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The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

For more information contact:

Michael Donalson
County Extension Agent -
Agriculture & Natural Resources
Refugio County
107 East Roca Street, Refugio, TX 78377
Phone: (361) 526-2825
Fax: (361) 526-4340

TEXAS A&M AGRILIFE EXTENSION

Refugio County
107 East Roca Street
Refugio, Texas 78377

«OrganizationName»
«FirstName» «LastName»
«Address»
«City», «State» «Zipcode»

TEXAS A&M AGRILIFE EXTENSION

THE REFUGIO COUNTY

AGRICULTURE CONNECTION

http://refugio.agrilife.org/ September-October 2013

Beta agonists – the power tools for finishing cattle

Written by Scott Lake, Progressive Cattleman

It has been forecast that more food must be produced in the next 40 years than in the prior history of the world to meet the needs of the growing world population.

Furthermore, these increases in food production need to occur in an era of agriculture that has greater regulations reduced available land for production, dramatically increasing input costs and declining animal numbers.

Overall, every aspect of our production systems, and specifically the cattle feeding industry, needs to continually be improving in efficiency and profitability if they are to remain sustainable.

Rising feed costs, lower cattle numbers and volatile markets all make cattle feeding a very risky business.

In order to remain competitive and viable, it is essential that the cattle feeding industry utilize technology that will safely increase growth and efficiency in cattle.

For years, growth promotants and feed additives to improve health and efficiency in cattle have been available.

However, within the last decade a new class of growth promotants, beta agonists, have become available and are dramatically improving the performance and efficiency of feedlot cattle during the end of the finishing period.

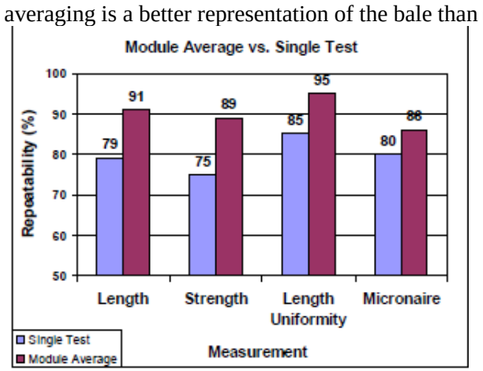
Continued on Page 4

Improving USDA's Cotton Classification System Through MODULE AVERAGING

What is Module Averaging?
Module averaging is a voluntary program offered since 1991 to Cotton Program customers at no additional charge. It is a method to improve the reproducibility of the HVI measurements of cotton strength, length, length uniformity, and micronaire. Improved reproducibility and accuracy enhances the credibility of the U.S. classification system and allows all parties to trade U.S. cotton with greater confidence in the quality measurements.

How does Module Averaging work?
Module averaging does not require a new sampling procedure. It utilizes the current procedure of obtaining a sample from each side of every bale. With module averaging, the fiber qualities for the bales within a module or trailer are determined by obtaining the average of all of the individual bale measurements of strength, length, length uniformity, and micronaire within a module or trailer and assigning that average to each bale. This average serves as the final quality measurement value. For example, the individual strength readings for each bale in the module or trailer are added together and divided by the number of bales in the module unit. The result is the module average for strength and that value is then assigned as the strength reading to each bale in the module unit.

Do Statistics Support Module Averaging?
Yes. Each year, the Cotton Program collects millions of classification data points from theentire crop as well as from Quality Assurance checklot bales and the calibration studies used to establish standards. Analyses are performed on all of this data to calculate statistics on the validity of module averaging. Since 1991, these analyses have shown that module averaging is a better representation of the bale than the individual single-bale test (see graph below).



For more information about the Cotton Program and it's operations, please refer to the USDA Website at: www.ams.usda.gov/cotton

Refugio County Beef Cattle Workshop

TEXAS A&M AGRILIFE EXTENSION

CEU's
1– General

Friday
September 27, 2013
Registration: 7—7:30am
7:30 am-12 NOON

Location: Refugio County Expo Building
Refugio, TX
Fee: $10 payable at registration

Topics

- **Replacement Heifer Selection**
- **Herd Health & Vaccination Programs**
- **Economics of Buying vs. Raising Replacement Heifers**
- **Genetic Selection and Record Keeping**
- **Insect and Pest Control for Beef Cattle**

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Breakfast Provided and Sponsored By:

CAPITAL FARM CREDIT
TEXAS' LARGEST RURAL LENDER

Door Prizes Sponsored by:

BRANGUS
TEXAS BRANGUS BREEDERS ASSOCIATION

For more information:
Texas A&M AgriLife Extension
Refugio County 361-526-2825

Don’t Forget to Destroy Your Cotton Stalk
Stephen Biles, IPM Agent

Cotton stalk destruction is a necessary component of boll weevil eradication. Without area wide stalk destruction, the eradication of the boll weevil is not possible. Past research has indicated the best method of controlling cotton plants is the application of 2,4-D herbicide at 1lb/A.

Results of research trials in Calhoun and Refugio Counties from 2011 and 2012 indicate:

- Application of 2,4-D can be made any time after shredding or picking with similar results.
- Pulled stalks without herbicide application does not achieve 100% control of cotton plants.
- Surviving pulled stalks will have squares at 35 days after pulling.
- 2,4-D treated plots did not have hostable plants 35 days after applications.
- 2,4-D (32 oz/A) provided better control of cotton plants than all rates of dicamba.

Table 1. Percent control of cotton stalks and percent of hostable plants with 2,4-D at various timings after **stalk shredding** at 30 to 44 days after initial treatment (Refugio County, 2012).

					% Control		% Hostable Plants	
					9/5/2012	9/12/2012	9/5/2012	9/12/2012
Days After First/Last Application					37 / 30	44 / 37	37 / 30	44 / 37
1	Untreated Check				0 d	1.3 c	22.5 a	28.8 a
2	Weedar 64	32	oz/a	0 day post shredding	17.5 ab	16.3 b	0 b	0 b
	Agri-Dex	0.25	% v/v					
3	Weedar 64	32	oz/a	1 day post shredding	7.5 cd	12.5 bc	0 b	0 b
	Agri-Dex	0.25	% v/v					
4	Weedar 64	32	oz/a	2 day post shredding	6.3 cd	11.3 bc	0 b	0 b
	Agri-Dex	0.25	% v/v					
5	Weedar 64	32	oz/a	4 day post shredding	10 bc	15 b	0 b	0 b
	Agri-Dex	0.25	% v/v					
6	Weedar 64	32	oz/a	7 day post shredding	18.8 a	28.8 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
LSD (P=.10)					8.24	11.28	11.22	16.45
Standard Deviation					6.65	9.1	9.05	13.27
CV					66.46	64.22	241.4	276.9
Treatment Prob(F)					0.0097	0.0196	0.0149	0.0393

Table 2. Percent control of cotton stalks and percent of hostable plants with 2,4-D at various timings after **picker harvest** at 30 to 44 days after initial treatment (Refugio County, 2012).

					% Control		% Hostable Plants	
					9/5/2012	9/12/2012	9/5/2012	9/12/2012
Days After First/Last Applic.					37 30	44 37	37 30	44 37
1	Untreated Check				37.5 b	51.3 b	27.5 a	42.5 a
2	Weedar 64	32	oz/a	0 day post harvest	98.8 a	97.5 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
3	Weedar 64	32	oz/a	1 day post harvest	95 a	95 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
4	Weedar 64	32	oz/a	2 day post harvest	96.3 a	95 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
5	Weedar 64	32	oz/a	4 day post harvest	97.5 a	100 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
6	Weedar 64	32	oz/a	7 day post harvest	81.3 a	86.3 a	0 b	0 b
	Agri-Dex	0.25	% v/v					
LSD (P=.10)					24.12	21.36	12.65	16.59
Standard Deviation					19.46	17.23	10.21	13.39
CV					23.06	19.69	222.68	188.97
Treatment Prob(F)					0.003	0.0102	0.0078	0.0018

After last year’s research, my preferred method of stalk destruction is application of 2,4-D (1 lb/A) to standing, shredded, or shredded and pulled stalks. Any field activity without the herbicide application will not result in fields being non-hostable.

OFFICE OFREFUGIO COUNTY

TEXAS A&M AGRILIFE EXTENSION

Refugio County
Private Pesticide Applicator
Training and Certification

When: October 11, 2013

Registration: 8 - 8:30 am

Training: 8:30 am

Testing: Administered by Texas Department of Agriculture immediately following training

Where: Refugio County Expo Building

Cost:

$60.00 for training and materials

$60.00 for Licensing (Payable to TDA)

Pre-Registration Required by September 27, 2013

Pre-Register by calling 361-526-2825

A Private Applicator is defined by law as a person who uses or supervises the use of a restricted-use or state-limited use pesticide for the purpose of producing an agricultural commodity.

Refugio County
107 E. Roca St.
Refugio, TX 78377
Tel.361.526.2825
Fax. 361.526.4340
Refugio-tx@tamu.edu
http://refugio.agrilife.org

Continued from Page 1

Defining classes

Beta agonists are growth promotants that mimic the action of naturally occurring hormones and bind a receptor to elicit a physiological response.

Beta agonists were originally developed to help treat respiratory conditions in humans. In the case of cattle, beta agonists work by simply shifting an animal's metabolism to more efficiently convert feed to the deposition of protein rather than fat.

This is why these products only work effectively during the late finishing phase when the animal's natural growth curve is depositing fat rather than protein.

For finishing cattle, there are two available products: Optaflexx, introduced by Elanco Animal Health in 2004, and Zilmax, introduced by Intervet in 2007, currently a Merck Animal Health product.

These two products represent two different classes of beta agonists, class 1 and class 2. To put into perspective how these products work, it is important to understand a little about muscle biology.

In all animals, muscle cells are continually being synthesized and broken down simultaneously. Beta agonists affect either the rate of synthesis or degradation or both.

Optaflexx is a class 1 beta agonist, which increases the rate of synthesis. Increased rate of synthesis while degradation remains constant results in an increase in overall muscle.

Zilmax, a class 2 beta agonist, also increases the synthesis of muscle cells but decreases the rate of degradation of existing cells, thereby increasing muscle size through two avenues, which also explains the greater response to the class 2 beta agonist – explained below.

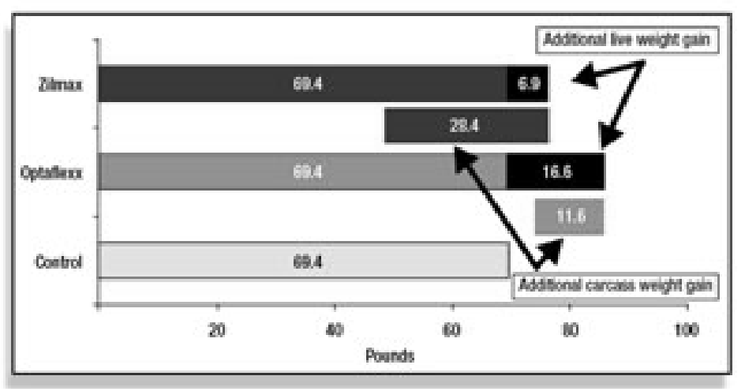
Choosing a target

The natural question that arises is: Which product is better? The answer depends on what the types of cattle are being fed and how they are being marketed.

The majority of scientific literature, as well as from the Freedom of Information Summaries, comparing these products head-to-head would suggest that class 1 beta agonist-fed steers had a greater live weight gain (see Figure 1) and had greater carcass quality compared with class 2 beta agonist-fed steers.

However, class 2 beta agonist-fed steers have a greater dressing percentage and carcass weight.

Figure 1 Beta agonist comparisons



Heifers fed the class 2 beta agonist had a greater dressing percentage and an increased hot carcass weight compared with class 1 beta agonist-fed heifers.

However, quality grade was greater for class 1 beta agonist-fed heifers compared with class 2 beta agonist-fed heifers.

Both products increased feed efficiency, average daily gain, hot carcass weight and decreased yield grades compared with cattle not supplemented a beta agonist.

Although the reduction in quality grade was not substantial in most studies for class 2 beta agonist-fed cattle, it is important to realize that if the cattle being fed are borderline low-choice/high-select type of cattle, feeding the class 2 beta agonist may potentially decrease the amount of carcasses that grade choice.

Other comparisons

In summary, both products increase feedlot performance and add weight to the carcass compared to non-supplemented cattle.

There have been reports of decreasing quality grade using both products but a greater reduction with the class 2 beta agonist.

Additionally, there are conflicting reports in the literature about the impact of the class 2 beta agonist on tenderness.

Some reports suggest there is no effect on tenderness; however, there is enough evidence in the scientific literature to suggest that the class 2 beta agonist may decrease tenderness.

Therefore, from a marketing standpoint, the literature would suggest that the class 1 beta agonist is probably the ideal product for cattle being marketed on a live weight basis or if carcass quality grade premiums are considered.

Additional live weight gains of up to 17 pounds can be realized during the last 28 to 42 days prior to slaughter by feeding the class 1 beta agonist.

The class 2 beta agonist appears to be the ideal product for cattle sold on a carcass basis where quality grade premiums are not the goal.

The class 2 beta agonist has been reported to add an additional 21 pounds of carcass weight over class 1 beta agonist cattle during the last 20 days.

Additionally, the class 2 beta agonist has been reported to be the more profitable product (up to $20 per head) on animals that typically have higher carcass quality and lower feedlot performance, such as heifers and Holstein steers.

It is important to note that it is illegal to feed either product in amounts or times that are outside of the range indicated on the label.

Refugio County Row Crops Committee Meeting

October 15, 2013

8:30 A.M.

Extension Office