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Forages and Pasture Systems for Niche Marketing of Beef Cattle

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"Have you found your niche?" Many of us have been asked this question by family or in-laws as they seek an update on the financial and personal condition/stability of our profession.

McCorkle and Anderson (2009) indicated that niche has a French origin that Webster defines as "to nest". This "nest" may imply a "safe-place", a "hiding-spot", or a "unique site". When referring to "niche marketing", several (McCorkle and Anderson, 2009; Rawls et al, 2002) have provided a definition of "targeting a product or service to a unique or small portion of the market that is not being served by a mainstream product". A brief search on the internet for "niche marketing" results in numerous pages of "hits" with each page containing 8 to 10 specific examples of a product for sale or a method of marketing a product to the public and private sectors.

Niche Marketing of Beef

With the mention of niche marketing of beef cattle, most often the subject is targeted toward the merchandizing of some form of beef for consumption. Umberger and Thilmany partitioned niche beef markets into: a) Large Alliance Niche with a large number of producers (several states), contractual agreements and specifications, and national or international distribution; and b) Micro Niche with one or several producers, regional distribution of product, and may include only seasonal production. Niche marketing of beef has become largely synonymous with Organic Beef, Natural Beef, Lean Beef, Grass-Fed, and Pasture-Finished Beef. Certainly, there are variable specifications of diet, medications, ionophores, supplementation, etc for each of the various types of "beef". Hence, a "niche product" can be developed and produced for customers who may not prefer conventional beef, and are willing to pay a premium for actual or perceived differences in taste, health, etc. And, there are numerous scientific experimentation and results that reports comparative aspects of a variety of carcass trait attributes for conventional fed vs forage finished beef.

Creating a Niche

There are many opportunities and obstacles involved in establishing a business of merchandizing. McCorkle and Anderson (2009) listed some of the steps involved with getting started in the business which included the following: a) identify the specific niche market to be served and all its characteristics; b) establish goals for family and occupation; c) inventory your resources of capital, and labor, knowledge, and special skills and talents; d) define resources that are lacking and how to deal with these; and e) develop a business/marketing plan. They further list the necessities of the outline or map to be used for you and family, potential investors, and lending institutions. This plan may include: a) general description of business; b) market analysis; c) mission statement/objective; d) marketing plan; e) projected sales schedules and volumes; f) financial plan; g) sources of help; and h) sensitivity or risk analysis.

Risks Associated with Niche Market of Beef

Beef production from the cow-calf and forage perspective is linked to seasonality of production. Time of calving is environment x breedtype specific, but a majority of calves are weaned in late-summer to early-fall. A secondary season of weaning is early summer. Umberger and Thilmany listed the risks associated

with producing for a niche market to include: a) production risk; b) managerial risk; c) financial risk; d) marketing and price risk; and e) legal risk. Two of the most significant risks associated with niche marketing of beef are the seasonality of production and climatic-vegetational zones of production. These two components affect supply and performance of animals as well as availability and nutritive value of the ration (for grass-fat niche). Other niche marketing such as Organic and Natural Beef are most often produced from feedlots; thus, seasonality of production is not a major constraint compared to pasture finished cattle. Cattle in feedlots have ad libitum access to nutrient-dense rations that are targeted for optimum to maximum gain and growth regimens. Both DM and quality of ration are constantly available, and energy exerted is drastically reduced for travel in seeking the daily diet-ration. Thus, cattle for harvest can be available on a 24-7 basis for essentially 365 days. For the freely grazing animal, however, forage abundance and high nutritive value for acceptable gains have seasonal niches of 60 to 200 day periods. And, the final marketable product under grazing systems has similar restricted availability options that match forage seasonality.

Other Niche Marketings for Cattle

The niche marketing of beef cattle includes the actual and/or potential to merchandize an array of components for the beef cattle industry. Some of these less-advertized, but potential, lucrative niche markets, include Replacement Heifers (open or bred); Replacement Pairs; Backgrounding Steers and/or Heifers for Feedlot, or for Natural or Organic Sources; Monthly or Yearlong Pasture/Rangeland for cow-calf and/or yearlings; and other ventures that provide growth and development of cattle on forage systems.

Niche Marketing Using Forages and Pasture Systems

In the case for any niche marketing venture, but, especially when forages and pasture-rangeland systems are major components of the production phase, one should be aware of the factors and risks associated with the particular "niche market". With these prioritized listings, management should start "at the end of the list and work backwards to the top of the list". Questions for niche production from pastures… or grass… include: "What is the cattle age – weight – condition factor at termination?"; "Is there a season or seasons for product termination?"; and "Does the market allow for only forage, or for forage plus supplementation, implant, etc?"

Forages for Beef Niche

Grass-fat cattle may transition through several seasons; however, during the final stages (60-120 days), cattle average daily gain (ADG) should be sufficient to result in a body condition score (BCS) of $\geq$6. Thus, the greater the desired BCS, the greater requirements for ADG and the greater need for high quality forages. Tenderness and overall satisfaction of beef is directly related to BCS and ADG during the final stages of production. Thus, for an exclusive forage diet, the classes of forages and pasture system that will allow for ADG of 2 lbs/day to more than 3 lbs/day include cool-season annual forages. The most reliable cool-season annual forages are small grains (oats, wheat, rye, and barley), and followed by annual ryegrass and legumes (clovers, vetch, and medics). The dry matter production period for these forages includes November to May (small grains); January to May (ryegrass); and February to April/May (legumes). The nutritive value of these annuals is the highest of any class of forages; thus these forages will be major components of the pasture system for harvest-off-pasture or grass-fat ventures.

The next class of forages that will allow cattle gains >2 lbs/day are the warm-season annual grasses (brown mid-rib sorghum x sudangrass; pearl millet; crabgrass). These summer annual grasses have erratic growth rates during the summer as a direct result of rainfall. Thus, stocking scenarios and harvest management options, and subsequent, desired ADG can provide management challenges in both wet and drought-like conditions. Harvested forage and/or rotational stocking are usually anticipated practices to achieve optimum utilization and maintain forage DM and nutritive value for desired BCS and ADG.

The lowest nutritive value-containing forages are the warm-season perennial grasses such as bermudagrass, bahiagrass, kleingrass, bluestems, etc. However, these are the most abundant forages for permanent pasture-rangeland systems. Warm-season perennial grasses are the basic forages for pastures and rangeland in Texas and other southern states. These base-grasses are the foundation of sustainable grazinglands and are the primary factors involved with successful stewardship. These basic forages are the building blocks for management and stocking strategies that optimize use of seasonal availability of acceptable nutritive value, and also for the inclusion via sod-seeding of cool-season annual forages.

Of these perennial grasses, Tifton 85 bermudagrass has the highest nutritive value potential, and thus results in the greatest ADG during the summer months. In general, stocker ADG from Tifton 85 pastures may be >2 lbs/day during April-June; however, from July to October, stocker ADG usually is <1.5 lbs/day without the use of supplementation.

Specific Examples of Forages and Pasture Systems for Niche Marketing of Beef

In Texas, there are 10 vegetational zones that have unique climatic conditions (rainfall, temperature), soil types and nutrient content, adaptive warm-season perennial grasses (native, introduced), and the potential for inclusion of cool- and warm-season annual grasses and legumes. Although beef production using primary or exclusive forages may vary according to vegetation zone and/or by county, the two main beef niche marketing scenarios from pasture systems include: 1) stocker calves grazed on small grain pastures with or without ryegrass to time of harvest; and 2) fall born calves grazed on small grain, ryegrass, and/or clover and harvested directly at weaning. Thus, the seasonality component of available high quality forage from November-December to April-June becomes a factor in production (rainfall and temperature), availability of product, and merchandizing of niche beef products.

An example of forages and management for fall weaned calves weighing 500 to 600 pounds is shown in Table 1. During numerous stocker experiments at Texas A&M AgriLife Research at Overton using rye + ryegrass, steers and heifers have off-pasture weights of 900 to 1100 pounds with BCS >6 (Figure 1). Depending upon merchandizing guidelines and alternatives, stockers may receive an energy supplementation to enhance gain, overall end weight, and body condition score. In the event lighter-weight stockers are used in the fall and/or as a management strategy to produce niche beef during an extended period, the use of summer annual grasses or Tifton 85 bermudagrass offers an opportunity to harvest off pasture during the summer-fall.

Depending upon the guidelines and end-weight conditions of the niche beef marketing program, heavy-weight calves of 800 to 950 pounds at weaning offers an opportunity to use a fall calving season and harvest at weaning. An example of timing and cool-season annual forages during the suckling period are shown in Table 2. In general, the success rate of these fall-calving and winter annual pasture systems is greater in the eastern vegetational zones. Pasture systems with bermudagrass or bahiagrass, for example, are more conducive for sod-seeding with any one or a combination of the cool-season annual forages. In order for a calf to gain at 2.5 to >3 pounds per day and wean in excess of 800 pounds at 8 to 9 months of age, high quality, cool-season annual grasses must be a major part of the pasture system. In the event that creep-feeding of calves pre-weaning is an allowable option, then winter-born calves can also fit this niche beef market.

Forages for Replacements and Backgrounding Stockers

Replacement Heifers. The development of fall-weaned replacement heifers can utilize the same forages and systems that are used for the fall-weaned beef niche (Table 1). However, the stocking strategies can be altered appropriately with respect to stocking rates that may offer opportunities for either maximum ADG or an optimum ADG. The general objective is that of providing adequate forage to allow heifers an opportunity to reach appropriate weight (breedtype specific) to be bred during April-June. Thus,

management decisions for small grain plus ryegrass pastures are targeted at stocking rate, hay and/or supplementation requirements. Depending upon the start weight, target weight, and bull exposure, pasture systems may range from exclusive warm-season perennial grass, hay, and supplement to an inclusion of any combination of cool-season annual forages. However, rate of gain is a function of nutrient intake, and higher quality forages allow for greater ADG and reduced time of development of frame and body weight.

Backgrounding Stockers. The most flexible forage and pasture systems for backgrounding steer and heifer stockers are available across several vegetation zones. For many of these ventures, animal health issues are the primary concern for the weaned calves. Stocker age and weight at initiation of the stocking period dictates the need for cool-season annual forages and/or warm-season annual perennial grasses with or without supplementation. These operations can incorporate forages shown in Table 1 as well as perennial grasses such as bermudagrass, native grasses, or warm-season annual grasses. Stocker performance on bermudagrasses has been well documented, and ADG may range from 1 to >2 lbs/day depending on duration of stocking, stocker breedtype-weight-age, stocking rate for desired gain per acre, and supplementation.

Matching Forage and Animal Niches. Forages and pasture systems for niche marketing of beef, replacements, or backgrounding ventures have unique, seasonal DM production characteristics. These forage production trends and nutritive value attributes are predictable for forage classes in the various vegetational zones. Climatic conditions and seasonality of production-availability creates the necessity for management planning and stocking strategies to reduce-avert risks for the venture. Advanced knowledge of soil nutrition status, fertilization requirements, and potential stocking rate allows for management decisions for stocking methods, stored forage (hay, baleage, silage), and/or supplementation. These projected input costs for any niche-based or conventional production model will provide the basis for purchase-sell decisions. Forages and pasture systems for niche marketing beef or other products have relatively defined boundaries and risk during the season(s) of production. Stocking rate strategies, and not stocking methods, are responsible for optimum gain per animal x gain per acre relationships. In general, any specific class of forage has a window of opportunity for supplying high quality forage for animal performance requirements for niche marketing of beef or other products. With forages and pasture systems for niche marketing, one has the opportunity to experience most of all of the risks associated with merchandizing, and also to add climatic risk to the list. Thus, the management risk-list should begin with climatic variations, and the available production periods that can produce targeted growth and performance. High nutritive value hay or other stored forages offers a risk-aversion strategy to an exclusive, active grazing scenario. Forages and pasture-rangeland systems provide more than 70% of the lifetime diet-nutrients for beef cattle. With the perennial warm-season grass base for Texas, the southwest, and southeastern cattle operations, forages have niche-production-nutrient content attributes. Management strategies for all aspects of beef production are constantly targeted and forced to deal with seasonality niches. Challenges and opportunities for niche marketing of beef cattle combines the forage niche with time of availability of dry matter, protein, and energy with the targeted production, end-point, and time demands of a specific beef niche market.

Table 1. Monthly calendar of events for fall-weaned calves and forages for optimum gain potential for harvest off pasture.

Month	**Activity**	**Forages/Pastures**
August – September	Suckling	Perennial grass pasture[1]
October	Wean; Background	Hay + Supplement Perennial grass + Supplement
November	Background; Initiate Stocking	Perennial grass + Supplement Oats, Wheat, Rye ± Ryegrass
December – March	Stocked on Pasture	Oats, Wheat, Rye ± Ryegrass
April	Stocked on Pasture; Harvest Option	Oats, Wheat, Rye ± Ryegrass
May	Harvest Option	Ryegrass; Perennial grass
June	Harvest Option	Warm-season annual grass[2] Tifton 85 bermudagrass
July	Reduced Harvest Option	Warm-season annual grass Tifton 85 bermudagrass

[1] Bermudagrass, etc; Native grasses
[2] Brown mid-rib sorghum x sudangrass; pearl millet

Table 2. Monthly calendar of events for fall-born calves and forages for optimum gain for harvest at weaning.

Month	**Activity**	**Forages/Pastures**
August	Dry cow	Perennial grass pastures[1]
September	Calve	Perennial grass pastures
October	Calve; suckling calf	Perennial grass pastures[1]
November	Cow-calf; suckling	Perennial grass; Hay ± Supplement
December	Cow-calf; suckling	Hay ± Supplement; Small Grain[2]
January	Cow-calf; suckling	Small grain
February - April	Cow-calf; suckling	Ryegrass ± clover
May	Wean; Harvest Option	Ryegrass; Bermudagrass
June	Wean; Harvest Option	Bermudagrass ± Supplement
July	Wean; Reduced Harvest Option	Bermudagrass ± Supplement

[1] Bermudagrass, etc; Native grasses
[2] Oats, Wheat, Rye

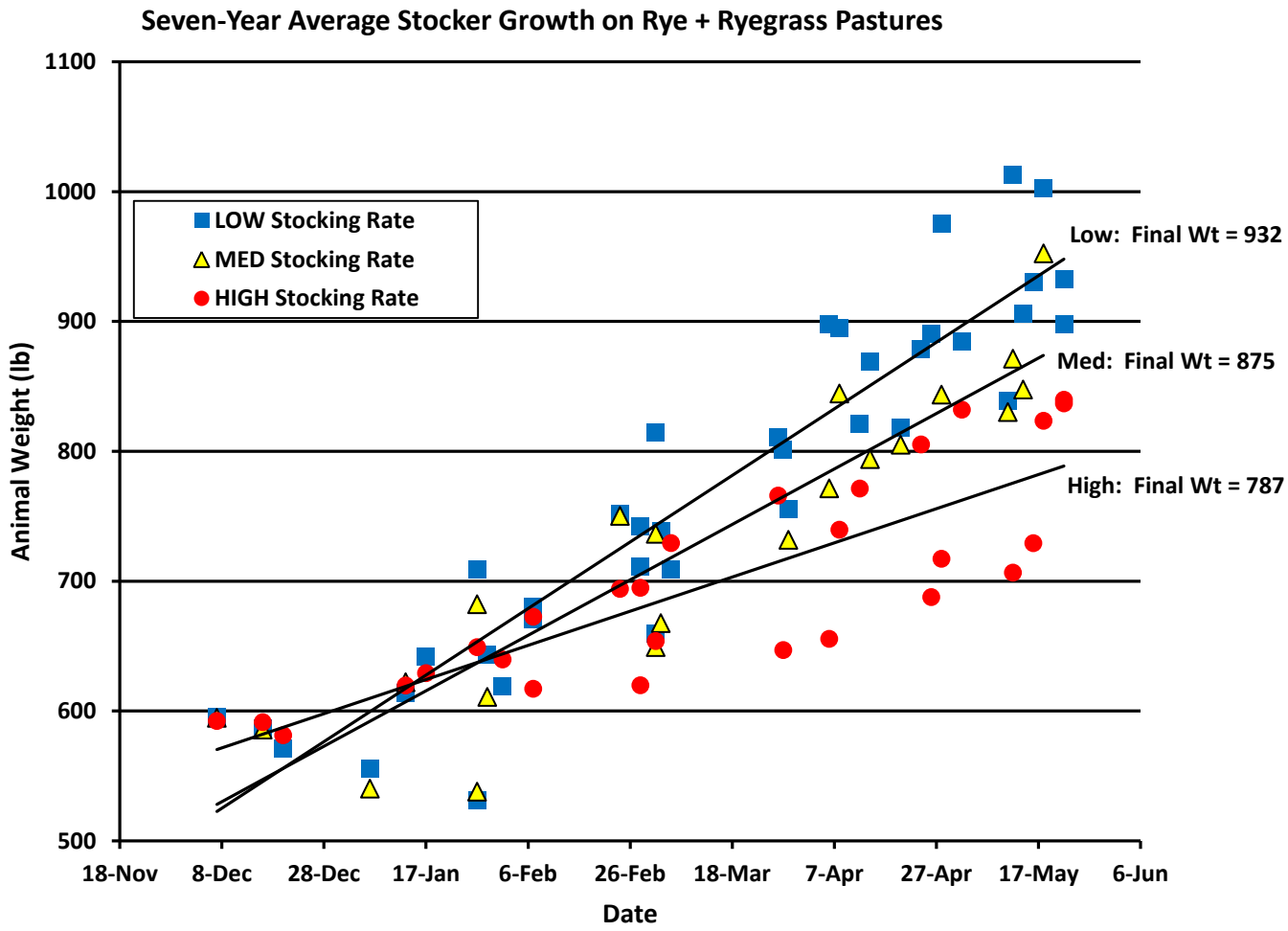

Figure 1. Growth rate of stocker steers and heifers stocked on rye + ryegrass at three stocking rates (7-year average; Rouquette et al. 2012).

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