Cornell Cooperative Extension of Oneida County's

Farm Flash

Spring brings new life and new hopes

With the onset of spring comes many beautiful things such as blooming flowers, green grass, and new life. This past week we welcomed a healthy thoroughbred filly into our family. Her mother was a "stakes-placed" mare who loved to run and her father broke the track record at Aqueduct. Do I hope that she will run like the wind? You bet I do. But as a 4-H Youth Animal Science Educator in Oneida County I certainly know the benefits of pairing youth with animals and watching them grow together. My husband and I raise and race thoroughbred horses. More importantly, we are raising five daughters that will hopefully grow up to respect the fragileness of life and the responsibility of caring for animals. That is certainly one of the many goals of the 4-H youth development program as well. When we work with youth in agriculture we are working with the leaders of tomorrow. With today's challenging times and sad economy it is a breath of fresh air to stop and take a moment to appreciate the new life that spring brings. Our young people represent that "new life" in agriculture. As we work with youth let us always remember that with new life come new hopes as they are the future of agriculture.

>>Kristi Cranwell, Oneida County 4-H Youth Animal Science Educator

Special Livestock Edition

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Cornell University
Cooperative Extension
Oneida County

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CCE of Oneida County Farm Flash "Table of Contents "

Page 5 *A Great New Variety from Cornell's' Forage Breeding Program*
Page 6 –7 *New Corn Herbicides for 2008*
Page 8-9 *Selecting a Herd Sire*
Page 10-14 *Farm energy audit can help conserve energy and lower costs*
Page 15 *Assessing Alfalfa Stands for Brown Root Rot*
Page 16-18 *Corn Planter Pre-season maintenance*
Page 19-20 *Cornell Universitys Beef Management Website*
Page 20 *Ag Questions Answered*
Page 21 *Women in Farming, 7 Ways to Control Feed Cost*
Page 22 *Factors Affecting Meat Tenderness of Forage Finished Cattle*
Page 23 *Consumer Acceptability of Grass Fed Steaks*
Page 24-25 *People in Agriculture*
Page 26 *Calf Corner*
Page 27 -28 *Natural Gas Mining*
Page 29 *Timing of First Hay Harvest*
Page 30 *Soybeans*
Page 31 *Should Wheat Producers Apply Fungicides to their Wheat in '08*

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For more information please call CCE of Oneida County at (315) 736-3394 Please visit our website at www.cce.cornell.edu/oneida

Mark Your Calendars…

Artificial Insemination Bovine Breeding School

Dates: Saturday May 3 and Saturday May 10
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Instructor: Kim Boice
23 years AI experience
Purchase of Breeding Kits $150 extra if needed
Sponsored By: Accelerated Genetics
Jim Gagnon representative
607-656-9127

Lambing Time Field Day

June 14, 2008

The Cornell Teaching and Research Center Sheep Farm is hosting one of its regular, informal lambing time field days on June 14 from 9 am to 3 pm. Topics to be covered vary with the season, but in general they include:

- Breeding
- Lambing management
- Feeding
- Grazing including maintenance of electric fence
- Marketing

The farm is located about 5 miles south of Dryden, NY on Slaterville Road off of Route 38 near Harford. It is the home of 250 Dorset, 75 Finnsheep, 325 Finn x Dorset, and 100 1/4 East Friesian X 3/4 Dorset ewes.

Registration is required. Send an email message to Brian Magee bhm5@cornell.edu (or call him at 607-844-8367) if you plan to attend.

A great new variety from Cornells' Forage Breeding Program

ReGen is the name of a new variety out of Cornells Forage Breeding program with good yield potential and persistence. The name comes from the fact that some of the parents of this variety had been selected for their ability to regenerate a root system after injury from frost heaving or disease damage to roots. During its development, ReGen was selected for resistance to a set of diseases that are important in New York and it has a strong disease resistance profile. ReGen has high resistance (meaning that 50% or more of the plants are resistant) to Fusarium wilt, Verticillium wilt, and anthracnose (Race 1). In addition, it has resistance (meaning that 31% to 50% of the plants are resistant) to bacterial wilt and Phytophthora root rot. Having been bred in New York, ReGen is well adapted to our growing environments and yields very well compared to other commercially available alfalfa varieties. Table 1 shows the results of a variety evaluation trial planted in Ithaca (Tompkins County), New York in 2004 and harvested for three full production years.

Table 1. Yield of alfalfa varieties seeded in spring 2004 in Ithaca, New York and harvested three times per year for three production years (2005, 2006, and 2007).

	2005	2006	2007	3-Year				
Variety	Total Yield, T/A	% of Check Mean	Total Yield, T/A	% of Check Mean	Total Yield, T/A	% of Check Mean	Total Yield, T/A	% of Check Mean
Genoa	5.53	111	6.22	132	5.31	120	17.01	121
ReGen	**5.42**	**109**	**5.52**	**117**	**5.26**	**119**	**16.20**	**115**
Rebound 5.0	5.41	109	5.69	121	5.23	119	16.33	116
Lightning EXTRA	5.48	110	5.84	124	5.21	118	16.53	117
DKA42-15	5.55	112	5.78	122	5.16	117	16.50	117
6415	5.46	110	5.83	123	5.12	116	16.40	116
WL 348AP	5.38	109	5.42	115	5.08	115	15.92	113
HybriForce-420/ Wet	5.39	109	5.54	117	5.06	115	16.00	114
FSG 408DP	5.46	110	5.65	120	5.04	114	16.18	115
WL 357HQ	5.44	110	5.73	121	5.00	113	16.18	115
LegenDairy 5.0	5.34	108	5.68	120	4.98	113	16.03	114
6420	5.32	107	5.05	107	4.94	112	15.33	109
WL 335HQ	5.20	105	5.25	111	4.79	109	15.23	108
5312 (Check)	5.29	107	5.15	109	4.75	108	15.19	108
Oneida Ultra	5.29	107	5.24	111	4.63	105	15.16	108
NOVA	5.13	103	5.05	107	4.54	103	14.69	104
Oneida VR (Check)	4.97	100	4.95	105	4.45	101	14.38	102
Vernal (Check)	4.62	93	4.06	86	4.03	91	12.69	90
Check Mean	4.96		4.72		4.41		14.09	
Trial Mean[1]	5.05		5.25		4.71		15.01	
LSD (5%)	0.36		0.42		0.33		0.97	

(Sources: Margaret Smith[1], Don Viands[1], Julie Hansen[1], Ev Thomas[2], and Jamie Crawford Department of Plant Breeding and Genetics, Cornell University[1] and

New Corn Herbicides for 2008

Russ Hahn, Dept of Crop & Soil Sciences, Cornell University

NY field corn producers should be aware of several new herbicides they may want to consider for the 2008 growing season and beyond:

Impact from AMVAC is registered for use on both field and sweet corn. Corn growers are likely familiar with another herbicide, Callisto, with the same site-of-action. While Callisto can be used both preemergence and postemergence (POST), Impact is for POST use only from the spike stage of corn up to 45 days prior to harvest. Impact has excellent activity against many annual broadleaf weeds including velvetleaf, pigweed, common ragweed, common lambsquarters, and wild mustard. It also provides significant burndown against annual grasses like giant foxtail and large crabgrass. The normal application rate is 0.75 fl oz/A, and the spray solution must include MSO (methylated seed oil) *or* COC (crop oil concentrate) and a nitrogen fertilizer source such as UAN (urea ammonium nitrate) *or* AMS (ammonium sulfate). For best performance, Impact should be tank mixed with 0.25 to 1 lb ai/A of atrazine. Small grains can be planted 3 months after application while alfalfa, soybeans, and several other crops can be planted after 9 months. The rotational interval for many other crops is 18 months.

Status from BASF is registered for field corn but not sweet corn. Dicamba, one of the active ingredients in Status, is also the active ingredient in Banvel and Clarity. Each of these products has activity against a wide variety of broadleaf weeds. Dicamba is rapidly absorbed by foliage and roots and readily moved throughout plants. It accumulates in growing points causing uncontrolled growth and plant death. A second active ingredient in Status, diflufenzopyr, blocks movement of dicamba away from growing points and increases the activity of the dicamba. Status also includes a safener for dicamba on corn. This safener should minimize concerns about the types of adjuvants and tank-mix partners used with Status. Status can be applied to field corn from 4 to 36 inches tall at rates of 5 to 10 oz/A. Adjuvants must be used with Status. Best results are achieved by combining a NIS (non-ionic

surfactant), MSO, *or* COC with UAN *or* AMS. If at least 1 inch of rainfall is received following application of 5 oz/A or less, alfalfa, small grains, and soybeans can be planted 30 days after the rainfall event. Results from comparisons weve made in NYS suggest that Status may not consistently provide better weed control than Banvel or Clarity. In addition, Status is more costly than Banvel or Clarity and requires the use of spray additives. Unless corn injury is a concern, growers should proceed with caution until additional research is completed with Status.

Halex GT from Syngenta combines residual herbicides with glyphosate in a single product for use in glyphosate-resistant corn. This new product, which is available in bulk only, combines glyphosate for control of emerged weeds with Dual Magnum and Callisto for residual annual grass and broadleaf control. In addition to providing residual activity against a broad spectrum of weeds, this premix provides three different site-of-action (ways of killing weeds) classifications. The label shows that Halex GT contains herbicides from Groups 15 (Dual Magnum), 9 (glyphosate), and 27 (Callisto). With multiple sites-of-action, this product simplifies efforts to prevent development of herbicide-resistant weed populations. The label allows for the addition of atrazine with a fourth site-of-action (Group 5). In fact, Halex GT use guidelines encourage the addition of atrazine if broadleaf weeds are greater than 4 inches tall. Halex GT should be applied at 3.6 to 4 pt/A from corn emergence up to 30 inches in height and should be applied with NIS and AMS. Small grains may be planted after 4 months, and alfalfa and soybeans after 10 months.

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SELECTING A HERD SIRE

By Heather Sweeney

Selecting a herd sire is one of the most important decisions you will make. Whether using natural service or AI, the last three bulls you have used make up 80% of the genetic background in your herd. While it is important to put emphasis on female selection, 80-90% of genetic improvement (or lack there of) comes from the bull. Clearly making bad decisions here has long lasting effects. Allowing the neighbor or sale barn manager to "pick you up" a bull is not a selection strategy for the profit minded beef producer.

Many of us enjoy spending long evenings studying sale catalogs and/or semen catalogs. While the beef industry has made tremendous strides in learning how to evaluate sires, information overload is a true dilemma. For most important decisions there is a process you can use to guide you through.

1. **Develop a job description.** All valuable positions are not developed at random; neither should the one for your bull. Example:

"Twenty five head mature cow herd seeks bull to improve growth of weaned calves. Must be able to pass a breeding soundness exam and effectively perform herd sire duties within a 60 day breeding season. Expected progeny difference and performance information required. Must offer performance traits that complement existing herd genetics. Bulls without documentation of a complete herd health program need not apply".

What's assumed is that you know what you need the bull to do. Describe your herd:

a) Breed type of cows
b) Will he be expected to breed cows and/or heifers?
c) Will he sire future female replacements?
d) How do you market: calves, retained ownership, freezer trade, seedstock?
e) What data do you have on your herd: weaning weight, frame score, hot carcass weight, quality grade, yield grade?
f) What needs to change/stay the same?

2. **Select a reputable breeder.** The first thing a reputable breeder will ask you is what you need the bull to do. They should want to develop a long term relationship with you and if she/he does not ask you what you need, then look for another supplier. Look at their cow herd. If they have cows that range from belt buckle to chin height, that provides some insight into their selection criteria. After they sell you a bull, what other services do they provide: unconditional guarantee? Calf buy back? Assistance in selling calves? Assistance in selling/buying back the bull when finished? Service is what separates the elite

breeders from the bull sellers.

3.**Select EPDs that will move your herd in the desired direction.** Bar none, Expected Progeny Differences (EPDs) are the surest path to genetic progress. If your breeder does not understand EPDs or does not put much emphasis on them, look for another supplier. While too complex an issue to discuss completely (see following article) here, become familiar with EPD percentiles. All EPDs are ranked from 1 to 100. A bull with an EPD in the 1st percentile indicates that only 1% of the sires are higher for that trait; conversely a bull with an EPD in the 90th percentile indicates that 90% of the animals have higher EPDs. For example, if your goal is to maintain milk production of your replacements and increase weaning weight, then you would select a bull with a milk EPD in the 45th to 65th percentile (no change expected) and a weaning weight EPD in the 50th or less percentile (change expected).

4. **Evaluate individual performance.** If the bull has been evaluated either in a central bull test program (e.g. NY Beef Producer's Bull Test) or a breeders own test, compare performance data with EPDs. If a bull has a high ribeye area EPD and his ultrasound measured ribeye area is above the average of the bulls on test, this validates his EPD. Beware however, that due to environmental influences a bull with an above average ribeye area does not negate a below average ribeye area EPD. EPDs are computed to remove the influence of environmental factors, therefore to make genetic change more emphasis should be placed on the EPD than on actual animal performance.

5.**Visual inspection.** Finally after you have selected the most desirable bulls on paper, go to the pens and evaluate temperament, structure and conformation.

Bull selection can be fun, but due to its impact on long term herd performance the decision must not be made lightly. Knowing the strengths and weaknesses of your herd combined with selecting a reputable breeder and using all available data reduces your risk of choosing the wrong bull.

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Farm energy audit can help conserve energy and lower costs

Adapted from an article by DALE HILDEBRANT, For the Minnesota Farm Guide

Although commodity prices are better than they have ever been in many cases, input costs are also rising at a rapid pace. But that doesn't necessarily mean the cost of production has to go up.

With the cost of all forms of energy increasing at a rapid pace, farmers have the potential to lower their cost of production by performing an energy audit on their farm and identifying ways to lower energy use, which translates into lower costs.

During his presentation at Marketplace for Entrepreneurs in Grand Forks, Chad Reisenauer, Basin Electric Power Cooperative's energy conservation coordinator, outlined some areas that should be checked in a farm energy audit. These focus areas range from the farm home to the tractors and irrigator units running in the field.

"Farming is a very energy intensive business, it has been throughout its history," he noted. "But earlier in our history we depended upon animal energy and the energy that came from those crops used to feed those animals. Now farmers are using a lot of electrical energy as well as petroleum in their operations."

Two questions first need to be answered when performing an energy audit, according to Reisenauer. First, you need to know what the costs will be to implement a change that will result in energy savings; and secondly, what is the time frame that will be required to pay for that change.

He suggested that probably any project that has over a three-year period for payback should be given extra consideration, because of the length involved.

With those two factors in mind, Reisenauer listed several areas that are large energy users on some operations and what to look for when doing an energy audit.

Irrigation

Reisenauer calculated the average center pivot irrigation unit costs about $36 annually per acre in direct costs, such as costs of energy to run the system and an additional $12 per acre in repair and maintenance charges.

Many simple repairs and adjustments can lower the amount of energy used by irrigation system. These range from pump impellers being out of adjustment to dry bearings or worn out nozzles. He noted that improperly sized pumps, either too large or too small, can waste energy.

“You can't just go to a neighboring farmer's auction and pick up a pump,” he said. “Everything in an irrigation system needs to be sized for that particular system for the best results.”

He also cautioned that irrigation systems need to have their leaks fixed, since that not only wastes energy, but also interferes with the distribution of water across the field.

Dairy farms

Seventy percent of the energy used on a dairy farm is used in the harvesting of milk, Reisenauer said - 25 percent each for heating water and cooling the milk and 20 percent for running the vacuum pump. And there are ways to decrease energy consumption in each of these areas.

The vacuum pump can be equipped with a variable speed drive that instead of running at 100 percent at all times, varies the pump's speed to match the vacuum demand.

In cooling the milk, many dairies are now using water-cooled plate coolers to initially cool the milk instead of relying on the compressor to do the entire job. This results in saving two ways, first, less energy is needed to cool the milk and the water going into the water heater is preheated by the milk.

Second, a scroll type compressor for milk cooling can be used rather than the traditional reciprocating type compressor and the heat generated by the compressor can be recovered and used to preheat water on its journey to the water heater.

Finally, in regards to dairy farms, Reisenauer indicated many operators are doing a practice called “long day lighting” in which cows are exposed to 16-18 hours of light a day, year round, relying on a combination of natural and supplemental

lighting. Although this may consume slightly more energy for lighting, he indicated most dairy producers are experiencing production gains ranging from 5 to 15 percent more milk, which more than offsets the energy costs.

Heated livestock water fountains

Other livestock producers can benefit as well from an energy audit, especially in the area of heated livestock water tanks. Reisenauer mentioned that 60 to 80 percent of the heat loss in a heated livestock waterer during the winter months comes from missing lids or lids that aren't closed. Additional energy is wasted by not having a tight seal around the foundation of the waterer and by having the water temperature set too high.

"The temperature on the thermostat only needs to be set from 32 to 35 degrees to prevent freezing," he said. "I have heard of some cases where the thermostat was set as high as 50 to 60 degrees, and the heating elements were actually coming on in the summer, because the temperature of the incoming water was probably 55 degrees, which caused the heating elements to kick in."

Lighting

Two areas of lighting need to be addressed here - the outdoor security type yard lights and interior lighting in the farm buildings such as the barn and shop.

Many of the outdoor "all night" yards lights are mercury vapor lamps which produce 32 lumens per watt of power, Reisenauer noted, while high pressure sodium lights emit 95 lumens per watt and metal halide give off 60 lumens per watt.

Going by these figures, the high pressure sodium would be the way to go, but many object to the yellow light emitted by those bulbs, so he suggested that farmers check into the metal halide light as an alternative, which gives off a light similar to what a mercury vapor bulb does.

He also said some farmers and ranchers are going to a half-night light controller, where the light is on for the first portion of the night is then shut off after midnight or 1 a.m., since there is little activity in the yard during those hours.

For interior lighting, Reisenauer suggests phasing out

incandescent bulbs and going with T8 fluorescent bulbs and converting T12 fluorescent fixtures to T8, since the T8 bulbs give off 15 percent more lumens per watt of power, their ballasts are 40 percent more efficient, the bulbs start at temperatures down to zero degrees and the bulbs have a 60 percent longer life than the T12 bulbs.

Grain drying

In order to conserve energy, he suggested that harvest should be delayed as long as possible to allow for natural drying in the field. Keeping the drying floors and columns in a dryer bin clean are also important, since it allows for a better flow of air.

Finally, farmers should continually monitor the moisture level of the crop to guard against over-drying, since drying the crop too much not only requires more energy, but also lessens the weight of the crop being sold, resulting in less crop income.

Motors

Drying installations also use high horsepower electric motors, which are a large user of energy. Simple maintenance like keeping the motor clean, and maintaining the proper belt tension and alignment can increase efficiency. If belt replacement is necessary, use a cogged version for less slippage and use the proper size and type of motor for the application.

If possible, use a variable-speed drive and if a motor burns out, consider replacing the unit instead of having the old one rewound. Rewinding a motor usually lowers the efficiency of the unit, Reisenauer noted. Rewinding an older motor can result in an efficiency of only 80 percent, whereas a new motor can be up to 94 percent efficient.

This is another time, when the cost of the more efficient motor needs to be weighed against the cost of rewinding a motor that is less efficient and determine the length it would take to invest the extra money in a new motor

Fuel storage

Winter blends of diesel fuel have less energy units per

gallon than those blended for warmer temperatures, so make sure you don't carry over a large inventory of winter blend into the spring, when temps are warmer.

The Farm Home

Take a look around the farm home. Consider upgrading the insulation in the structure and seal openings against air infiltration.

Consider other options for heating and cooling. For instance, using a geo-thermal type heat pump for heating has an efficiency rating of 300 percent and an air source heat pump is 200 percent efficient. Both require a large investment to install, and again the owner needs to pencil out the repayment time, Reisenauer said.

Consider changing incandescent light bulbs in the house over to screw-in compact fluorescent bulbs, which will not only use 75 percent less energy, but prolong the time needed to change bulbs, since they last from 6 to 10 times longer than a standard incandescent bulb.

Insert rubber gaskets under the cover plates of wall switches and outlets and if the water heater needs replacement consider switching to a high efficiency model. An insulating blanket can be put around your present water heater as a means of conserving energy, and Reisenauer suggests setting the water heater thermostat at no more than 120 degrees.

Finally, when purchasing new appliances for the home, you should buy only Energy Star appliances, which are designed to save energy.

For more information on an energy audit on your farm, contact : NYSERDA provides energy audits through its Flex Tech Program using pre-qualified consultants. The NYSERDA site for on-line registration is: www.nyserda.org/programs/flextech.asp , click FlexTech online registration and be sure to identify the farm's name (i.e.Smith farm). There is also a link to FlexTech Consultants and their areas of expertise. Mary Sauvie at 518-862-1090; ext. 3229 or e-mail her at mks@nyserda.org. The list of Flex-tech consultants is Northeast Agriculture Technology Corp. (NATC) located in Ithaca. Dick Peterson's contact info at NATC is Telephone: Area Code (607) 725-2741 and e-mail: clkp329@aol.com

Assessing alfalfa stands for Brown Root Rot (BRR)

Brown root rot is a disease of alfalfa caused by the fungus *Phoma sclerotoides.* BRR has been found in stands in NY as well as New England states. The disease is most severe in regions with harsh winters. Many other stresses to alfalfa plants interact with BRR to cause plant death. April through early May is the best time to check for symptoms of BRR. Look for winterkilled plants interspersed with slowly emerging plants in patches scattered across the field. To identify BRR dig out the slowly growing plant and wash off the roots. Look for lesions on the roots and crowns that are light to dark brown often with a dark border. BRR lesions that girdle the tap root or crown result in winter kill. Samples can be sent in to Cornell for absolute confirmation ($40/sample). Call the plant diagnostics clinic for details: 607-255-7850. There is no action that an alfalfa producer can take at this time. There is ongoing research at Cornell and other Universities to solve this issue. Cornell is currently assessing alfalfa varieties adapted to this region in BRR infested soils in order to identify varieties that may perform better then others in the presence of the BRR fungus.

Corn Planter Pre-season maintenance

Bob Nielson, Agronomy Dept., Purdue University Uneven plant–to-plant spacing or germination can reduce yield potential by 7-15 bushels/acre.

Take advantage of spring fever, go over your planter with the proverbial fine-toothed comb. A precursor to this activity is to locate the planter's operations manual and browse through it to refresh yourself on important pre-season maintenance activities.

- Check and replace all worn out parts.
- Ensure that coulters and disc openers are aligned accurately to ensure accurate furrow opening and seed placement.
- On Case™ planters, replace any worn seals and check the trueness of fit of the seed drum to ensure uniform air pressure and accurate seed metering.
- Adjust or replace worn disc openers. Worn openers cut "W"-shaped furrows rather than "V" and may interfere with accurate seed positioning and seed firming. Adjust the shims of the openers so that bottoms of the openers just touch. Replace the openers when it is no longer possible to adjust their closeness.
- Replace worn planter chains or rusty, stiff chain links. Less than smooth operation of planter chains decreases seeding accuracy.
- Inflate tires to their proper air pressure. Under- or over-inflated drive tires influence the accuracy of the planter transmission settings for seed drop.
- Clean seed tubes and monitor sensors. Seed treatment residues interfere with accuracy of monitor sensors. Mouse nests have a bit of influence on uniformity of seed drop through the seed tubes.
- Check the bottom of each seed tube for wear that changes the shape of the tube opening and influences the final trajectory of the seed dropping from the seed tubes.
- For finger-pickup type planters, check the finger-pickup backplates for rust buildup and seed treatment residues. Excessive buildup of either rust or seed treatment residues may cause jerky movement of the finger mechanism. Excessive rust buildup can also scarify or damage the corn

kernels, resulting in decreased seed quality the moment you plant the seed. Also,

- Check for worn down 'dimples' on the backplates. If worn down, more double seed drops will occur.
- Check and adjust the tension on the fingers. Misadjusted finger pressure directly affects the ability of the unit to accurately singulate seed.
- Check the condition of seed conveyor belt. Age and lengthy exposure to seed treatment residues results in brittleness that interferes with the smooth travel of the belt. Remember that perfect singulation by the seed metering unit may be offset by interference with the seeds' travel to the furrow.
- Finally, CALIBRATE THE PLANTER!

Planter calibration

All the maintenance in the world is for naught if you head to the field without calibrating the planter. Difference among seed lots can influence planter calibration. Obviously, using a single planter for both corn and soybean planting influences calibration. Time spent calibrating a planter is time well spent.

- For pneumatic planters (air or vacuum), calculate the seed weight for each seed lot you will be seeding. Do this by simply dividing the number of seeds per bag by the weight of the bag. Both values are listed either on the seed tag or on the bag itself. For example, an 80,000 seed bag divided by 50 lbs equals 1600 seeds per lb. From the operations manual, identify the correct pressure (air or vacuum) for the calculated seed weight. Finally, identify the correct seed disc (or drum) for the calculated seed weight. Do this for each seed lot you have purchased and record the results somewhere that will be easily accessible during planting.
- From the planter's operations manual, identify the correct transmission setting for your desired seeding rate.
- Calibrate actual seed drop with the planter transmission settings and the planter monitor readouts. Do the calibration at normal planting speeds and seeding rates under as close to field conditions as possible (not simply down the farm lane!). One trick to simplify locating seed in the furrow without a lot of digging is to temporarily tie up the closing wheels on one or more units during the calibration operation.

Fuel saving tips: (Source: Mike Mahanna; ISU Extension)

- Ask your self if the tillage you plan is actually required
- Follow your maintenance schedule on your tractors owners manual. One case study showed that regularly changing fuel and air filters saved 4% on fuel for the same power
- Proper weight distribution (ballasting) in front and back of the tractor when pulling implements enables the tractor to efficiently transfer the power to the drawbar and avoids wasting energy. Use your tractor manual for suggested guidelines.
- Tire pressure should be adjusted for the load the individual tire is carrying. Over inflation contributes to wheel slippage and fuel use.
- For lighter draw bar loads like moving equipment, raking hay, spraying, lighter tillage (aerway) shifting to a higher gear and throttling down will reduce fuel use. If using a PTO engine speed will have to be maintained at the rated PTO speed.

Table 1. Gross tractor weight, lb/Hp

Speed, mi/hr	<4.5	5	>5.5
Tractor type			
2WD & MFD (lb/Hp)	130	120	110
4WD (lb/Hp)	110	100	90

Table 2. Front-to-rear axle ratio as percentage of total weight

Tractor type	Towed/drawbar %Front/%Rear	Semi-mounted %Front/%Rear	Fully-mounted %Front/%Rear
2WD	25/75	30/70	35/65
MFD	35/65	35/65	40/60
4WD	55/45	55/45	60/40

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Cornell University's Beef Management website

Farmers who raise beef or are interested in learning more about beef production should familiarize themselves with Cornell's Beef Management site at http://www.ansci.cornell.edu/beef/.

Included on the site is a newsletter that appears 5-6 times per year and includes announcements of upcoming events and programs, summaries of journal articles, and to-do lists for each period of the year. Following is from the current issue of the newsletter:

TO-DO: MAY/JUNE

a) Vaccinating cows for IBR, BVD, BRSV, PI3, and Leptospirosis is an important part of an effective herd health program. Consult with your veterinarian about using modified live vaccines on open cows prior to breeding your cowherd.

b) Get ready for breeding season:

- q If you use A.I., order semen and check your equipment.
- q Be sure breeding corral is in working order.
- q If breeding naturally, make sure you have enough bulls: 10-15 cows per yearling bull; 20-25 cows per 2-year old bull; 30-35 cows per mature bull.
- q Have phosphorous source in form of free-choice mineral mix; phosphorous is important for maximum fertility.
- q Yearling British heifers should weigh a minimum of 700 lbs. and continental heifers a minimum of 750 lbs. before being bred.
- q If lactating cows are thin and not cycling, feed more energy.
- q Vaccinate open cows for IBR, BVD, PI3, BRSV, Leptospirosis, and Haemophilus using modified live vaccines. Consult your veterinarian for additional health information.

c) Breed heifers one heat period before the cows. This provides extra time for heifers to recover to calve with the cowherd the following year

d) Take advantage of early summer grass. Turn cows in when grass is 4-6 inches tall, graze intensely for 7 days and then

rotate to another field. Pasture should be rested 25-40 days before grazing again.
e) Is hay making equipment ready? For highest quality, first cutting should be started by end of May to early June, depending on species and location.
f) After first cutting or grazing, consider fertilizing with nitrogen to maximize aftermath growth.
g) If you vaccinate for pinkeye, do so six weeks prior to fly season. In other words, it's probably too late to get effective pinkeye control through vaccination.
h) Fly control methods include sprays, backrubbers, insecticidal ear tags, and dust bags. Feed through fly control is not recommended. Insecticides that kill fly larvae also kill beneficial insects such as dung beetles that are necessary for natural control and manure decomposition.
i) Continue to monitor body condition of first and second calf heifers. If they drop below 4.5, they should receive supplemental nutrition.
j) The breeding season should last no more than 60 days. Make plans for keeping bull separate before and after the 60 day breeding season.

"Ag Questions Answered" Series at CCE Oneida County

Spring is finally here and those of you who might have joined us for our series of classes on *computer skills*, *record-keeping*, *direct marketing* and *managing for success* have more pressing outdoor work in mind, the successful "Ag Questions Answered" series here at CCE is going on hiatus for the busy season.

Thanks to those of you who joined, and we look forward to doing it again in the fall. If you have any comments or questions about the series, or any other farm business management programming you'd like to see at CCE Oneida County, don't hesitate to contact Jim Manning (ext 129; e-mail jpm277@cornell.edu) or Bonnie Collins (ext. 104; e-mail bsc33@cornell.edu) here at the Extension office ph. 736-3394. Also, visit us on the internet for frequently updated information at www.cce.cornell.edu/oneida.

Women in Farming

Come join us the second Monday of the month at Oneida County Cooperative Extension, 121 Second Street, Oriskany, 10am- 12pm, (Jan-June & Sept-Nov).

Group Mission:
To come together in support and knowledge to improve our farm families and business.

Any female farmers from any of our sister counties is welcome to attend. We have discussion the first hour and a presentation the second hour.

On April 21, 2008 a presentation from the HEALTHY LIVING PARTNERSHIP PROGRAM Oneida, Herkimer, and Madison County was made. This program is a grant driven program aimed at the un-insured and under insured and if eligible services are **free**.

Dotty Williams Oncology Health Coordinator, **Kathy Russo** Outreach Recruitment Coordinator Health Living partnership and **Krista Drake** Public Health Educator Oneida County Health department discussed the subject matter of Breast, Cervical and colorectal cancer screening. Plus they discussed the program eligibility.

To learn more about the HEALTHY LIVING PARTNERSHIP PROGRAM call 315.624.4805, and any questions about the female farmers discussion group please call 315.736.3394 x104.

7 ways to control feed cost

Audiences at the 2008 Annual Dairy Calf and Heifer Conference in Rochester, Minn., were very interested in getting a handle on spiraling feed prices. Dairy consultant Greg Bethard, G&R Consulting, Inc., Wytheville, Va., offered these tips:

- Minimize shrinkage and storage waste.
- Avoid weigh-backs and wasted feed at the bunk.
- Avoid overfeeding protein, minerals and vitamins.
- Procure forages that result in an inexpensive ration. Focus on total ration cost more than individual component cost.
- Minimize heifer-maintenance cost.
- Purchase ingredients that result in the cheapest ration while providing needed nutrients.

Consider limit-feeding when appropriate.

FACTORS AFFECTING MEAT TENDERNESS OF FORAGE-FINISHED CATTLE

The objective of this Univ. of Hawaii study was to evaluate meat tenderness of forage-finished cattle and determine what factors affect their tenderness. Ribeye steak samples were obtained from 191 forage-finished cattle at two local slaughter facilities. Tenderness was measured by shear force. Carcass wt. ranged from 353 to 939 lb, with a mean value of 602 lb. Intramuscular fat ranged from 0.19% to 14.11%, with a mean value of 4.49%. Shear force ranged from 5.31 lb to 20.75 lb, with a mean value of 11.49 lb.

The shear force value of heifers was significantly higher ($P<0.05$) than that of steers (12.17 vs. 10.94 lb). Shear force of the age group between 24-36 mos. (10.96 lb) was lower ($P<0.05$) than that of the age group over 36 mos. (12.15 lb) or, interestingly, the age group below 24 moss. (11.53 lb). Shear force of Hereford cattle (13.76 lb) was higher ($P<0.05$) than that of Angus (11.44 lb), Bos Taurus crosses (11.16 lb), and other breeds (10.83 lb). The correlation of shear force value with intramuscular fat was only 0.025, indicating that intramuscular fat is not a good indicator of meat tenderness for forage-finished beef. The authors concluded that meat tenderness of forage-finished cattle can be improved by proper selection of breed types and slaughter age (Kim et al. 2007. J. Anim. Sci. 85 (Suppl. 1) Abstract W94).

BEEF CATTLE COMMENTS is a newsletter written by Mike Bake, Beef Specialist with Cornell University. It is available online at http://www.ansci.cornell.edu/beef/.

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CONSUMER ACCEPTABILITY OF GRASS-FED STEAKS

Pennsylvania State Univ. researchers used 30 grass-fed cattle to evaluate the relationship of performance and carcass traits to consumer acceptability of cooked steaks. All cattle were wintered for a targeted weight gain of 1.5 lb/day for 156 days and then rotationally grazed on cool-season grass paddocks. Cattle were harvested at a constant age of 532 days in harvest groups ranging from 124 to 187 days of grazing time. Carcass quality grade ranged from low Select to low Choice. Following is a summary of results:

Growth and carcass traits were not related to panelist evaluations of tenderness, juiciness, flavor, or overall desirability of steaks.

The relationship of marbling score and consumer evaluation of juiciness was not significant.

Taste panel scores for grass-fed steaks were moderate for overall acceptability (4.6 out of 9), flavor (5.1 out of 9), and juiciness (3.1 out of 7), while scoring them slightly tough (4.4 out of 9).

The authors noted that there was a considerable amount of variation in taste panel scores for tenderness, juiciness, flavor, and overall acceptability, indicating that post-harvest interventions may be more effective in increasing the consistency of grass-fed beef compared to production and carcass traits (Steinberg et al. 2007. J. Anim. Sci. 85 (Suppl. 1). Abstract M281).

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People in Agriculture

By Bonnie Collins

"Managing people is harder and more high-pressure today than ever before. There is no time for down time, waste or inefficiency. You have to do more with less. And employees have become high maintenance"(Tulgan, 2007). They look to you –their immediate boss, their employer- to receive what they need and want at work.

How do you handle this huge management challenge? How do you handle the issues on immigration, conflict management and leadership?

Many on these issues will be addressed in the coming series "*People in Agriculture"* including:

Immigration reform and its Impact on Agriculture

Orienting and Training from the Ground Up

Conflict Management Skills
Job Design in Agriculture
Leadership Styles

Immigration reform and its Impact on Agriculture

One third of New York's milk is produced on farms, with immigrant labor and the majority of fruit and vegetable growers employ Hispanic workers. This work force is a viable part of the farm industry. The workers return year after year, usually to the same farms. They support themselves and their family of origin in the short time they are here.

With the increase of border inspections and immigration enforcement farms, will face labor shortage that can and have resulted in economic losses. The concern becomes how to continue the relationship with these workers and maintain the prosperity and profitability of our farmers.

Some of the items in discussion in Washington include:

- The Ag JOBS bill- a program that provide a guest worker a path to citizenship for dairy employees
- Secure America with Verification and Enforcement (The Save

Act HR4088) asking for increased border patrol, add more and better fencing, utilize new border surveillance technology, and strengthen the employment verification program

- Emergency Agriculture Relief Act (EARA) looking to adopt H-2A reforms similar to Ag JOBS, freeze current H-2A wage rates for four years, and would include Ag JOBS Title 1
- Changes to the Social Security "no-match" rules- by offering a reduction in time and fines if resolution can not to made in 93 days following receipt of letters

As we wait for Congress and the Senate to address the immigration dilemma on how to stop the continuing illegal immigration and what we do with the 11.5 million unauthorized immigrants already here **what can you do** as employers?

- Open lines of communication with law enforcement
- Consider wages and benefits as labor market tightens (what will Ag jobs look like)
- Open lines of communication with immigrant employees (speak their language, learn their culture)
- Emergency staffing plans needed (ID cards with farm information determine the need)
- Need for legal council needed (participate in programs offered by your local extension office)

To learn more about this issue and others facing New York farms, visit New York Farms Bureaus web site at http://www.nyfb.org/priorities/LaborPriority2008.htm

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Calf Corner

Set your calf-raising goals

The goal of your calf-raising operation should be to produce a healthy calf that by day 60 has doubled its birthweight, is 14 to 15 percent taller (4 to 5 inches) than at birth, and is eating 3 to 6 pounds of starter ration each day, suggests Tom Earleywine, director of nutritional services of Land O'Lakes Purina Feed.

When should you cull heifers?

Potential culling candidates at the newborn stage include twins and those with persistently infective diseases such as bovine viral diarrhea, suggests Greg Bethard, of G&R Consulting, Inc., in Wytheville, Va. At weaning, consider culling those that have had significant respiratory problems and calves with serious conformation issues. Finally, heifers that have not met your breeding criteria by 15 or 16 months of age should be evaluated. Those not bred by 20 months of age should really be culled, he says. "And remember, it's much better from a financial standpoint to cull earlier rather than later."

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Natural gas mining

CCE recently had a workshop on natural gas mining to provide an understanding of what is involved in the exploration and mining process and the complexity of the lease agreement.

First geologists have studied and named formations (layers) of rock down below the soil surface. Some of these formations have been studied further and may have significant pools of natural gas. One formation: the Trenton Black river formation can be found in parts of our county with wells in Camden, north of Rome and the southern part of our county. The Marcellus formation has also been identified as a gas rich formation in a number of States to our south, the southern Tier in NY fingering up into our area.

Landowners as close as the town of Lebanon in Madison county have been approached by land men who represent gas companies. The motivation of a land man is to get landowners within specific regions to sign leases with the company they represent. Their major qualification for the job is their ability to obtain singed leases at the least possible cost. Natural gas and oil are finite natural resources that once sold are gone for ever so take time to consider before you sign a lease. Because the land men need to get signed leases for specific areas they will use a number of tactics to get you to sign their lease. **Remember that you don't have to sign their lease, in fact it is better that you develop your own lease with the help of a lawyer that has experience in natural gas/oil leases.**

- The first recommendation of the speakers at the workshop was for the landowner to write down why they own the land and their goals for the property. This can be used in developing the portion of the lease where the landowner identifies the sites which they will allow drilling, where they want the roadway to be, the size of the roadway, the size of the well site (within reason ie 2-4 acres), placement of the well, maintenance of the site, reclamation of the sites, roadway etc. Pipeline construction is a separate negotiation.
- The second is to put a short term limit on the lease (1-3yrs) with renegotiation at the end of that period giving the gas company the right of first refusal…but no addendums or clauses that give the gas company any rights beyond the term of the lease.
- The third is to limit the gas company to a specific target ie the gas rights for the Trenton Black river or the Marcellus formation only. This prevents the company from taking other resources like your gravel pit. Identifying this specific target also avoids problems if you want to take a loan or sell your house and property…..Banks are less likely to have an issue with a lease agreement that gives a company the gas rights of your property to a specific formation. They will have a big problem if you give up your surface rights. Know the depth to which they intend to drill. Be specific about the use of resources like timber, gravel, water, electricity, gas and oil etc. Consider dividing up parcels into separate units, if it makes sense, for

separate lease agreements so the entire property isn't encumbered in the lease.

- Do your own title search. They can use lawyers that charge high rates for this service and it will come from your portion of the revenue.
- They might offer you a high payment rate per acre in the lease. Remember that the real money is from royalties paid for the volume of gas that is extracted. That doesn't mean that you should negotiate a good price for this part of the lease. It is best to research the most recent rates paid for these rights.
- The royalty clause is the most important clause:
    - 3/8th (37.5%); 1/8th was the lowest rate landowners would receive by default. You can do a better job with negotitation. Ask a lawyer to explain the difference between override and royalty and secured vs. unsecured. Also ask how the royalty is determined (what market value is used).
    - Definition of proceeds (always gross value, never net proceeds).
    - Determine the accounting method used and audit for gas/oil proceeds
    - Sale without removal of gas
    - No insider dealing or self dealing, indirect or direct by lessee or well owner
    - Lease limited to a specific formation or horizon
    - Termination date of the lease
- Dispute: In the case of a dispute you will want the venue to be the state of the location of the well, in a court of law, in the juristiction where the property is located by litigation where legal fees are covered by the loser; no arbitration. This gives all of the advantages to the landowner.
- Ask a lawyer with experience in this field about a pugh clause
- If you receive a returned receipt letter from a gas company contact a lawyer with experience in gas/oil leases immediately. There may be a very short period to respond.
- If you have questions you can contact any one of the speakers from the workshop:
    - Asher Terwilliger, President of Farm Bureau in Chemung Co. info@cc-fb.org
    - Chris Denton, Lawyer, 607-734-0661
    - Matt Brower, NYS Ag & Mkts, Ag. Protection Division 518-457-2713
    - John Wagner, Regional representative, New York State Farm Bureau,

- Weblinks for more information:
    - http://www.nyfb.org/FactSheets/GasAndOilLeases.pdf
    - CCE

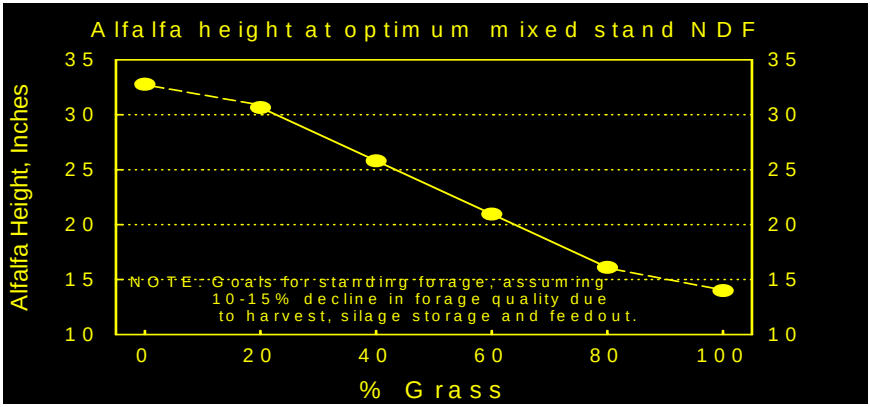
Timing of First Hay Harvest

Question: On average how much of the total tonnage of hay you harvest each year comes off in the first harvest? If you said 50% then you were probably correct. This makes the timing of your first cut so critical. Did you know that Cooperative Extension staff take samples from 3 local hay fields starting the last week of April until the first week of June. We take samples each Monday and send them for analysis at DairyOne. They have the NIR analysis back to us by email by Wednesday and we send the results immediately to our email list of 90 farmers and ag service people. We report the location, estimate of percent legume, slope aspect, altitude, NDF, CP and NEL for each of the sites each week. We also post the same information on our website at http:// counties.cce.cornell.edu/oneida/. If you would like to receive this information by email give me a call at 736-3394 ext 120 and I will put you on our email list or you can hear the latest information on a recorded voicemail message at 736-3394 ext 401.

Harvesting high quality hay can help reduce your feed purchases and we hope this information will help alert you to the general trends in alfalfa and grass growth and development. Unfortunately this information isn't localized enough to identify specifically when your fields are nearing optimal quality. It can help you to know when to start checking your own fields.

A quick method that can be used in predominantly grass stands to judge timing for harvest is to split your grass stems with your pocket knife and find where the inflorescence is in the stem. Start this the first week in May and follow the progress of the inflorescence up the stem planning harvest near the boot stage: just before the inflorescence comes out of the stem.

For the few of you that have clear stands of alfalfa mow fields when alfalfa reaches 28" height. For the rest of us that have mixed swards of alfalfa and grass you can use the chart below for a good estimate of when to hit each field on your farm.



There are 2 characteristics to measure: alfalfa height and your estimate of the percentage of grass within the stand. Measuring the alfalfa height is easy. Estimating the percentage of grass isn't as easy. If you are like me or for that matter most people, we over estimate the percentage of alfalfa.

Soybeans

With the price of soybean meal at $390/ton or more some local dairy producers may be considering growing soybeans for the first time. Below are a few things to consider:

- Check seeds/lb on tag and calibrate planter accordingly
- Recent results from Cornell trials have shown that growers can roll back planting rates without compromising yield: consider planting 30" row beans at 160,000/ac and 15" or less down to 180,000 seed/ac
- Double inoculate beans: full rate of liquid with full rate of peat innoculum applied to seed just before planting
- Don't plant until soil temperatures are 60F
- Plant at 1-1.5" depth
- Don't over till soil to avoid crust development and population reduction
- If you are going to use cruiser treated seed, consider splitting a field to compare yield with and without cruiser treatment
- Mark your calendar at planting and be prepared to apply glyphosate between 3-4 weeks after planting. Remember to adjust rates of glyphosate based on label recommendations for the product you purchase. Apply in 8-10 gals of water per acre. Make sure you add spray grade ammonium sulfate.
- If you haven't already bought seed local growers have had good results with 1.6, 1.9 maturity groups at many locations in the county and 2.1 maturity in areas with longer season. There hasn't been great differences in yields between 1.9s and 2.1s.

We meet with area farmers once each month in one of their fields to scout field crops, determine the stage of crop development, insect pests, diseases and weeds. NYSDEC credits. If you are interested in joining us contact me at 736-3394 ext 120.

Should wheat producers consider applying fungicides to their wheat in 2008

With the high price being paid for wheat some growers may be questioning if they should consider applying fungicides in a prophylactic application to their crops. Gary Bergstrom and Bill Cox, Cornell University conducted 10 years of studies on intensive wheat production and found on average 3-4 bu/ac gain from prophylactic fungicide treatments. Gary suggested that growers should scout wheat fields during the third week in May look for disease pressure, consider weather conditions and forecasts and make an informed decision to spray or not. He would remind you that the strobilurins are surface treatments and the triazoles are systemics and that each only provides a limited time of protection. He would also note that the only product labeled for late initiation of flowering that might provide some protection from toxin production is Tilt. Below is a chart with ratings of labeled fungicides on the most common diseases of wheat in NY.

Product		**Fungicide(s)**	**Amount /A (fl. oz)**	**Powdery mildew**	**Stagonospora leaf/glume**	**Septoria leaf blotch**	**Leaf rust**	**Fusarium head blight**	**Latest rec. timing (wheat stage)**
Strobilurin	**Headline 2.09 EC**	**Pyraclostrobin 23.6%**	**6.0 to 9.0**	G[1]	VG	VG	E	NR	Boot
	Quadris 2.08 SC	**Azoxystrobin 22.9%**	**6.2 to 10.8**	F(G)[2]	VG	VG	E	NR	Boot
Triazole	**PropiMax 3.6 EC**	**Propiconazole 41.8%**	**4.0**	VG	VG	VG	VG	NR	Flag leaf collar visible
	Tilt 3.6 EC	**Propiconazole 41.8%**	**4.0**	VG	VG	VG	VG	F	50% flowering
Premix	**Quilt 200 SC**	**Azoxystrobin 7.0% Propiconazole 11.7%**	**14.0**	VG	VG	VG	E	NR	Beginning of head emergence

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