



Farm Notes₁₀

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SOLUTIONS

Heifer Selection/Development

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Replacement Heifer Selection and Development:

Many producers across the southeast are in the process of selecting replacement heifers. Some may purchase them, but at current cattle prices, others may choose to raise them. Selecting replacement heifers from a calf crop may seem tricky, but can be made easier by following a few simple suggestions.

What are your goals when selecting replacement heifers? Heifers are unique from mature cows since they must begin cycling for the first time, weigh about 65% of the mature weight at breeding and 85% of their mature weight at calving. Replacement heifers should be fed to gain 1.5 to 1.75 pounds per day and reach puberty between 12 – 14 months of age. Age and weight directly affect puberty in heifers, and between the two, weight tends to have a greater effect on reaching puberty than age (Bagely, 1993). Heifers must be maintained on a positive plane of nutrition to reach puberty and conceive during their first breeding season.

Only heifers that conceive early in the breeding season should be kept. Replacement heifers should calve 2 – 3 weeks prior to your mature cows. This allows for additional time for them to overcome the stress of parturition, physiologically begin to milk and reproductively begin having normal estrous cycles. Heifers that fall outside of these parameters tend to have a higher chance of being culled due to conceiving later than the controlled breeding season. As replacements, they should provide adequate milk (for their calves) and rebreed quickly in next breeding season.

Replacement heifers are important to the survivability of a cow/calf operation. Developing heifers properly



can have a long-term effect on their ability to conceive and remain pregnant. It has been reported that heifers bred before they reach the appropriate weight can have reduced pregnancy rates in the subsequent breeding season (Table 1). Allowing these cattle to reach their ideal weight before breeding can increase the production capabilities of your herd.

Heifers have increased nutritional needs and should be fed separately from the cow herd. Research from Oklahoma State has shown that heifers that had restricted nutrient intake for 14 days had prevented ovulation without altering body condition. Although the appearance of the females in this study had not changed, the ability to ovulate had been challenged.

Nutrition should allow for increased weight gains for replacement heifers. However, caution should be taken not to overly fatten heifers prior to breeding. Overly conditioned heifers may deposit fat in the udder leading to reduced milking ability as mature cows. Additionally, research has indicated that reproductive problems could occur in heifers that are implanted with growth hormones at an early age.

Table 1. The effects of weight at first breeding on reproductive performance in Hereford heifers

	Weight at start of first breeding season		
	< 550 lbs.	550 – 600 lbs.	>600 lbs.
Number of heifers	40	166	45
Pregnant in 1st yr	56%	77%	90%
Pregnant in 2nd yr of heifers calving	18%	57%	69%
Pregnant in 2nd yr of original heifers	8%	40%	60%

(Source: Sprott and Troxel. *Management of Replacement Heifers for a High Reproductive Calving Rate*. B-1213. Texas Agricultural Extension Service)

When selecting replacement heifers, below are a few suggestions to consider:

- **Body type & confirmation** – Emphasis should be placed on animals with more internal volume and capacity, natural muscling and fleshing ability. Traits to look for are: spring of rib, depth of rib, natural thickness and shape down the top, thicker quartered, and width through the stifle.
- **Femininity** – In selecting replacement heifers we want our “girls to look like girls.” Femininity is exhibited by a longer, more refined head that is sharper about the poll. Females should possess a long, trim neck and be smooth about the shoulders.
- **Structural soundness** – Replacement heifers must be structurally sound. They are costly to develop so they must remain in the herd as long as possible. Be careful to evaluate their feet and legs for structural soundness.
- **Oldest and heaviest heifers** – The oldest and heaviest heifers in a calf crop were born from cows that calved early in the calving season. Although reproductive traits are considered *low* in heritability, heifers from reproductively sound cows should not be overlooked. Heifers that are the heaviest are more likely to reach puberty sooner compared to lighter weight counterparts.
- **Frame score** – Frame score is easily determined and should be used in the heifer selection process to eliminate those that do not fit predetermined production goals. Selecting heifers with frame scores of 4 to 6 will result in mature cow weights of 1100 to 1250 pounds.
- **Disposition** – Calves with poor disposition may be a physical risk to anyone who handles them. Not only do they pose a danger, they may display decreased performance as compared to their calmer counterparts.
- **Select twice as many as you need** – Pregnancy rates vary from one operation to another. It is not feasible to feed non-pregnant cattle; therefore, all replacement heifers must be bred. It is assumed that when developing replacement heifers that 50% will conceive and will be able to enter the herd. All pregnant or open heifers that are not used as replacements can be sold to offset production costs.