Ag Focus

Economics of Intensive Wheat Management Practices

By: John Hanchar

In the April 2011 issue of Ag-Focus, in an article titled "Advanced Wheat Management Seminar: Pushing NY Wheat Yields," Mike Stanyard described intensive wheat management practices including: rates, timings, methods, and locations of N applications; foliar fungicide applications; and tissue sampling. Presenters covered these and other topics during the February 16, 2011, Advanced Wheat Management Seminar in Batavia. For that program, we developed economic analyses to examine the benefits and costs associated with intensive wheat management practices.

Expected Wheat Price ($ / bushel)	Expected Wheat Yield Increase (additional bushels/acre)		
	10	20	30
	-- $ per acre per year -		
5.00	- 52.55	- 8.15	36.25
6.00	- 42.55	11.85	66.25
7.00	- 32.55	31.85	96.25
8.00	- 22.55	51.85	126.25

Table 1: *Expected Change in Annual Profit by Expected Wheat Yield Increase by Expected Wheat Price.*

We based analyses on Donn Branton's experiences and results for the 2010 wheat crop, and estimated the expected change in profit associated with the intensive wheat management system practiced by Donn versus a program of standard practices. The intensive wheat management system can be described as an information intensive system utilizing tissue sampling, additional soil testing, scouting and crop consulting services to make decisions regarding nutrient, pesticides, and other inputs in a controlled traffic (tramline) system.

Summary of Results

- Intensive wheat management has the potential to increase the value of production, and income, but additional costs including cash and non cash costs can be relatively large
- Expected change in profit is sensitive to the expected increases in wheat yield and price
- Of the 12 expected wheat yield increase, expected wheat price combinations examined, 7 yielded expected increases in profit
- Breakeven, expected increase in wheat yield ranged from about 22 bu./ac. for $5.00 per bushel wheat to 13 bu./ac. for $8.00 per bushel wheat

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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.

The Use of a Partial Budget

One factor that producers use to evaluate possible changes in practices is the expected change in profit. Profit equals the total value of production and income minus the costs of resources and inputs used in production. Expected change in profit equals the expected change in total value of production minus the expected change in costs. Analysts construct a partial budget to estimate the expected change in profit associated with a proposed change in the farm business, for example, adoption of intensive wheat management practices alone or as part of a system.

Results

The results for the *Expected changes in profit by Expected yield increases by Expected wheat prices* analysis range from negative $52.55/acre to positive $126.25/acre (Table 1). To illustrate some of the details of the analyses, the partial budget for an expected increase in yield of 30 bu./acre, and $8/bushel wheat price follows. Based upon the analyses, breakeven wheat yield increases are about 22, 18, 15, & 13 additional bushels per acre for expected wheat prices of 5, 6, 7, & 8 dollars per bushel, respectively.

Assumptions	
• Expected wheat price ($/bushel)	$8.00
• Expected change in wheat yield (bushels/acre)	$30.00
• Straw quantity and quality unchanged	
• Average future year before tax analysis	
• Analysis is annual per acre	
Expected Changes is Total Value of Production (TVP)	
Crops sold due to increased wheat yield	$240.00
Total Expected Changes is TVP (A)	$240.00
Expected Changes in Costs	
Fertilizers, nitrogen	$20.82
Spray & other crop expense, fungicides, insecticides	$49.36
Spray & other crop expense, 3 additional applications	$12.20
Spray & other crop expense, crop consulting	$2.00
Spray & other crop expense, tissue samples	$0.86
Spray & other crop expense, soil samples	$1.29
Machinery & labor expense, combining	$2.59
Machinery & labor expense, grain hauling	$3.60
Machinery & labor expense, grain drying	$13.20
Depreciation & interest as an opportunity cost, - nozzles and tram line controllers	$5.33
Value of labor and management, operator	$2.50
Total Expected Changes in Costs (B)	$113.75
Expected Change in Profit (A minus B)	**$126.25**

Winter Wheat Harvest & Storage: Year at a Glance

By: Mike Stanyard

Overall the winter wheat across NWNY has looked good despite a very soggy April and May. Those that applied their nitrogen early during the brief windows definitely benefited. Unfortunately, there were some areas so wet that they did not get nitrogen or herbicide on the ground. I know more producers than usual applied fungicides early and at flag leaf for foliar diseases such as powdery mildew. Cereal leaf beetle and common armyworm populations were present but at non-economic levels. Most of our wheat pollinated over the first week of June and the weather was mostly dry and favorable. I saw quite a few tire tracks in fields at flowering which means fungicides were being applied mainly for Fusarium head scab.

Harvest Preparation

Know your grain moisture and have the combine prepared to go when it's time to pull the trigger. Weather and field conditions do not always cooperate during harvest. Many producers will start harvesting at 20% and dry it down to 13%. Producers who don't have dryers and rely on field drying, run the greater risk of reduced grain quality. The first harvested wheat will have the best quality. Vomitoxin from Fusarium head scab is also a concern each season. Look for pink coloration and shrunken kernels in the heads. If these conditions are present, set the combine fans to high to try and blow these light kernels back onto the field.

Grain Bin Preparation

Storage facilities should be inspected thoroughly prior to grain fill. Look for openings, leaky vents, fallen supports, and signs of rodents. Bird nests are always a treat to find in the auger or vents. Stored grain insects survive in old grain so complete cleaning is the first line of defense. Clean up all remaining grain on the floor of the bin. Take a long-handled broom and remove any grain stuck to the walls, around the door, supports, and in the fan opening. If there are a lot of fines remaining on the floor, clean up with a shop vacuum. The same is true for grain handling equipment such as augers and drying bins.

We are very limited when it comes to empty bin insecticide treatments. TEMPO® SC ULTRA and STORCIDE™ II (see label for application restrictions) are both labeled. Malathion is also labeled but you do not want to use this when storing wheat (residue in flour). Indian meal moth also has developed resistance to this product. Diatomaceous earth (Dryacide) is a non-insecticidal silica sand that can be applied as a dust in the bin and below the floor.

Spray the floor and walls inside the bin to the point of runoff. Spray some through the fan under the false floor of drying bins. Spray around the outside base of the bin and eliminate any weeds and old grain debris within 30 feet of the bin. Insects and rodents can survive on weed seeds too!

Yield Prediction

At the Cornell Small Grains Field Day in April, Bill Cox reviewed past weather data in April and May to make a yield prediction for NY this year. In years when we have above average rainfall in these two months, state yield averages are low. we had over 11 inches in some areas! Bill's prediction…55 bushel state average. Let's hope it's higher!!!

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1998 Autocar ACL64, Det. 12.7L 470 h.p., 8LL trans., eng. brake, Volvo T-Ride susp., 4.87 ratio, 336" w.b., tri axle, 20,000# F/A, 46,000# R/A, 189,043 miles, boom truck w/25' deck, D.F., **no rust truck, very clean,** stk# 3619, **$36,900.**

(3) 2001 Peterbilt 357, Cums. ISM 335 h.p., 8LL trans., Chalmers susp., 250" w.b., 22.5 tires, T/A, 20,000# F/A, 44,000# R/A, 145,062 miles, low mile trucks, mixers to be removed, 21' of frame behind cab, stk# 3583/3584/3585, **$28,900.**

1999 Peterbilt 357, CAT C12 425 h.p., 8LL trans., eng. brake, air ride susp., 178" w.b., 22.5 on alum., T/A, 18,000# F/A, 44,000# R/A, 520,601 miles, nice, clean heavy spec day cab, new recap tires, stk# 3628, **$27,900.**

2006 Freightliner CL12064ST Columbia 120, Det. 14L 515 h.p., 15 spd., eng. brake, air ride susp., 4.10 ratio, 193" w.b., 24.5 on pol. alum., T/A, 14,000# F/A, 46,000# R/A, 354k miles, heavy spec, stk# 3571, **$49,500.**

2005 Volvo VNL42T300, Volvo VED12 465 h.p., 18 spd., eng. brake, air ride susp., 4.11 ratio, 220" w.b., 22.5 on alum., T/A, 14,600# F/A, 46,000# R/A, 476,163 miles, very clean heavy, stk# 3666, **$36,900.**

2007 Mack Vision CXN613, Mack 460 h.p., 18 spd., eng. brake, air ride susp., 191" w.b., 22.5 on alum., T/A, 14,000# F/A, 46,000# R/A, 416,692 miles, very clean day cab, ready to go, stk# 3667, **$47,900.**

(2) 2006 Mack Vision CX613, Mack E7 427 h.p., 10 spd., eng. brake, air ride susp., 177" w.b., 22.5 on alum., T/A, 12,000# F/A, 44,000# R/A, 530,688 miles, heavy spec day cabs w/wetlines, stk# 3617/3618, **$37,000.**

2002 Kenworth T800, Cums. ISM 350 h.p., 8LL trans., 17' steel dump body, 4.88 ratio, 266" w.b., 22.5 tires, tri axle, 18,000# F/A, 46,000# R/A, 332,156 miles, very clean, stk# 3609, **$34,900.**

1997 Kenworth T800, Cums. M11 400 h.p., 8LL trans., eng. brake, 20' alum. rust free dump body, Chalmers susp., 255" w.b., alum./steel whls., 5 axles, 20,000# F/A, 46,000# R/A, 536,081 miles, clean, stk# 3629, **$33,900.**

2005 Western Star 4900, CAT C15 475 h.p., 18 spd., eng. brake, Haulmaax susp., 244" w.b., 36" flat top slpr., 22.5 on alum., T/A, 14,600# F/A, 46,000# R/A, 545,068 miles, stk# 3636, **$52,500.**

1999 Western Star 4964FX, CAT 3406E 475 h.p., 18 spd., eng. brake, Hend. susp., 258" w.b., 24.5 on alum./steel, T/A, 12,000# F/A, 45,000# R/A, 443,813 miles, southern truck, stk# 3626, **$52,500. Also: 1999 Peterbilt & 1994 Western Star Oil Field Winch Trucks!**

1979 Kenworth C500, Cums. 855 Big Cam 400 h.p., 5&4 spd., eng. brake, rubber block susp., 269" w.b., T/A, 20,000# F/A, 46,000# R/A, HD flatbed w/Tulsa 35 ton winch & 18 ½' deck, 5th whl. folds down & hides in deck, stk# 3632.

2007 GMC W4500, Isuzu 190 h.p. diesel, auto. trans., S/A, 12,134 miles, Victory Mark II sweeper powered by CAT C2.2, stk# 3566, **$48,900.**

2004 Freightliner FL80 Std. Cab, CAT 3126 246 h.p., 9 spd., 30'x96" body, spring susp., all steel whls., T/A, 12,000# F/A, 40,000# R/A, swing door, 348,530 miles, good runner, stk# 3554, **$22,500.**

1999 Kenworth T800 Daycab, CAT 430 h.p., eng. brake, Eaton Fuller 18 spd., full lock, air ride, 20,000# F/A, 46,000# R/A, 199" w.b., wet kit...coming soon.

2006 Peterbilt 357, Cums. 330 h.p., Allison auto., 20,000# F/A, 46,000# R/A, 250" w.b., alum. wheels, 10'6" cu. yd. mixer, steerable booster axle, remote controls. **Also: 2005 Peterbilt coming soon! In Stock: Int'l, Kenworth, Volvo & Peterbilt Mixers or C&C.**

2005 Caterpillar CB534D, 67" tandem smooth drum, canopy, vibratory, water system, 1,800 hrs., **$69,950. Many other available! Padfoot, single drum, pneumatic, CAT/Bomag/Hamm/IR/Sakai, many to choose!**

2004 Freightliner FL70, C7 CAT 190 h.p., 6 spd., 10', spring susp., steel comp., 22.5 tires on all steel, S/A, 12,000# F/A, 21,000# R/A, 60,358 miles, good runner, low miles, **$28,500.**

1998 Mack CL713, Mack E7 400 h.p., Fuller 8LL trans., air lift 3rd, 4th & 5th axles, dbl. frame, 20,000# F/A, 44,000# R/A, Camelback susp., 21' alum. box.

(3) 2006 Int'l 9900i Slpr., Cums. 565 h.p., Jake Brake, 18 spd., 14,000# F/A, 46,000# R/A, lockers, 590k - 650k miles, **$44,000.**

2007 Int'l 9400i, Cums. ISX 450 h.p., eng. brake, 12 spd. auto. trans., air ride susp., 46,000# R/A, 320k miles, **$53,650.**

1999 Int'l 5000 Pay Star, Cums., Jake Brake, 8LL trans., air lift, 18,000# F/A, 46,000# R/A, vac. pump, rear discharge. **Many Other Freightliner/Volvo/Int'l Alum. & Steel Tank Vac. Trucks In Stock & More Coming!**

(5) 2004 Freightliner Columbia Day Cabs, CAT 430 h.p., Jake Brake, 10 spd. man., 46,000# R/A, 475k-520k miles, **$33,500 each.**

2005 John Deere 120C, cab heat & A/C, mech. thumb, good U/C, 4,050 hours. **Also Available: 375L, 325L, 322CL, 312 And Many More!**

On a Farm Near You...

Managing Flies and External Parasite Pests Affecting Health of Livestock

By: Keith Waldron, NYSIPM & Nancy Glazier

A variety of insect and mite pests affect the dairy industry in the Northeast. House flies, stable flies, face flies, horn flies, horse flies, deer flies, cattle grubs, lice, and mange mites all are common and significant pests of cattle. Some target livestock on pastures, some in the barns.

Insect and mite pest activity results in lowered milk production levels and reduced feed conversion efficiency. It exposes cattle to pathogenic microorganisms and causes blood loss and hide damage. It can lead to public health–public nuisance concerns. Moreover, insect and mite pest pressure can add to stresses on young replacement animals, delaying their entry into production and adversely affecting lifelong production performance. As herd sizes increase on modern farms, pest pressures often are aggravated by large quantities of animal waste that must be handled and by crowded conditions that promote the spread of external parasites.

In the past, management of cattle pests often has relied on insecticide use as a single control tactic. But this single-tactic approach can aggravate insecticide resistance problems in pest populations and inadvertently destroy natural enemies of the target species. Modern dairy producers are weaving careful use of pesticides into integrated pest management (IPM) programs. IPM programs seek to maximize the effectiveness of pest control actions while conserving beneficial insects and minimizing pesticide use. The cornerstone of effective IPM is correct pest identification along with accurate and timely pest monitoring. Other components are various combinations of cultural, biological, and chemical control practices designed to keep pest populations below economically injurious levels.

Flies on dairy cattle on pasture? What's the Buzz?

Who are the usual summertime pasture pest species and what can you do about them? The NWNY Team is teaming up with Keith Waldron from NYSIPM to highlight and educate on fly management in July. Grassland Dairy, 6350 Sparks Rd, Pavilion will host a pasture fly management day July 12 from noon to 3 pm. Cost is $10 per person, lunch included. Participants will learn fly identification, life cycles, and techniques to determine if fly populations are at numbers that can cause economic injury. Learn the options available for controlling fly pests affecting animals on pasture including the role of dung beetles, use of effective biting fly catching traps suitable for use on pasture, and what you should know about making insecticide use decisions. Although this is an organic dairy, the same principles apply to conventional dairy, or beef operations.

Confined animal IPM

House flies resistant to insecticides have been found on nearly every dairy farm tested in NY. House and stable flies may contribute to impacts on animal health and productivity and milk contamination. Off farm movement of flies can lead to potential to urban - rural conflicts and possible health concerns. The second event will be at El-Vi Farms, 14 Pelis Road, Newark and will be from noon to 3 pm July 28. The focus of this workshop will be confinement flies, and flies in the immediate farmstead including calf hutches, bunks and barns. The cost is $10 per person. Topics for this workshop will be similar to the above workshop but for confinement flies Both events are supported by Northeastern IPM

Keith Waldron has statewide responsibilities for coordinating livestock and field crop IPM extension efforts for Cornell University's New York State Integrated Pest Management Program. Integrated Pest Management (IPM) is a system that utilizes *all* suitable pest control techniques and methods to keep pest populations below economically injurious levels in a way that optimizes net profits and minimizes impact on the environment.

The #1 Nutrient Requirement for Dairy Cows

By: Jackson Wright

In the dairy industry heavy emphasis has been placed on providing adequate nutrition throughout the various stages of lactation. Interestingly, one nutrient that is often overlooked is water. Limiting water availability decreases performance more rapidly and more severely than any other nutrient. Providing the opportunity for dairy cows to consume a relatively large amount of clean, fresh water is essential to maximize production.

Water constitutes 60-70% of an animal's weight and performs many functions throughout the body including facilitating digestion, eliminating waste products, transporting nutrients and other chemical messengers throughout the body, and regulating body temperature and bodily fluids. Dairy cows obtain water through voluntary drinking, as well as consuming feeds containing water. Water loss occurs through the urine, feces, and milk; as well as through evaporation from body surfaces (sweating and respiration). Therefore, water consumption can vary greatly depending on the size of the animal, physical state (i.e. pregnant, lactating, etc.), activity level, environmental temperature, and dry matter intake. It is not uncommon for lactating dairy cows to consume up to 50 gallons of water per day, and during periods of heat stress lactating dairy cows can nearly double their daily water intake. Consequently, it is critical to provide adequate access to plentiful and high quality water.

It is currently recommended to provide at least 3 linear inches of access to water per cow. In group housing, facilities should provide at least two water sources per group and water troughs should be strategically located to limit the distance cows have to walk to access water. If animals have to walk distances greater than 50 feet to gain access to water this can discourage water intake, and limit subsequent milk production. Locating properly sized water troughs in crossovers can often provide adequate access to water for cows housed in groups. When locating water troughs in crossovers, crossovers should be at least 13.5 feet wide and facilitate both access to the water trough and sufficient walking space. If unable to provide adequate access to water in group housing consider installing water troughs along the exit lane from the parlor, as cows will consume approximately 30% of their total daily water intake following milking. Another way to indirectly address access to water is by reducing stocking density. Overcrowded facilities can limit water intake due to increased competition, and water troughs may not be able to supply adequate water during periods of high usage. By simply increasing access to water it is not uncommon for herds to increase milk production 2 - 5 lbs per cow per day, even in high producing herds.

In addition to supplying adequate access to water, water quality is also important. Water quality has been associated with dry matter intake, and facilities with poor water quality show decreased water intake and feed consumption. When assessing water quality for livestock, consider if the water being provided to the animals could be a carrier for disease. One way to quickly assess water quality for livestock is to ask yourself if you would be willing to drink from the water trough. If the answer is no, the water quality should be addressed. Moreover, because water quality can directly affect production, considerations should be made regarding ease of cleaning and maintenance when selecting a water trough for your facility.

In summary, water quantity and quality are critical to animal health and performance. Water intake is determined by many factors and increases if a cow is pregnant or lactating. Ultimately, water is critical to dairy cow performance when you consider that milk is approximately 87% water and dairy cows are obligated to replace the water lost during milking. Providing easy access to a plentiful and high quality water supply is likely to increase dairy cow productivity.

Bedding, Bugs and Calves: *Maintaining Comfort and Health*

By: Jerry Bertoldo, DVM

Bedding surfaces for young calves are important for various reasons. Pathogen exposure, wetting of the hair coat, ammonia generation, comfort value, favorability to fly propagation, availability and cost should be considered in the management decisions regarding bedding choice and use. Calves groom themselves regularly spending 2.5 to 4% of the day doing so. Long straw bedding promotes the least time for grooming while a light density, small particle material such as sawdust the most. Depending on the cleanliness of the bedding surface and hence the calf's hair coat, ingestion of fecal pathogens can be significant with grooming.

Flies are the number one pest that affects young calves. Lice can be a problem on farms where calves are housed adjacent to older replacements or adults. Where calves are removed quickly after birth and placed away from older animals this is not a problem. Internal parasite infection of young calves (nematodes) occurs where there is exposure to infective larvae in adult manure that is more than 2-3 days old or dirt lots used by adult cattle. Calves are not born with these infections and will not propagate transmission as wet calves as a rule. Coccidia and Cryptosporidia infections can occur if bedding is not changed or subsurface contamination is not covered well enough by bedding. Mange and ringworm are skin diseases from contact either with infected cattle or surfaces carrying the respective mite or fungus.

The house fly, *Musca domestica*, is the primary pest of the young calf. They do not bite, but are effective fomites or carriers of disease. There is evidence that coliforms can multiply in their mouthparts. Since these flies enter darkened buildings, homes near swarming animal areas can be inundated with every opening door. House flies complete their life cycle in a very short 10 days.

The stable fly, *Stomoxys calcitrans*, is the second most common barnyard pest. These normally attack the legs and bellies of cattle with piercing mouthparts to feed on blood several times a day. Foot stomping is a telltale sign of the painful bites of both the males and the females. Decreased appetites and fatigue is possible with heavy infestation. Stable flies do not enter buildings as the house fly does. They complete their life cycles in a more leisurely 3-4 weeks.

Horn, face, heel, horse and deer flies are associated with cattle on pasture and not a concern for indoor housed calves and minor problem for hutch calves. Face flies, the carriers of the Pinkeye bacteria, may present the biggest challenge of this group.

Both the house and stable fly breed in manure, manure piles, decaying silage, moist waste feed, bedding, wet straw and grass clippings. Straw bedding has been shown to promote greater growth of both house and stable flies than wood shavings or other commonly used material. Infestation assessment and monitoring may be accomplished by use of fly counts on animals, bait traps, sticky ribbons or spot cards.

As with all fly problems, sanitation is the key management control point.

Removal of the favored breeding materials every 7 days breaks the life cycle of all flies. Keeping as little exposed wet organic matter around the farm premises as possible is ideal. Keeping manure out of muddy areas, spreading manure in a thin layer to promote drying, eliminating gaps under water tanks and feed bunks, spreading feed refusal and spoiled silage frequently are best management practices. Yet despite the best attempts at reducing the breeding efficiency of flies there may be a point where other control methods are needed. Some flies travel distances of miles routinely. A neighbor with little regard for fly control may be exporting an airborne army in your direction.

Chemicals have been used for decades to eliminate adult flies and larvae. Long acting residual products are effective for immediate knockdown, but build resistance much faster than short term agents. Space sprays and baits are effective, selective and less apt to promote resistance. Sticky tapes and ribbons can be quite effective for low to moderate infestations. Frequent changing is necessary to avoid dry, dust covered and fly saturated strips.

Biological control otherwise known as Integrated Pest Management or IPM has become more common for use against the house fly. Parasitic wasps, *Muscidifurax raptor*, selectively lay their eggs in the larvae of the house and stable fly effectively preventing them from developing. These are commercially raised and released on a weekly basis from mid-May into mid-August in northern states. It is important to note that only this species of wasp is effective against the house and stable fly, others have been promoted with little or no results. These host-parasite relationships are very species specific. These wasps are naturally occurring, but not enough to contend with the fly numbers generated on most farms today.

In addition, there are beetles and mites that are predatory to flies. All insects parasitic to flies are subject to the same chemical control effects as their victims. Residual insecticides/larvicides cannot be used in conjunction with parasitic wasp releases. Judicious use of short acting chemicals is often necessary to supplement natural parasitic wasps. Future study holds hope for parasitic control of other species of fly pests.

Estrés calórico *(Heat Stress)*

- Las vacas lecheras son muy sensibles al calor
- El clima de Nueva York varia mucho, en el invierno hace bastante frío con nieve, en el verano hace muy caliente y húmedo.
- Durante los meses del verano, las vacas pueden verse afectadas por el calor y la humedad

¿Qué le pasa a la vaca en el tiempo caloroso?

Para combatir el calor, la vaca tiene que gastar mucha energía. Para ahorrar energía, el cuerpo empieza a apagar los sistemas no vitales, principalmente la reproducción y la producción de leche.

Señales que debes observar:

- Vacas que están paradas y que buscan desesperadamente a la sombra
- Vacas con comportamiento letárgico
- Respiraciones rápidas
- Sudor y excesiva producción de saliva
- Incremento en el consume de agua
- Bajada en la producción de leche

¿Qué puedes hacer para minimizar el afecto del calor?

- Siempre provee agua y comida fresca a las vacas
- A las vacas les gusta beber después de la ordeña– asegura que las vacas pueden tomar agua inmediatamente después de la ordeña
- La limpieza rutinaria de los bebederos
- A las vacas prefieren agua tibia– *no fría*. Entre 65 y 75 grados Fahrenheit
- Maneja bien las cortinas, los ventiladores y los regadores

¿Cuando sufren las vacas del estrés calórico?

El estrés calórico es el resultado de la combinación del calor y la humedad

	HUMEDAD RELATIVA													
F	40	45	50	55	60	65	70	75	80	85	90	95	100	NIVEL DE ESTRÉS
75°	SIN ESTRÉS					72	72	73	73	74	74	75	75	Leve
80°	73	73	74	74	75	76	76	77	78	78	79	79	80	
85°	76	77	78	78	79	80	81	81	82	83	84	84	85	Mediano
90°	79	80	81	82	83	84	85	86	86	87	88	89	90	
95°	83	84	85	86	87	88	89	90	91	92	93	94	95	Severo
100°	86	87	88	90	91	92	93	94	95	97	98	99		
105°	89	91	92	93	95	96	97							

*MODIFICADO DE FRANK WIERAMA, DEPARTAMENTO DE INGENIERIA AGRICOLA, UNIVERSIDAD DE ARIZONA

Esta hoja fue hecho por Greg Coffta de Cornell Cooperative Extension

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Save the Date...

July 2011

12	Farm IT: You Probably Still Need a Farm Website, 7:00 - 9:00 p.m., Contact: Nancy Anderson: 585.394.3977 x427 or email: nea8@cornell.edu
13-17	Monroe County Fair, 2695 E. Henrietta Rd., Henrietta, Contact: 585.334.4000
18-23	Seneca County Fair, 100 Swift Rd. (Corner of Swift & North Rd.), Waterloo, Contact: 315.568.9501
19-23	Genesee County Fair, 5056 E. Main St., Batavia, Contact: 585.344.2424
19-23	Hemlock Fair, 7370 Water St., Hemlock, Contact: 585.367.3370
25	Farm IT: PowerPoint and Your Farm, 7:00 - 9:00 p.m., Contact: Nancy Anderson: 585.394.3977 x427 or email: nea8@cornell.edu
26-30	Ontario County Fair, 2820 County Rd., #47, Canandaigua, Contact: 585.747.9698

August 2011

2-6	Livingston County Fair at Caledonia, 310 Leicester St., Caledonia, Contact: 585.538.2168
8-13	Wayne County Fair, 250 W. Jackson St., Palmyra, Contact: 315.597.5372
14-21	Wyoming County Fair, N. Division St., Pike, Contact: 585.493.5626

Cornell University Cooperative Extension
One Great Idea
at 100

Centennial Celebration

Chicken BBQ Celebration - July 27th - 6:00 p.m.

Big Tree Farm, 6673 Big Tree Road, Livonia

(Across from Old Hickory Golf Club)

Tickets: $8.00 (Must be ordered before July 8th)

Historic displays!

Farm Bureau New York

Cornell University Cooperative Extension Livingston County

See Livingston CCE website for more details, registration and display set-up information.
www.ccelivingstoncounty.org or call: 585.658.3250