Ona Report: Special Edition

John Arthington, Brent Sellers, Raoul Boughton, Chris Prevatt, Maria Silveira, Joe Vendramini, and Phillipe Moriel

Selenium Fertilization of Forage

John Arthington
Professor and Center Director
and
Juliana Ranches
MS Graduate Student

• High-selenium hay was created by sodium selenate fertilization of Jiggs bermudagrass.
• High-selenium hay was fed to weaned calves (Study 1) and prepartum cows (Study 2) and compared to sodium selenite and a No-selenium control.
• Measurements include, selenium status of cows and calves (liver, blood, milk, placenta) and Se-dependent enzyme activity and measures of passive immunity.

Selenium Fertilization of Forage

Juliana Ranches
MS Graduate Student
Weaned beef calves were pair-fed high-selenium hay or Na selenite (or no selenium control) over a 42-day period.

Broomsedge Management in Bahiagrass Pastures
Brent A. Sellers and Maria L. Silveira
Broomedge

- Tufted perennials
- 3 to 5 yrs
- ~18 species present
- Management
  - ????
  - Lime
  - P
  - Micronutrients

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Methods

- 3 locations
  - Ona (2012; purple bluestem)
  - Arcadia (2012; bushy bluestem)
  - St. Cloud (2013; broomsedge bluestem)

- Annual application
  - 10-5-10
  - Frit 503G (micros)

- Broomedge counts annually

Broomedge Results
Forage Management
Joe Vendramini
Associate Professor – Forage Specialist

• Evaluation of perennial peanut cultivars propagated by seed

Forage Management

• Evaluation of perennial peanut cultivars propagated by seed
• Evaluation of Sunnhemp (<i>Crotalaria juncea</i>) as a warm-season annual legume for early-spring forage production

• Identification of superior limpograss cultivars under low-input systems

• Evaluation of new Brachiaria cultivars under low-input systems
The Working Ranch and Wildlife

Raoul Boughton
Rangeland Wildlife and Ecosystem Program

Ranches and Habitat

• Ranching has modified and manipulated natural landscapes to support the production of beef
• Detrimental for some species but not others
• Especially important for several Threatened and Endangered Species
• In Florida ranches provide a grassland habitat that is disappearing worldwide and if managed well can provide excellent habitat for many species
• Crested Caracara, Wood Storks, Sandhill Cranes, American Kestrels, Shrikes and Burrowing Owls to name a few

Rangeland Wildlife

• I work with ranchers on ranches to identify how important ranch habitats are to certain species.
• You may ask “Why is it so important to know?”
• The large connected ranch environments of Florida probably provide the core habitat for many species and as ranch habitats are slowly developed, the last bastion for some species will be lost and those species may go extinct.
• Because of this ranches have conservation value and understanding how much ranch habitats are important to a species survival will increase that value.
• A thorough understanding should provide the populace and agencies information that will argue for increased dollar incentives to be provided to ranchers to be both beef producers and best practice wildlife managers.
• From a ranching perspective this can be thought of as diversifying your business.
Florida ranchers provide habitat mostly in the form of improved pasture.

Rural Owls are probably an important part of the population of Burrowing Owls
Urban owls especially on the cost of Florida are declining
Ranchers are providing protection for a declining species and should be recognized for that service
Cattle and Owls can co-exist, and rural populations are very important
We are collecting the data to show how important
Philipe Moriel  
Beef Cattle Nutrition

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863-735-1314 ext. 208

Educational background

- **B.S. Animal Science**  
  Sao Paulo State University  
  2008  
  Mentor – Dr. Jose L. M. Vasconcelos

- **M.S. Animal and Veterinary Sciences**  
  University of Wyoming  
  2010  
  Thesis - Camelina co-products as feed supplements for developing replacement beef heifers.  
  Mentor - Dr. Bret W. Hess

- **Ph.D. Ruminant Nutrition**  
  University of Florida  
  2013  
  Mentor - Dr. John D. Arthington

Previous Employment = NCSU

- **October 7th, 2013**  
  to May 30th, 2016  
  Assistant Professor,  
  Department of Animal Science  
  Livestock Specialist,  
  Mountain Research Station

  - 75% Extension  
  - 25% Research – Beef Cattle Nutrition/Reproduction/Immunity

  "Create a producer-driven research/extension program to address immediate needs of producers using hands-on approach and research results primarily from our research team."
Research

1. Pre- and post-weaning calf immunity and growth
   • Pre-weaning calf management
   • Alternatives to enhance vaccine response
     • Pharmaceutical companies support

2. Fetal Programming
   • Gestational nutritional management vs. postnatal calf performance
     • Frequency and type of supplementation, forage chemical composition, herbage mass, stocking rate, …
     • Focus on (1) pre- and post-weaning growth
     • (2) immunity following stressful events

3. Metabolic Imprinting
   • Strategies to explore metabolic imprinting effects
   • Alternatives to beef producers in addition to early-weaning

Potential Extension Programs

1. Calf health
   • Decrease pre-weaning calf loss
   • Improve post-weaning calf immunity

2. Winter feed supplementation
   • Supplementation alternatives
     • Impact on cow and calf postnatal performance
     • Heifer development

3. Strategies to increase calf value
   • Health status, lot size, calf uniformity, castration, growth implant
   • Creep-feeding, preconditioning

Based on 2015 Florida Cattlemen's Association Research Priorities

Extension

1. FL Beef Team of agents, producers and RCREC faculty
   • Drive research and extension priorities

2. Hands-on approach
   • Multiple rotating stations
   • Live animal demonstration when possible

3. Multi-county
   • Convenient for producers
   • Agent and producers involved

4. Video-recorded for later visualization
   • Increase producer outreach
Livestock and Forage Economics Program

Chris Prevatt
Range Cattle REC

Outline

• Expansion of the U.S. Cattle Herd
• Enterprise Budgets
  • Beef Cow-Calf, Stocker, Replacement Heifer
  • Warm-Season and Cool-Season Forage Budgets
• Cost of Production

Expansion of the U.S. Cattle Herd

U.S. Cattle Inventory, January 1st

- 2015: 917,800 (69.3%)
- 2016: 1,240,600 (32.5%)

- 2017: 1,207,800 (32.5%)
- 2018: 1,231,900 (35.0%)
- 2019: 1,246,200 (36.0%)
- 2020: 1,258,800 (38.0%)
- 2021: 1,268,400 (39.0%)
- 2022: 1,272,200 (40.0%)
- 2023: 1,275,700 (41.0%)
- 2024: 1,278,100 (42.0%)
- 2025: 1,280,600 (43.0%)

- 2026: 1,282,300 (44.0%)
- 2027: 1,283,700 (45.0%)
- 2028: 1,285,000 (46.0%)
- 2029: 1,286,200 (47.0%)
- 2030: 1,287,500 (48.0%)

- 2031: 1,288,800 (49.0%)
- 2032: 1,290,100 (50.0%)
- 2033: 1,291,500 (51.0%)
- 2034: 1,292,800 (52.0%)
- 2035: 1,294,100 (53.0%)
- 2036: 1,295,400 (54.0%)
- 2037: 1,296,700 (55.0%)
- 2038: 1,298,000 (56.0%)
- 2039: 1,299,400 (57.0%)
- 2040: 1,300,800 (58.0%)
- 2041: 1,302,200 (59.0%)
- 2042: 1,303,600 (60.0%)
- 2043: 1,305,000 (61.0%)
- 2044: 1,306,400 (62.0%)
- 2045: 1,307,800 (63.0%)
- 2046: 1,309,200 (64.0%)
- 2047: 1,310,600 (65.0%)
- 2048: 1,312,000 (66.0%)
- 2049: 1,313,400 (67.0%)
- 2050: 1,314,800 (68.0%)
- 2051: 1,316,200 (69.0%)
- 2052: 1,317,600 (70.0%)
- 2053: 1,319,000 (71.0%)
- 2054: 1,320,400 (72.0%)
- 2055: 1,321,800 (73.0%)
- 2056: 1,323,200 (74.0%)
- 2057: 1,324,600 (75.0%)
- 2058: 1,326,000 (76.0%)
- 2059: 1,327,400 (77.0%)
- 2060: 1,328,800 (78.0%)
- 2061: 1,330,200 (79.0%)
- 2062: 1,331,600 (80.0%)
- 2063: 1,333,000 (81.0%)
- 2064: 1,334,400 (82.0%)
- 2065: 1,335,800 (83.0%)
- 2066: 1,337,200 (84.0%)
- 2067: 1,338,600 (85.0%)
- 2068: 1,340,000 (86.0%)
- 2069: 1,341,400 (87.0%)
- 2070: 1,342,800 (88.0%)
- 2071: 1,344,200 (89.0%)
- 2072: 1,345,600 (90.0%)
- 2073: 1,347,000 (91.0%)
- 2074: 1,348,400 (92.0%)
- 2075: 1,349,800 (93.0%)
- 2076: 1,351,200 (94.0%)
- 2077: 1,352,600 (95.0%)
- 2078: 1,354,000 (96.0%)
- 2079: 1,355,400 (97.0%)
- 2080: 1,356,800 (98.0%)
- 2081: 1,358,200 (99.0%)
- 2082: 1,359,600 (100.0%)
Enterprise Budgets

2015 UF Beef Cow-Calf Budget
(Assumes Raised Replacement Heifers)

Welcome! These excel spreadsheets contain a budget template for cow-calf enterprises. The purpose of this budget template is to serve as a management and decision-making guide for current and prospective producers of cow-calf enterprises. Each cow-calf operation is unique in both size and structure, and thus, the cow-calf budget template allows for individual producers the opportunity to evaluate the costs and returns of their specific operation. The budget template may also be used to evaluate projected production and marketing practices and what (if any) it will benefit the cow-calf producer’s own needs and estimates.

In order to complete the 2015 UF Beef Cow-Calf Budget template, users must enter their reported production and cost estimates into the input cells highlighted in blue. All other cells in the workbook are pre-filled to protect the formulas and headings. Only the cells highlighted in blue can be altered. Once data are entered into the input cells, formulas throughout the workbook will automatically recalculate. Each worksheet has been preset to print in a portrait format.

Cost of Production

LMIC Estimated Average Cow-Calf Costs
Includes Pasture, Rent, Annual

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• Raoul Boughton – rboughton@ufl.edu
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• Phillipe Moriel –
• Main Office – 863-735-1314
**Next Webinar**

- Dr. John Arthington
  - July 12, 2016 at Noon

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**Agronomic and Environmental Impacts of Biosolids Application to Bahiagrass Pastures**

Maria L. Silveira¹, George O’Connor², and Joao Vendramini²

¹UF/IFAS Range Cattle REC, ²Soil & Water Science Department

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**Biosolids “dilemma”**

- Essential nutrients (N, P, C, S, and micronutrients), liming potential, enhancement of soil biological and physical properties
- N:P ratio in biosolids vs. crop requirements
  - N-based rates provide excess P
  - P-based rates very low (~1-2 T/A)
- Impractical
- Uneconomical
- Require greater land area
- Require supplemental N
Objectives

1. To establish a long-term, instrumented field trial designed to evaluate the agronomic benefits of biosolids application on forage production.
2. To evaluate the effects of co-application of biosolids and biochar (also known as “black carbon”) on soil chemical (C, N, and P dynamics) and physical properties (water holding capacity, aggregate stability)
3. To monitor N and P losses via leaching and gas emissions

Materials and Methods

- Treatments: 3 Biosolids + commercial fertilizer (N and P) applied either alone or in combination with biochar (1% wt. basis). Biosolids and fertilizer will be applied at a rate of 160 lb plant available N/A.
- Why biochar?
  - C-rich material that can act as a strong sorbent that can control excess N and P in soil and water
  - Non-hazardous residuals
  - Low cost
  - Improve soil chemical, physical, and biological properties