BEEF CATTLE COMMENTS

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1. WEST VIRGINIA BEEF TOUR-REGISTRATION DUE AUGUST 1.

10th Biennial Beef Tour
"The Mountain State Tour" to West Virginia
September 24-28, 2014

This year we will be traveling to West Virginia by bus. The focus of this year's tour is marketing feeder calves, backgrounding and stocker operations, and of course a fun night. A tentative agenda and printable registration form can be found at: http://beefcattle.ansci.cornell.edu/eventsprograms/.

Payment schedule	Trip total is $450 per person/double occupancy*	
	Amount	Date due
Deposit	$200	August 1st
Balance	$250	September 1st

*Includes bus, lodging and some meals.

To reserve your seat, fill out the form below and return to the address below along with a check made payable to Cornell University by August 1st:

Mike Baker
Cornell Beef Extension Specialist
114 Morrison Hall
Ithaca, NY 14853

For questions, call 607-255-5923 or email mjb28@cornell.edu.

Names of tour guest(s):			
Address:			
Phone:		e-mail:	
No. attending:			

2. STOCKER CATTLE. Part II - Structure

The term "stockers" was coined by mountain folks to refer to animals purchased in the spring to stock mountain pastures. The goal is to add weight economically using relatively inexpensive, excess

pasture. Sometimes referred to a summer yearling program, typically stockers are placed on pasture weighing 300-600 lbs. They graze for 90 – 150 days and gain 1.5 – 2.0 lbs./day and then transition into a finishing program to market weight. The majority of the cattle will be finished on a high energy diet, but more recently there is a demand for these calves to be finished on an all forage diet for the grass finished market.

The stocker operation serves two purposes. It aggregates light weight calves from smaller herds and prepares them for finishing. With over 70 breeds in the U.S., all managed differently and in different geographical regions, collecting these calves into a central location and implementing a consistent health and nutrition protocol decreases health risk for the next owner. Stocker operators also sort these cattle into uniform load lots which make them easier to manage further up the chain. All of these activities add value to the cattle.

Second the stocker operation acts as a warehouse, providing a steady flow of heavier cattle for finishing. In the U.S. calves are primarily born in the spring, yet demand is year round. Stockers are managed to meet the demand so finishers and consumers have a consistent supply of high quality beef 12 months out of the year.

This seems fairly straight forward, yet a strict definition is hard to come by due to the various ways the business can be structured. For example if the definition is turning forage into economic gain, then cull cows could fit this definition. Whether a cow calf operator keeps the cull cow until spring when the price is higher, or an entrepreneur who purchases cheap cows in the fall for sale in the spring, these could be defined as stocker cattle.

Often the stocker business is seen as opportunistic: buying mismanaged calves, i.e., someone else's mistakes. These calves are then straightened out and repackaged at a profit. Yet, according to the 2008 *BEEF* National Stocker Survey (NSS) only 23.9% of exclusively stocker operators purchased calves under the market; 65.3% purchased at the market and 10.8% purchased above the market (ISHMAEL 2012).

The stocker segment is also very fluid. Whereas calves are generally weaned at 5-7 months of age, finished cattle are marketed at a set body composition and cows are culled when no longer productive, stocker cattle are marketed whenever there is a profit to be made. Market weight for stockers can range from 500 lb. to 1000 lb.

Finally, stocker cattle can be purchased or raised. The largest sector of the stocker enterprise is the cow calf enterprise (ISHMAEL 2012). Of the total stocker segment, 64.6% own cows and the remainder include producers involved from cow-calf through cattle feeding (10.6%) and feedlots (4.8%).

The inventory of stockers has remained essentially the same from 2000 to 2013 at approximately 3.0 million head. The location of stocker operations has changed recently due mainly to drought conditions and the availability of ethanol. In 2013, 60% of the stocker cattle were in 10 states: Texas, Kansas, Nebraska, South Dakota, Oklahoma, Iowa, California, Colorado, Idaho, New Mexico, Washington, and Arizona. Using data from the USDA's Monthly Cattle on Feed Report, Speer (2013) notes that "stocker cattle inventories have progressively moved from the northern states to the

southeastern states. Arkansas, Virginia, Tennessee and Kentucky have captured an additional 207,000 head compared to 2000, and account for nearly 85% of the geographical shift in inventory".

This shift points to a potential business opportunity for New York. Stocker cattle are moving to where there is grass and water. With nearly 3.0 million acres of idled or underutilized land in NY (2011) we have the resources to put cheap gain on cattle that will provide cattle for finishing – either on grass or grain. In future articles we will go into more depth on the potential advantages of stocker cattle for the NY beef industry.

The education committee of the New York Beef Producer's Association has selected Stocker Cattle as a topic for the Friday session of the 2015 Winter Beef Management Conference, January 16-17 in Syracuse. I hope that you will put this date on your calendar to decide if this is a viable business opportunity for your farm.

For additional information contact Mike Baker, Cornell Beef Specialist, mjb28@cornell.edu, 607-255-5923 or Brenda Bippert, New York Beef Producer's Association Executive Secretary, nybeefproducers@aol.com, 716-870-2777.

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2011 Green grass, green jobs. Increasing Livestock Production on underutilized grasslands in NYS, pp., edited by D. WELCH. Cornell Small Farms Program Workteam on Grasslands Utilization Ithaca, NY.

ISHMAEL, W., 2012 Beef industry's stocker sector Is vital but fluid, pp. in *BEEF*, http://beefmagazine.com/stockerbackgrounders/beef-industry-s-stocker-sector-vital-fluid?page=2.

SPEER, N., 2013 Industry at a glance: Stocker cattle inventory shifting to southeast states, pp. in *BEEF*, http://beefmagazine.com/stockerbackgrounders/industry-glance-stocker-cattle-inventory-shifting-southeast-states.

3. NY ALL FORAGE BULL TEST-"It's Never Too Early to Begin Bull Development"

Nancy Glazier, Small Farms Specialist, NWNY Dairy, Livestock, Field Crops Team

I ran across some interesting journal articles working with the NY All Forage Fed Bull Test stressing the importance of good nutrition for bull development. It has been found that the first 2-6 months of age is a critical time period, an age that is usually overlooked. Significant herd improvements or declines can be made with the herd bull!

Many farms in the Northeast have a restricted breeding season. This breeding cycle calendar needs to be matched with the bull's sexual development, if a young bull is to be used herd sire. This is economically sound reasoning since less feed expense is associated with an older bull. In young bulls, scrotal circumference (SC) is positively correlated with testicular weight, sperm output, and fertility [Bagu, et al. 2006]. At times young, immature bulls have poor semen quality and low sperm production. A breeding soundness exam is essential prior to breeding season. Part of the exam includes scrotal

circumference measurement which estimates testicular size. The amount of scrotal fat also has an effect on the circumference. Overly high-energy diets tend to increase this amount of fat; generally gain less that 3.5 lb per day is reduces excess fat deposition. Too small of a circumference may mean poor fertility. A low conception rate within the herd is definitely not an equal trade-off for using a young bull!

The first months of a bull calf's life has pronounced effects on LH (luteinizing hormone) secretion and sexual development. This development involves a transient rise in circulating gonadotropin concentrations between 2 and 6 months of age. The role of LH secretion during this time of gonadotropin rise is determines age at puberty and testicular size. Puberty is defined when a bull can ejaculate 50 million sperm and with 10% motility. Semen quality and quantity is essential for sperm motility. This effect of LH has been verified with a number of studies. The early post-natal increase in mean serum LH concentrations was greater in bull calves that reached puberty early as compared to late [Bagu, et al. 2006]. Interestingly, exogenous (added) LH did not bring on commence early puberty. Improved nutrition after this period will not compensate that early critical period. Bull calves fed at a maintenance level after this period will still benefit from the early high plane of nutrition [Brito et al. 2007].

Nutrition during this early development period is critical. Low levels of nutrition may delay maturity. Whether this is due to the cow or feed may depend on each operation. First-calf heifers may have lower milk supply and/or pasture or feed may be of poorer quality are two possibilities. Many farms will graze cow-calf pairs with little attention paid to the pastures through the season; nutrition is usually not addressed until post-weaning. This reinforces the importance of rotational grazing and always having quality forage available to the pairs. The animals may have plenty to eat, but if they have to expend more energy finding enough is less energy for growth and development. Creep feeding is an excellent way to provide additional supplementation to growing calves, and in some cases supplementation may be beneficial to the cows.

The NY All Forage Fed Bull Test will be evaluating bulls again this winter at the Cornell University Ruminant Center in Dryden. Please contact me if you are interested in additional information.

Article references:

E.T. Bagu, S.J. Cook, A. Honaramooz, J.P. Aravindakshan, S. Huchkowsky, N.C. Rawlings. Changes in serum luteinizing hormone (LH) concentrations in response to luteinizing hormone releasing hormone (LHRH) in bull calves that attained puberty early or late. Theriogenology. 66 (2006) 937–944.

Brito LF, Barth AD, Rawlings NC, Wilde RE, Crews DH Jr, Mir PS, et al. Effect of nutrition during calfhood and peripubertal period on serum metabolic hormones, gonadotropins and testosterone concentrations, and on sexual development in bulls. Domest Anim Endocrinol. 2007; 33:1–18.

Effect of growth rate from 6 to 16 months of age on sexual development and reproductive function in beef bulls. L.F.C. Brito, A.D. Bartha, R.E. Wildeb, J.P. Kastelicb. Theriogenology 77 (2012) 1398–1405.

For more information, contact Nancy Glazier, NWNY Small Farms/Livestock Specialist, 585-315-7746, nig3@cornell.edu or Mike Baker, Beef Extension Specialist, 607-255-5923, mjb28@cornell.edu.

4. USING A PLATE METER TO MANAGE PASTURES – project update.

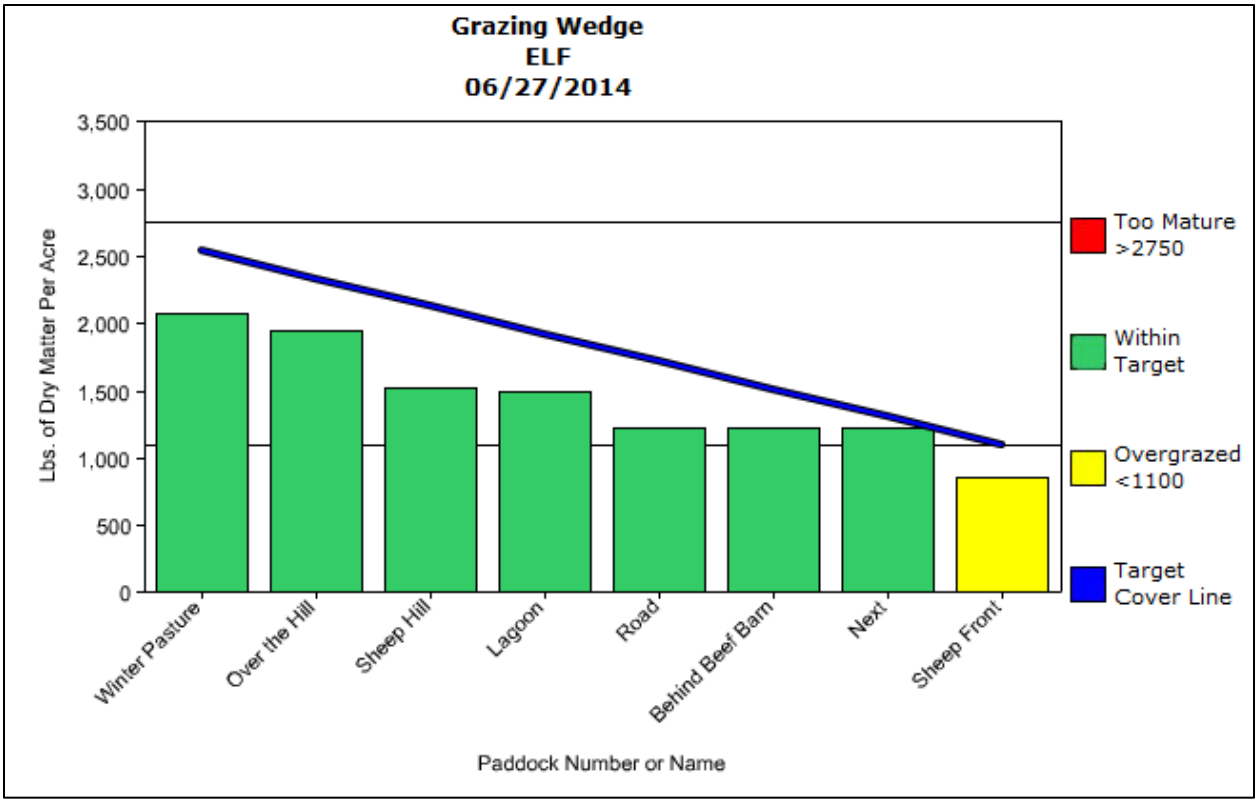
Betsy Hodge Livestock Educator, St. Lawrence County.

Pasture management is a key factor in the success of a backgrounding operation and could improve productivity cow-calf operations. As part of a Northern New York Agriculture Development grant, Ron Kuck, Cornell Cooperative Extension (CCE), Jefferson County, Betsy Hodge, CCE St. Lawrence County and Pete Hagar, CCE Clinton County have been working with some northern New York (NNY) beef farmers using a rising plate meter (RPM) to improve their pasture management, both quality and quantity. To be accurate for a specific region, the RPM has to be calibrated for the type of forages in NNY; as such forage samples are being collected to calibrate the RPM.

A RPM is an instrument with a round plate on the bottom that can move up and down on its handle (see picture below). The handle has little grooves that cause it to "click" as it goes up. It also has a counter that counts the clicks up. So we do fifty "plops" with the RPM and then make an average of the number of clicks per plop. Then we have an equation we use to figure out the dry matter per acre of pasture. One of the things we are doing with the RPM is to take forage samples in the same places where the RPM is used to compare the figures we get with the RPM. Using actual values and RPM values, we can develop an equation that is more accurate for our conditions.

Using a plate meter to estimate forage yield.

In the meantime, we are putting the information into a website at the University of Missouri (http://grazingwedge.missouri.edu/) that makes a grazing wedge (look under the farm ELF, pick a date and click on the Grazing Wedge).



The grazing wedge is a key tool for managing feed on a pasture based farm. It visually represents the quality and quantity of forage dry matter available both now and during the next round of grazing. You enter the different dry matters per acre of your paddocks and it puts them in a graph from highest dry matter to lowest. There are two lines indicating over maturity and over grazing. Normally the paddocks will fall in the order you are grazing them. It can be used to see when a paddock is ready for grazing. If you cut a hay field with the idea of grazing the re-growth you can have an idea when it is at its peak. By taking a measurement each week, you can see the progression of your paddocks and your utilization.

Another purpose for the RPM is to design your pasture paddocks. If you are breaking up a large pasture you can use your animals units to figure out how much dry matter you need and then make your paddocks according to how many days you want your animals to be in the paddock. For example, Ron Kuck used the RPM to design paddocks sizes for a stocker operation

You will notice on ours that the "Sheep Front" pasture is over grazed. In this case, we over-grazed it on purpose to make it easier to do the weed wiper demonstration.

I should mention that you can't use the data from the RPM without looking at the pasture. An estimated yield of 2400 lb. of DM/acre is great unless it is all thistles, nut sedge or something else your stock won't eat. So the RPM gives you a good estimate of the dry matter per acre in the real grazing areas.

For more information, contact Betsy Hodge, Livestock Educator, CCE – St. Lawrence County, bmf9@cornell.edu, 315-379-9192, or go www.nnyagdev.org.

5. NYCG GRAZETTE

Karen Hoffman, NRCS Grazing Specialist

Pasture Management Tips:

Do you have a pasture stick? Do you know how to use it, and do you use it? As the days become warmer, the weather becomes drier, and grass growth rates slow down, it's important to measure your grass yields to ensure you are not shorting your livestock on the dry matter they need to eat.

In case you're not sure how to use the one you have, here is a brief "owner's manual" excerpt:

General

- For best results, make sure the pasture being evaluated is between 6 and 12 inches tall.
- Walk through the pasture following an "S" or "Z" shaped route.
- Take a minimum of 10 measurements per acre of pasture. (Multiples of 10 make the math easier).
- Keep in mind, the more measurements you take, the more accurate the estimate.

Measuring Sward Surface Height

At each sample point, place the stick in the forage perpendicular to soil surface. Place your hand, palm side down alongside the stick parallel with the soil surface and slide your hand down the shaft until contact with the forage canopy is made. Record this height to the nearest whole inch. Next subtract 3-inches from this number. Subtracting 2-inches accounts for the residual stubble we want to leave behind, and subtracting 1 additional inch accounts for the inherent variability in the sward surface height.

The initial height of the forage canopy minus 3-inches = inches of forage available for grazing.

In situations where sward surface heights are very uneven (generally when canopy heights are greater than 10 inches) or where increased post-grazing residual forage heights are desired or required to maintain plant health and vigor, livestock production goals, or other management objectives, accuracy of the estimate can be improved by subtracting and additional 1 or 2 inches.

Evaluating Sward Density

At each sample point, place the stick flat on the ground with the dot grid side facing up, and slide it along the soil surface beneath the forage mass. With the stick flat on the ground and the herbage covering the stick, look directly down on the grid. Next, without moving your head or shifting your body into various positions or angles, look straight down at the grid and count the number of dots visible.

Estimating Forage Availability

Once the average number of inches of available forage has been estimated along with its density (number of dots counted) go to the top of the stick and locate the forage type that most closely reflects the pasture species composition.

Next, select the column that represents the number of dots counted, and look up the corresponding pounds of dry matter/acre/inch value for the pasture type.

Multiply the pounds of dry matter/acre/inch of forage height by the number of inches of forage available. The resultant value is a density corrected estimate of the amount of forage available in the pasture.

Pounds of dry matter/acre/inch X number of inches of available forage height = pounds/acre of forage available for grazing.

The pasture stick is not a precision instrument. However, when used in accordance with the guidelines suggested, more often than not, it will yield information that can be considered more generally correct rather than precisely wrong.

The NY Grazing News is now available on the web!

View the News online at: http://www.ny.nrcs.usda.gov/technical/pasture_grazing/grazette/index.html

6. BQA-UPDATE – CURT PATE TO HOLD LOW STRESS HANDLING CLINICS

August 5 & 6, 2014

Mark your calendar to attend a special Low Stress Cattle Handling Clinic led by renowned Montana rancher and stockmanship instructor Curt Pate and sponsored by the NY Beef Quality Assurance program. These special clinics focus on handling methods that improve gathering, penning, chute work and hauling of cattle. Emphasis is placed on ways to increase cattle performance by reducing handling stress and how the principles presented have an economic – as well as "quality of life" – benefit when applied in one's operation.

Cattle handling is a key component to Beef Quality Assurance and is important for both cattlemen and the industry for three key reasons:

- Welfare: Improved cattle handling leads to improved public perception; less injury to handlers and cattle; less carcass damage and trim loss.
- Performance: Increased efficiency; increased gain; less investment in veterinary intervention; less investment into facilities and repair.
- Quality of Life: Improved profitability; sustainable family operations; enjoyment of the beef farming lifestyle.

For all BQA Certified producers, the clinics will count for the required continuing education credits for BQA re-certification.

The clinics are free of charge and sponsored by the Beef Checkoff, New York Beef Council, New York Beef Producers Association and Cornell University Extension.

Register today for the clinic of your choice:

Date: Tuesday, August 5, 2014
Registration & Meal: 5:00 p.m.
Program: 6:00 to 8:00 p.m.
Location: Empire Livestock, Dryden, NY

Date: Wednesday, August 6, 2014
Registration & Meal: 5:00 p.m.
Program: 6:30 – 8:30 p.m.
Location: Fleur-De-Lis Farm, 2497 Canoga Rd, Seneca Falls, NY

Preregistration is required. Contact the NY Beef Council at 315.339.6922 or email cgillis@nybeef.org.

You can read more about Curt Pate by going to http://curtpatestockmanship.com/. Below is a brief description from his website:

For more than a decade, Curt Pate has been conducting demonstrations and clinics on stockmanship, colt starting, horsemanship and safety. Curt brings great value to the livestock industry. He spends his time conducting stockmanship demonstrations and trainings and also manages a small grazing operation in western South Dakota. With his ability to think outside the box, his ability to challenge others to do the same, and a willingness to share his skills, Curt has set himself apart in conducting stockmanship clinics. His lifelong experience in ranching adds credibility and enables him to communicate his methods effectively to cattle ranchers throughout the country.

7. TRACE MINERAL SUPPLEMENTATION INCREASES RIBEYE AREA AND MARBLING SCORE.

Minerals have gotten a lot of attention as a silver bullet to cover all evils. We do know that mineral requirements vary with age, stage of production, and stress. A recent study in Iowa sheds some light on benefits of supplementing cattle during a time of stress. What is most interesting is the effects that correct supplementation have on carcass quality.

This study was divided into a growing period and a finishing period divided by a 20 hour truck ride to simulate stress of transportation. The first period (growing), also called the depletion phase had two treatments: 1) supplemented with Cu, Mn, Se, and Zn at or above NRC requirements (Control) and 2) fed the same but not supplemented with trace minerals (TM) but were supplemented with Fe and Mo which are TM antagonists (Deficient). Individual feed intake was monitored by electronic collars that weighed feed disappearance. On day 71 liver biopsies were taken to correspond with the end of the depletion period and the beginning of the repletion period. On day 71 through day 88 they were transitioned to a finishing ration replacing corn silage with corn.

On day 88 the steers were loaded on a tractor trailer and transported for 20 hours. After the ride, on day 91 the steers were stratified into treatment groups based on liver status and randomly assigned to receive by injection Saline or Multimin 90. All steers were fed a common finishing ration (Repletion phase) properly supplemented at or above NRC requirements for Cu, Mn, Se and Zn. After an 84 day feeding period they were slaughtered and carcass data collected.

Results. There were limited live animal performance differences in steers due to dietary TM supplementation during the growing period. However steers that consumed the Control diet during the

growing period were better able to recover from the stress of trucking than steers receiving the Deficient diet, as indicated by the lesser daily weight loss and greater feed intake on return to the feedlot. The steers that were deficient during the growing period then given Biomin after trucking had higher feed intake and gain during the first weeks of the finishing period than steers not given the injectable mineral.

Carcass quality was also affected. Steers that were mineral deficient during the growing period had lower marbling scores than those that were properly supplemented, and the cattle injected with mineral prior to finishing had more marbling than those that received dietary supplementation only. Fat cells involved in intramuscular fat deposition are known to be influenced at a young age and any disruption in their development can have long term consequences. Since the mineral deficient cattle during the growing phase took longer to recover following the stress of trucking compared to the control steers, this may explain the lower marbling score. This emphasizes the importance of keeping cattle on an increasing plane of nutrition to obtain the highest quality grade. The mineral injection did improve marbling score even on the deficient cattle during the growing phase. Ribeye area was improved from 12.0 square inches to 12.5 square inches when supplemented by diet versus injection during the finishing period.

The authors concluded that "use of a TM injection 91 d before harvest helped overcome the negative effects of a poor plane of TM nutrition during the growing period on final carcass quality while also improving REA regardless of TM adequacy of the growing diet." While this study was not designed to test which of the trace minerals: Cu, Zn, Mn and/or Se may be the cause, it further substantiates the importance of balancing a ration and the potential value of an injectable mineral supplement.

GENTHER, O. N., and S. L. HANSEN, 2014 Effect of dietary trace mineral supplementation and a multi-element trace mineral injection on shipping response and growth performance of beef cattle. Journal of Animal Science 92: 2522-2530.

8. EXPANDING YOUR HERD? "Choose a cow that is profitable in your market and environment".

(*Editor's note, this article first appeared in the May issue of Farming Magazine, http://www.farmingmagazine.com/*)

What's the optimum cow? Like all good Extension responses, the answer is "it depends". It depends on the goals of your business, your feed resource, your management options, your market and your personal preference.

Dr. Harlan Ritchie, Professor Emeritus wrote a review of the factors that affect the efficiency of the cow (Ritchie 2001). There is biological efficiency and economic efficiency. I will summarize the review, but I encourage you to go to https://www.msu.edu/~ritchieh/papers/optimumcow.html, for some excellent insight into the optimum cow.

Biological efficiency is mostly related to the maintenance requirement of the cow. According to Ritchie "high maintenance cows tend to have the following characteristics: high milk production, high visceral organ weight, high body lean mass, low body fat mass, high output, and high input. Conversely, low maintenance cows tend to be: low in milk production, low in visceral organ weight, low in body lean mass, high in body fat mass, low output, and low input". In general, this means that higher milking breeds (Simmental, Shorthorn, dairy and crosses) will be less efficient than lower milking breeds (Hereford, Angus, Charolais and crosses). However in conditions like the northeast where we have abundant rain and therefore high quality forage, there is little difference in biological efficiency between

biological types. In fact contrary to popular belief, measures of mature cow size (weight, height, etc.) are not correlated with biological efficiency. Therefore even with increased maintenance requirement of larger breeds, the increased output (weaning weight or carcass weight) favors the larger biological types; the best match for our (New York) environment is the British x larger Continental.

Economic efficiency examines inputs relative to outputs; the goal being to decrease inputs and/or increase outputs. Inputs: feed energy consumed per unit of weight sold was not related to profit. Outputs: Crossbred cows produced greater output due to increased conception rate and weaning weight, compared to straight bred dams and therefore were more profitable. F1 dams (AN x Hereford and SM x Hereford) yielded consistently higher profits than either straight bred Herefords or ¾-Simmentals, with ¼-Simmentals being intermediate.

The above measures evaluated economic efficiency to weaning. When calves were fed low Choice finish and priced on carcass value:

1. Among 2-breed rotations, British x British crosses were most economically efficient, followed by British x Continental crosses.
2. Among 3-breed rotations, it made little difference whether 2 British or Continental breeds were used in the cross.

Ritchie concludes (and it is as true today as it was when he wrote the article in 1991) "Because of the beef industry's stated need for a dramatic improvement in uniformity and consistency, one is occasionally lulled into thinking about abandoning crossbreeding and returning to straight breeding. However, the compelling evidence in this study favoring the use of the crossbred cow as a means of harvesting the significant economic benefits of maternal heterosis quickly dispels that notion."

Production and pasture management. Research conducted at Cornell University (Andersson, Fox et al. 1990) also sheds some light on the most profitable combination of biological types and forage management. Medium and large frame Angus cows were bred to an Angus (Medium) or Simmental (High) bull. A description of the cows is shown in Table 1.

Table 1. Description of Angus cows and calf performance

	Production System	
	Medium (M)	High (H)
Cow frame score	6	7
Cow weight, lb.	1209	1268
Calf sire	AN	SM
Birth weight, lb.	75	89
Weaning weight, lb.	461	565
205 d weaning weight, lb.	526	626
ADG to weaning	2.1	2.6

Then based on data collected on dry matter production of four grazing management systems, several scenarios were modeled using COWHERD software(Perry, Fox et al. 1998). Each cow production group was modeled using Intensive Rotation (IR – 16 paddocks, moved every 3 – 5 days), Moderate Rotation (MR – 4 paddocks moved every 5 – 14 days), Continuous Improved (CI – limed and fertilized) and Continuous Unimproved (CU – no lime or fertilizer). Stocking rate was determined by forage availability to meet nutrient requirements of the cow/calf pair on a constant 110 acres. The profitability of each combination of cow production level and pasture management is shown in Table 2.

Table 2. Profitability of eight beef herd management systems

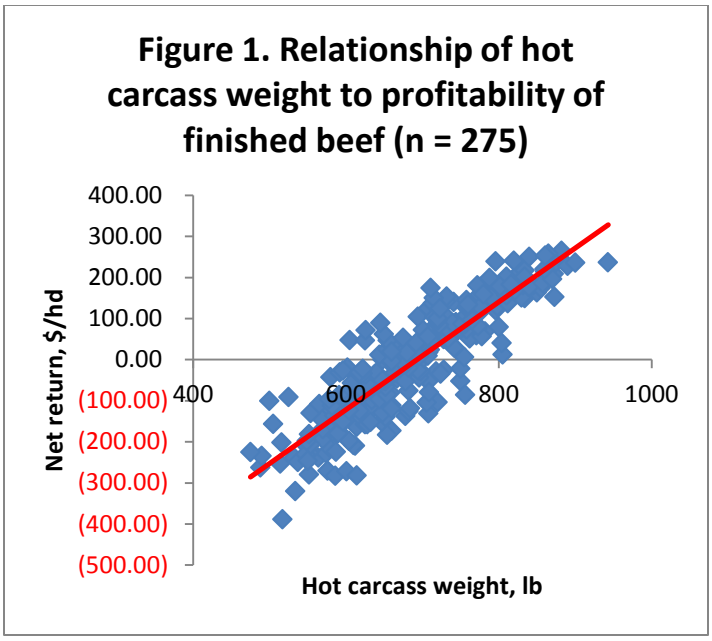
	Cow production level							
	Medium				High			
	Pasture management system							
	IR	MR	CI	CU	IR	MR	CI	CU
Annual forage produced, t[1]	393	246	169	172	393	246	169	172
No. cows	70	43	30	29	62	38	27	26
Net farm income, $	2814	873	-2195	1617	4920	1381	-1991	1711
Net farm income/acre, $/ac	26	8	-20	15	45	13	-18	16
Net farm income/cow, $/cow	40	20	-73	56	79	36	-74	66

[1]Total forage produced on 110 acres, expressed as hay equivalents

The most productive grazing system was the intensive rotational and therefore had the greatest carrying capacity. The high producing cows had the highest net farm income because of the greater weaning weight and therefore production/acre was maximized. This is important because each farm in this system has the same charge for land, buildings and equipment. Maximizing production dilutes overhead cost. The next most profitable farm was medium cows on a moderate rotational grazing system. On a per cow basis, the continuously grazed unimproved pastures were second most profitable. This system had the lowest amount of input (lime, fertilizer, and labor) and therefore could support a lower level of production. In all measures, the continuous improved had the lowest profitability. The additional cost of lime and fertilizer did not increase forage yields and therefore production to offset these added costs.

Carcass weight. A final note on market; an ongoing research project with a NY processor is designed to determine the factors that affect retail value of beef and profitability. The carcass measurements hot carcass weight, backfat, ribeye area, kidney pelvic and heart fat and marbling have been collected. At each slaughter 2 carcasses are processed uniformly, prices are assigned to each cut and total retail value of the carcass is calculated. A regression analysis was performed using the carcass measurements to develop an equation to predict total retail value. The result of this analysis showed that hot carcass weight, back fat, ribeye area and kidney, pelvic and heart fat explained 86% of the variation in total retail value. From a statistical standpoint, this is a very accurate equation. Once we know the retail value of a carcass we then subtracted all of the production costs (feeder purchase price, feed cost, yardage, processing and slaughter) to determine profit.

Figure 1 shows the influence of hot carcass weight on profitability. There are two things we can take away from this figure. First there is tremendous variation in profitability, even though these cattle only represent 5 farms. The range in profitability was -$388/hd. to +$265/hd. Clearly there is a lot of work to do in increasing consistency. The second point is that the heavier the carcass the more profit it generates.



Producing heavier carcasses requires bigger cows or moderate sized cows bred to a larger farmed bull in a terminal cross system. While our resources can support heavier cows, there is a limit. Single trait selection on carcass weight EPDs will result in larger calves, but if replacements are retained, the weight of the cow will increase over time to unacceptable levels.

Even for the direct marketer that may want smaller carcasses to satisfy their customers, profitability will increase with carcass weight within the limits of market specifications.

Summary

1. In feed abundant environments typical of the Northeast U.S., biological efficiency favors the larger biological type – Continental x British.
2. Cross bred dams (An x Hereford or Continental x British) were more profitable than straight bred dams due to higher production (lb. weaned/cow exposed).
3. When measuring the system from calf to finish, the British x British and Continental x British crosses were most economically efficient.
4. If profit maximization is the goal, use intensive rotation with high producing cows.
5. Continuous grazing is not a bad word, and when correctly stocked, can be profitable.
6. All things being equal (reproduction and pounds weaned/female exposed), carcass weight trumps other meat quality factors.
7. Optimize production for the market being targeted.
8. Finally, if you just like black cows back dropped against a white fence, accept that profit is not a motivator for your farm and enjoy the scenery.

References

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9. "BEEF UP YOUR BOTTOM LINE" CORNELL BEEF FARM BUSINESS SUMMARY

Cornell Cooperative Extension will be offering a new educational opportunity for beef operations in 2014, and is looking for producers to participate beginning in January.

As the number and size of beef operations grow across New York State, tools are needed for beef producers to better understand their farm's profitability and financial position. Mike Baker, Beef Cattle Extension Specialist of Cornell University, and more than a dozen CCE offices are working together to make **FINPACK**, a respected farm business analytical tool, available across the state. Further, the data that is generated from the project can be confidentially aggregated for New York State to create benchmarks for the industry. Our livestock operations are very different from other parts of the country, so benchmarks for our specific region are important.

BENEFITS OF PARTICIPATING:

- VALUABLE FINANCIAL DOCUMENTS
  - FINPACK will prepare financial statements and documents, including: Balance Sheets Cash Flow Statements; Income Statements; and Budgets
- BENCHMARKS
  - Compare your farm to other similar operations in New York State
- IMPROVE YOUR RECORDS
  - Keep better financial records
- TRACK YOUR PROGRESS OVER TIME
  - Compare your production and financial results from year to year

For information on how to participate contact your local Cornell Cooperative Extension office (http://ansci.cornell.edu/wp/beefcattle/field-staff/) or Mike Baker, Beef Extension Specialist, 607-255-5923, mjb28@cornell.edu.

10. TO/DO AUGUST/SEPTEMBER

1. Consider marketing options for feeder cattle:
   - Special feeder calf sales, contact local sale barn for details
2. Continue to monitor body condition of first and second calf heifers. If they drop below 4.5, they should receive supplemental nutrition.
3. The breeding season should last no more than 60 days. Make plans for keeping bull separate before and after the 60 day breeding season.

4. Line up supplies for fall roundup and weaning. Consider the following:
   a) Enroll your herd in the Cow Herd Appraisal Performance System (CHAPS) record keeping system, http://www.chaps2000.com/. This program provides important data on the productivity of your cows based on the performance of their calves.
   b) Buy ear tags to identify replacement heifers and cows.
   c) If deemed necessary (consult your veterinarian to do a fecal egg count) worm cows and bulls.
   d) Apply lice and grub control before November 5.
   e) Vaccinate calf crop for IBR, BVD, PI_3, BRSV, 7-way Clostridial. Also consider *Histophilus somnus*, and *Mannheimia haemolytica* (formerly *Pasteurella haemolytica*) and *Pasteurella multocida*. (leucotoxin). If using a modified live vaccine, this must be done after calves are weaned unless otherwise labeled. Killed vaccine products can be used on nursing calves.
   f) Treat calves for worms and grubs and supplement with Selenium.
5. Pregnancy test and cull all open cows.
6. Cull problem cows and marginal producers. Production data is easily obtained using CHAPS.
7. Take forage sample for nutrient analysis. Depending on your locality, hay may be in short supply or of poor quality. Allocating the best feed to younger, higher producing animals will stretch out your supply. Contact local Cornell Cooperative Extension office for information.
8. Consider taking soil samples and top dressing fields requiring lime, phosphorous and/or potash.