.

Incorporating Soil Conductivity Data on Your Farm

Soil electrical conductivity will vary with soil moisture, temperature, soil type, organic matter, manure application, & salinity. Soil conductivity decreases in dry soils compared to wet soil and as the soil temperature falls. While the actual soil conductivity numbers change with varying moisture and temperature conditions, the management zones that are calculated from the relative differences often are the same. Unless a field has a patch of pure sand, the soil electrical conductivity usually only varies by 5 to 10% across soil types.

Data can be gathered under many field conditions for these units. For more operational information on measuring soil conductivity, soil OM, and soil pH mapping equipment, check out the Precision Ag section on www.nwny.org.

Variation of conductivity across soil types is the one of the main advantages of using this technology. While the maps are often very similar to the NRCS soil maps, soil conductivity maps have a finer resolution. They can also correct the border areas between soil types that are not accurately depicted in a soil survey. Soil conductivity increases with increasing organic matter, and will make a more detailed map than grid soil sampling alone.

Continued on page 10

Continued from page 9

Targeted soil samples should still be taken on a regular basis within management zones. Soil samples will still require wet chemistry analysis as in-field measurements of minerals are still in the early stages of development.

Care must be used when mapping fields after manure applications. Manure contains relatively high levels of salts compared to soils. Soil conductivity measurements will increase as the amount of manure applied increases. It is best to measure fields prior to manure application. Soils from the Great Plains often contain high salt levels and mapping salinity values for management zone creation is valuable on the high plains, but not in NY.

The information layer from soil conductivity should be used in combination with the NRCS soil layer, traditional soil test data, and multiple years of yield map data to form management zones on farms. Any one of these pieces of information in isolation is not as valuable as combining them together to plan for variable rate management of seeds, fertilizers, lime, and herbicides.

AGENDA

MANAGING BUSINESS RELATIONSHIPS *on the* FAMILY FARM

JANUARY 30, 2014

8:30 a.m.	Registration & Exhibits
9:30 a.m.	Dick Wittman
10:30 a.m.	Break & Exhibits
10:45 a.m.	Dick Wittman Continued
12:00 p.m.	Lunch & Exhibits
1:15 p.m.	Corn & Soybean Yield Contest Results
1:45 p.m.	Dick Wittman
2:45 p.m.	Break & Exhibits
3:00 p.m.	Dick Wittman Continued
3:30 p.m.	Adjourn
3:45 p.m.	Annual Meeting - All Are Invited

SPECIAL GUEST

R.L. "Dick" Wittman manages a large-scale dryland crop, range cattle and timber operation in northern Idaho in partnership with three other family partners. He also provides seminars, workshops and private consulting services to agricultural lenders, agribusinesses and farmers.

SAVE *the* DATE

JAN 30TH 2014

MANAGING BUSINESS RELATIONSHIPS *on the* FAMILY FARM

2014 NEW YORK CORN and SOYBEAN WINTER EXPO

January 30, 2014

HOLIDAY INN, LIVERPOOL, NY

Register online today at www.nycornsoy.org

200 Cow Dairy Improves Reproduction

By: Joan Petzen

Ted West at West Flats Dairy in Varysburg, Wyoming County is pleased with improved reproductive performance. This was achieved since implementing activity monitoring for heat detection. With 200 cows and the same number of heifers, and just Ted, his father, Alan, and a milking crew, as a labor force, historically they struggled with heat detection particularly during corn silage harvest and spring planting and hay harvest.

In January 2013, they purchased the Smart Dairy System from Boumatic and installed a portal for data collection where cows exit the parlor. To keep the initial capital investment low, they chose to purchase just 60 collars. Collars are put on cows when they are ready to breed and removed once they are checked pregnant. Within 2 weeks, Ted had gained enough confidence to breed cows based on activity reports.

Due to cost, he has not purchased the software required to link the system with Dairy Comp. Once a cow is identified by Smart Dairy he checks their record in Dairy Comp and makes his breeding decision from the information provided by the two systems. The results, monthly pregnancy rates improved to 25 to 26%. In the past, their typical pregnancy rates fluctuated widely and averaged 18 to 19% with significant slippage when field activities took their attention away from the herd.

Because of the success of the system with their milking herd and concerns about age-at-first-calving lingering between 24 and 26 months, they purchased a second portal in August and 20 additional collars for use in their breeding age heifer pen. They mounted a portal above the waterer and started using the system for catching heifers in heat too. They are already seeing the projected age at first calving for the herd starting to drop.

They chose to implement the system incrementally, purchasing only 60 collars early on and not linking with Dairy Comp. One of the drawbacks of not having more collars is, if a cow aborts and you are relying heavily on the system, you miss her coming back into heat. This has prompted them to purchase an additional 20 collars to be able to follow cows through more of the lactation. Ted indicates that with the purchase of radio frequency tags, another portal and some renovations in the parlor, they could expand the system to collect milk data if they choose to down the road.

Another benefit the Wests are looking forward to is leveling out their freshening pattern. They have experienced seasonal fluctuation in the number of cows calving each month, with as few as 15 to 20 calving some months and up to 40 others. This puts a real strain on dry cow and transition facilities and ultimately cows. A more level calving pattern will help them avoid overcrowding of pens.

Since they feed one group total mixed ration, getting cows bred back promptly and not having a few cows hanging around way long in days in milk (DIM) will lead to improved herd health. Their goal is to average 155 DIM throughout the year.

Ted indicates, “The system finds cows in heat even while I am sleeping or out in the field. Improved heat detection resulting from implementation of the activity monitoring will allow their farm to accelerate their internal herd growth. Culling for poor reproductive performance has already dropped, allowing us to make more voluntary culling decisions. We will be milking the ‘right cows.’ Activity monitoring is part of a bright future at West Flats Dairy.”

A Dairy Riddle to Ponder

By: Jerry Bertoldo

A clue to the answer is shrink, that combination of processes that begins in the field and ends with feed delivery to the cow. Traditionally, shrink has been thought of as the physical decrease in height of silage in an upright or bunk silo between filling and feed out, sort of a slow settling idea.

In the 1990's, forage researchers at the University of Wisconsin surveyed and sampled a variety of forage storage systems on many dairy farms. They wanted to determine the range of dry matter loss both obvious and obscure. Losses occur as forage is moved from field to storage, as leachate, through gas production during fermentation, with top surface spoilage and during feed out. They tested tower silos, bunks, drive over piles, bags and baleage alike. Dry matter content was used to segregate each system even further. Results showed that forage losses could be staggering. Subsequent field studies by Cornell and industry verifies these findings.

A chart produced by the Wisconsin investigators shows that airtight upright silo systems do the best overall job of dry matter preservation. The best ones lose as little as 6%, mostly from the formation of gasses during the fermentation process. The worst examples, uncovered poorly packed piles, lost up to a whopping 58%! The common place plastic covered bunkers lost between 16 and 31% of the original dry matter from field to feed out.

Today with real time dry matter instrumentation on choppers it is simple to know if the crop is in the preferred range or not. Both packing density and fermentation characteristics are tied to dry matter. On newer machinery chop length can be automatically adjusted by on-board sensor "labs" depending on the dry matter and the forage. Packing density can be correlated to both dry matter and chop length. For corn and hay crop silages an average of 15 lbs. of dry matter per cubic foot has been a benchmark. Levels of 20 lbs. DM/cu ft and beyond are possible, however.

Another key to the riddle lies with the average packing density in the silage mass. For tower silos there is not much you can do beyond chop length and dry matter to help out the self-packing nature of this storage system. AgBags have adjustments on the bagger that can get you good densities hopefully without splitting the plastic. As for bunkers and drive over piles density is quite dependent on tractor tonnage, thickness of each new layer spread and the rate of arrival of fresh material. Keeping the quality high often requires inoculants. The use of oxygen barrier plastics with sufficient tires or sand bags over the top prevents the infusion of oxygen reducing greatly dry matter and nutrient breakdown.

Larger harvesters, fleets of high capacity trucks and the physical limitation of two maybe three tractors on a silage pile makes packing aimed at high density compaction difficult. An old thumb rule states that 800 lbs. of tractor per ton of chopped forage per hour is needed for good packing. Using this formula, two 20 ton tractors spreading and packing 100% of the

time can handle 100 tons of material in one hour to achieve a final 15 lbs. DM/cu. ft. density. More sophisticated spreadsheets developed in Wisconsin would say that if the layer of newly spread forage was kept to a thickness of 6" it would permit the same two tractors to handle 160 tons instead with the same average density obtained. For many operations either of those scenarios would not keep up with the parade of trucks. If the total tractor weight could be increased to 30 tons without changing any other parameters, the resulting density would reach 19 lbs.DM/cu. ft. This would translate to an increase of 22.5% in tonnage storage in the same space – no increase in bunk height, no lengthening of the silage "wedge," no unrealistic poorly packed steep slopes! Additionally, the fermentation characteristics and feed quality increases while shrink decreases.

How do you know if your packing efforts have resulted in low dry matter loss, high nutrient retention and aerobically stable silage at feed out? When you open up the bunk and can sample it has long been the answer! Predictions can be made using the "bunker silo density calculator" on the UWEX Forage Team Website under "Storage Structures". Go to http://www.uwex.edu/ces/crops/uwforage/dec_soft.htm for this and other helpful forage tools.

A recent development by northern NY Extension educators, and one we have experimented with on the team, uses top down sampling of bunks and piles during filling by way of a 1 HP boring drill, a 30 inch heavy drill extension and the Dairy One Forage probe on the end. Core samples from 10" below the surface or deeper are well correlated with regional compaction rates. With a depth reading and dry matter determination an on-line density calculator will give you the DM lbs./cubic foot. This apparatus is a bit pricey, cumbersome and time consuming, but offers a real time evaluation of what is actually happening. Other uses such as sampling before opening up a bunker, drive over pile or even AgBags has been played with a bit and offers even more possibilities.

Answer to riddle: Ideally delivered, packed and preserved silage

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For Upcoming Webinars:

Basic Vaccinology: Why Vaccines Work or Don't Work
Dr. Dan Grooms, Michigan State University
January 13, 2014 12:00 PM Central Time

Forage Fermentation: How to Make Good Silage
Dr. Limin Kung, University of Delaware
February 2014 (date & time to be announced)

Rural Tax Education at <www.ruraltax.org>

By: John J. Hanchar

As the end of the year draws near, farm business owners will begin turning attention to an important farm financial management task -- completion of 2013 Income Tax Returns. The website <www.ruraltax.org> can be a valuable source of information as individuals complete returns themselves, or as they work with a tax preparer.

- Hot Topic
- Webinars
- Link to Tax Guide for Owners and Operators of Small and Medium Size Farms
- Tax Topics
- Sample Tax Returns
- Related Links

These are six of several useful items that stand out when you visit the home page of the Rural Tax Education website at <www.ruraltax.org>.

Overview

The purpose of the Rural Tax Education website is to provide farmers and ranchers, other agricultural producers and Extension educators with a source for agriculturally related income and self-employment tax information. The emphasis is on information that is both current and easy to understand. The home page notes that "Tax issues are important for agricultural operations, because income and self-employment taxes are a major cost and also because more and more USDA programs are being linked to a producer's federal income tax return."

The National Farm Income Tax Extension Committee oversees the website.

Webinar Announcements

Visit the Rural Tax Education website for information on viewing archived versions of webinars. At the time that I was preparing this article, the website highlighted the following webinar: "Five Things to Know about Federal Taxes When Starting a Farm Business."

Tax Guide for Owners and Operators of Small and Medium Size Farms

The thirteen chapters in this guide cover several areas including an overview of taxes, income and deductions, tools to manage tax liability, and buying and selling a farm among others.

Tax Topics

This section contains fact sheets and articles covering important income tax and self employment tax topics as they apply to farm business owners.

- Farm, Farming and Who's a Farm for Tax Purposes
- Filing Dates and Estimated Tax Payments
- Farm Losses versus Hobby Losses: Farmers Must Plan Ahead to Avoid Adverse Tax Consequences

Sample Tax Returns

Three sample tax returns for three hypothetical farming operations show you how to prepare income tax returns using actual income tax forms with explanations.

Related Links

This section contains a summary of recent tax law changes, webinar archive, and the valuable IRS publication Farmers' Tax Guide (IRS PUB 225). Links to websites and articles also are placed in this section including a link to the IRS website <http://irs.gov/>.

Last month's issue of AgFocus reviewed the topic of farm business summary and analysis. If you are interested in improving your farm business' ability to practice sound financial management, then please contact me to learn more about some of the tools available and their value and, or to discuss plans for completing a farm business summary and analysis for 2013. Owners of all types of farm businesses are encouraged to contact me. The NWNY Dairy, Livestock, and Field Crops Program has the capacity to develop valuable farm business summary and analysis. The NWNY team has the capacity and desire to work with a variety of farm businesses - dairy (small, medium, and large; conventional; organic; grazing; and others), field crop, livestock, and others.

Farm Business Management for Women in Agriculture

A Risk Management Perspective Program Offered by Cornell Cooperative Extension throughout New York State

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Who should attend?

Experienced farm and ranch women wanting a more active role in the business aspects of their farm operations will find this program motivating, enjoyable, and practical. Participants say they find answers and friendship, grow more confident, improve their ag business skills, and establish community prestige.

- Reduce risk exposure by analyzing legal, human resource, marketing, financial, and production factors
- Increase knowledge and professional skills in agricultural risk management
- Set goals and network among farm colleagues and industry professionals
- Discover your personality type and how it affects working with others.
- $60 per person includes lunch, all course materials, and handouts. Limited scholarships available upon inquiry.
- Pre-registration is required. Registration deadline is Friday, January 10, 2014.

FOR MORE INFORMATION AND/OR LOCATIONS, VISIT:

www.Facebook.com/AnniesProjectNYS

www.NYAnniesProject.org

YOUR REGIONAL CONTACT:

Joan Petzen

NWNY Dairy, Livestock, and Field Crops Team

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Cornell Cooperative Extension provides equal program and employment opportunities. Accommodations for persons with special needs may be requested by contacting the Cornell Cooperative Extension host site by January 10, 2014, prior to the start of the program.

The 2nd Northeast Silvopasture Conference:
Creating Profitable, Practical Silvopastures for your Farm

Thursday, January 30th 2014 at the Century House in Latham, NY (Albany)
Preceding the 6th Annual "Winter Green-up Conference" on January 31st and February 1st

Silvopasturing has vast potential in the Northeast to increase farm viability and address numerous environmental challenges through the sustainable and symbiotic production of timber and livestock on the same acreage. This special one-day conference will build on the concepts and knowledge presented at the inaugural *"Northeast Silvopasture Conference"* in November, 2011. Foresters, farmers, land managers and conservationists – and anyone else with a role or interest in sustainable food and timber production systems – will benefit by attending this conference. Come meet and network with other silvopasture practitioners and learn how to make silvopasturing work for your farm or the land that you manage for others. *Credit approval pending for Certified Crop Advisors, Certified Foresters, and FSA borrowers. Approval updates posted at: http://www.silvopasture.ning.com/* To register: https://reg.cce.cornell.edu/2014wintergreenupnesilvo1-30-1_201

Soybean/Small Grains Congress 2014

Soybean & Small Grain Disease Management
Gary Bergstrom, Cornell University Plant Pathologist

Emerging Small Grains Update: Malting Barley & Winter Triticale Management
Bill Verbeten, Cornell Cooperative Extension / NWNY Team

Soybean Insect Watch List for 2014
Keith Waldron, NYS IPM Program

NY Soybean Yield Contest Winners - How did they do it!
Mike Stanyard, Cornell Cooperative Extension / NWNY Team

Herbicide Choices for Weed Control & Resistance Management in Soybeans & Wheat
Russ Hahn, Cornell University Weed Scientist

Green Seeker Nitrogen Application Technology for Wheat
Mike Stanyard, Cornell Cooperative Extension / NWNY Team

Variety x Planting Date Studies & Field-scale Studies on Seed Treatments & Seeding Depth
Bill Cox, Cornell University Agronomist

DEC Recertification points & Certified Crop Advisor Credits pending

February 5, Clarion Hotel, Batavia
February 6, Holiday Inn, Waterloo

Reservations Must be Received by: January 27, 2014

Register on-line at: www.nwnyteam.org
Cathy Wallace: 585.343.3040 x138 or cfw6@cornell.edu

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9 ***NYS Agricultural Society Annual Forum,*** Holiday Inn, Liverpool

15 ***Corn Congress,*** 8:30 a.m. - 3:00 p.m., Clarion Hotel, 8250 Park Road, Batavia. To register contact: Cathy Wallace, 585.343.3040 x138 or cfw6@cornell.edu

16 ***Corn Congress,*** 8:30 a.m. - 3:00 p.m., Holiday Inn, 2468 NYS Route 414, Waterloo. To register contact: Cathy Wallace, 585.343.3040 x138 or cfw6@cornell.edu

17-18 ***NY Beef Producers Association Annual Winter Conference,*** Holiday Inn (Syracuse), 441 Electronics Parkway, Liverpool. Contact: Brenda Bippert at 716.870.2777

30 ***2nd Northeast Silvopasture Conference,*** Century House, Route 9, Latham, NY. Contact: Brett Chedzoy at 607.742.3657 or bjc226@cornell.edu

31 ***Winter Green Up Conference,*** Century House, Route 9, Latham, NY. Contact: Tom Gallagher at 518.765.3511 or tig3@cornell.edu

February 2014

1 ***Winter Green Up Conference,*** Century House, Route 9, Latham, NY. Contact: Tom Gallagher at 518.765.3511 or tjg3@cornell.edu

5 ***WNY Soybean/Small Grains Congress,*** 8:30 a.m. - 3:00 p.m., Clarion Hotel, 8250 Park Road, Batavia. To register contact: Cathy Wallace, 585.343.3040 x138 or cfw6@cornell.edu

6 ***Finger Lakes Soybean/Small Grains Congress,*** 8:30 a.m. - 3:00 p.m., Holiday Inn, 2468 NYS Route 414, Waterloo. To register contact: Cathy Wallace, 585.343.3040 x138 or cfwe6@cornell.edu

March 2014

19-20 ***Northeast Dairy Producers Association (NEDPA) Conference,*** Holiday Inn, Liverpool

April 2014

8 ***Herd Health and Nutrition Conferences,*** Syracuse, NY

Happy New Year

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