



# Northeast Florida Beef and Forage Group

## 12<sup>th</sup> Regional Hay Field Day



**July 21, 2010**

**RDK FARM**

**Lake City, FL**

# Northeast Florida Beef and Forage Group

## 12<sup>th</sup> Regional Hay Field Day

### AGENDA

8:30 AM	Registration
9:00 AM	Welcome & Introductions
9:15 -10:00	Forage Establishment
10:00-10:30	Rotation 1
10:30-11:00	Rotation 2
11:00-11:30	Rotation 3
11:30-12:00	Herbicide Update
12:00- 1:00 PM	Lunch
1:00 - 3:00 PM	Equipment Demonstration

### Workshops

- A. Optimizing Fertilizer Applications
- B. Insect Management in Hay Fields
- C. Poisonous Plants
- D. Body Condition Scoring
- E. Expected Progeny Difference/  
Breeding Seasons

# Northeast Florida Beef & Forage Group

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# Planning Your Beef Cattle Breeding Program

Tim Wilson  
Bradford County Extension

A clearly defined breeding program is necessary to enable profitability and improve genetic progress. Having a breeding plan is beneficial in saving time and money by preventing mistakes that could alter the overall production goals of an operation.

## How to get started

To get started, you must know the market-end-point of the calf crop or the basics of when and where they will be sold. Knowing this information will help you determine how the breeding plan will be structured. For example, if given the option, many producers plan their calving season to coincide with optimum forage production and their ability to grow quality winter and spring forages. Coupling this information with market trends can help you determine the time-frame that breeding should occur followed by the subsequent calving season and so on. Once breeding has begun, your plan is in motion.

## What is a breeding plan?

A breeding plan is a detailed outline preparing for the upcoming breeding season. This outline can include dates for reproductive tract scoring (replacement heifers), when to turn the bull in, when to pull him out, estrous synchronization, artificial insemination (AI) breeding, pregnancy evaluation etc. This plan enables you to know when your product will be born followed by its expected weaning date.

## Sire Selection

### *Breeding Soundness Exams*

Selecting which sire will be used in a breeding program is an important decision that can have a long term impact on the overall production capabilities of a herd. Herd sires considered for natural service breeding programs must be able to pass a breeding soundness exam. If a bull does not pass this exam he should either be re-tested at a later date, approximately 30 days prior to breeding, or another sire that passes this exam should be considered. Bulls that cannot properly pursue, mount and breed every female to which he is exposed may reduce or delay overall production.

### *Structural Correctness*

Structural correctness is important in the sire selection process. Although breeding soundness exams require that bulls be structurally sound, structural correctness can vary from one bull to another.

### *Expected Progeny Difference (EPD)*

Once bulls have passed the breeding soundness exam and have been evaluated for structural correctness, an evaluation of genetic potential should be considered. Expected progeny difference (EPDs) is the genetic description of a bull derived from data not only from its calves, but also from its ancestors and full and half siblings. Although EPDs provide an excellent genetic description of a bull, many producers have difficulty understanding what they mean and how to use them.

Traits reported by a breed association may vary in number, with new traits added periodically. In a typical EPD, growth traits such as birth weight (BW), weaning weight (WW), yearling weight (YW) and Milk are often reported. Additional traits relating to carcass and ultrasound data may also be included in an EPD depending on breed (Table 1).

Table 1. Genetic traits reported by breed associations using EPDs

A. Most Associations	B. Additional Traits
1. Birth weight	1. Total maternal
2. Weaning weight	2. Direct calving ease
3. Yearling weight	3. Scrotal circumference
4. Milk	4. Marbling
	5. Maternal calving ease
	6. Mature size
	7. Pelvic area

EPD values provide a description of the genetic potential for each trait. These values are compared to the breed average (Table 2) to determine if they are high or low compared to the average bull in that breed. Breed associations usually report updated breed averages in six month intervals.

Table 2. Breed Averages (*Examples do not reflect current averages*)

	BW	WW	YW	Milk
Angus	2.6	36	66	18
Charolais	1.4	20	34	6

As additional calves are registered each year, EPD values for a bull are adjusted and the accuracy value increases. The breed average also adjusts as each bull in the breed is more accurately defined. EPD values for each breed may differ from one another.

The accuracy value is reported numerically between zero and one. When a large number of progeny have been reported to a breed association, the accuracy values will move closer to one. These values can be viewed as a percentage. For example, a value of 0.39 could be seen as 39% accurate while a 0.98 could be viewed as 98% accurate. A low accuracy value indicates that a sire may be young or that few calves have been reported to the breed association. As the EPD value is adjusted to more accurately define the capabilities of the bull, the accuracy values increase.

If the EPDs listed in Table 3 for Bull A were for an Angus bull, how would he compare to his breed average for birth weight (BW)? He has a BW EPD of 2.1 with 0.98 (98%) accuracy. When comparing the BW EPD of 2.1 to the breed average of 2.6, Bull A would be expected to produce calves with lower birth weights than the average bull in the Angus breed ( $2.1 - 2.6 = -0.5$  or 0.5 lbs lower than the breed average). Since Bull A has an accuracy value of 0.98 or 98%, it can be expected that this bull will have birth weights close to the value being reported.

Table 3. Bull A

Trait	BW	WW	YW	Milk
EPD	2.1	55	69	13
Acc	0.98	0.98	0.97	0.88

If Bull A was Charolais rather than Angus, the results would differ from those in the first example. Using the same 2.1 BW EPD, this value is more than the Charolais breed average of 1.4 which would result in calves from Bull A weighing 0.7 lbs more than the average bull in the Charolais breed ( $2.1 - 1.4 = +0.7$  lbs).

Simple mistakes using EPDs can disrupt overall production goals. Selecting for one trait without evaluating others is referred to as single trait selection. This type of selection may improve one area of production while negatively affecting another. For example, selecting a bull with a low BW EPD without considering EPD information on other traits such as WW could result in low birth weight calves coupled with low weaning or yearling weights. Multi-trait selection is encouraged when using EPDs. EPDs should not be used to predict actual performance but rather the expected.

## Type of Breeding Program

### *Natural Service Breeding*

A natural service breeding program involves turning a bull in with the cow herd at the beginning of the breeding season and pulling him out at its conclusion. Bulls used with this method should be of the highest quality. When deciding on which bull to purchase, it is important to remember that bulls that cost more for their

genetics are just as easy to feed as the cheaper, inferior bulls. If this is the only method of breeding used, try and provide the best genetics possible.

As mentioned above, these bulls should undergo a breeding soundness exam (BSE) 30 – 60 days prior to the breeding season. A BSE provides a reasonably accurate estimate of a bull's breeding potential. Bulls that fail this exam should be re-examined or sold. Some experts suggest that after the breeding season has concluded to have the herd sires re-evaluated to breeding soundness. Although this is an extra cost in the production process, if a bull fails the exam, it would provide insight if in the case pregnancy rates were below normal.

### *Artificial Insemination*

Artificial insemination has been around for over 200 years. Advancements in the last 30 years have made this method practical and economical for beef cattle producers. It is the easiest and quickest method of improving the genetics of a beef herd.

Some of the advantages of using AI include:

- Improved genetics
- Disease control
- Evaluation of fertility
- Use of proven sires

Although overall genetics within a herd can improve with AI, producers must be trained in proper AI techniques or they must be willing to hire a technician to perform this service. Once the AI breeding season is complete, many producers will turn in a clean-up bull to breed any open females. The quality of these bulls should not be compromised regardless of the number of cattle they are expected to breed. If the success rate of AI is 50 – 65%, then the clean-up bull would have sired the remaining 50 – 45%, in essence about half the calf crop.

Most AI breeding plans involve synchronizing estrus. An estrous synchronization protocol should be designed to fit individual time tables so that the appropriate amount of time can be devoted to breeding. Smaller producers may utilize this breeding method solely to avoid buying a clean-up bull, while others may combine it with natural service to maximize the opportunity for pregnancy.

### **Pregnancy Check**

Observing your cow herd for estrus after the breeding season has been completed can be useful to identify cattle that did not conceive; however, the observation of estrus is not always a fail-safe way of confirming that pregnancy has or has not occurred. Research has demonstrated that pregnant cattle may exhibit signs of estrus similar to that of those that did not conceive.

Producers should consider having cattle evaluated for pregnancy approximately 45 – 60 days after the end of the breeding season by a veterinarian or

experienced technician. Cattle that are determined not pregnant after the end of the breeding season should be managed to maximize profits. Remember that if a cow is not pregnant, it will be two seasons before she has a calf.

**Summary**

Developing a concise, accurate breeding plan will allow you to prepare and implement the events necessary to produce the product you plan to market. If you have questions related to these topics contact your local County Extension Agent for assistance.