



Range Cattle Research and Education Center - Ona FL

The use of sunnhemp as forage in Florida

Joe Vendramini
Forage Specialist

Introduction



Objectives

- The objective of this study was to evaluate herbage accumulation (HA), nutritive value, N fixation, nematode reduction, and livestock intake of different cultivars of sunnhemp in South Florida

Treatments

- Treatments were the factorial arrangement of two harvest periods (60-d after seeding or flowering) and four sunnhemp cultivars, 'AU Golden', 'Blue Leaf', 'Crescent Sun', and 'Ubon', distributed in a randomized complete block design with four replicates.

Treatments

- Plot size was 4.5 x 4.5 m with a 2.0-m alley between plots. Plots were seeded with 28 kg seed ha⁻¹ in a prepared seedbed in March 2016

Treatments

- Forage was harvested at 5-cm stubble height and herbage accumulation (HA) determined. Subsamples were dried at 60°C for 48 h and analyzed for N and in vitro digestible organic matter (IVDOM) concentrations.

Treatments

- Sunnhemp above-ground biomass and reference plants of sorghum [*Sorghum bicolor* (L.) Moench] were simultaneously collected from the same area and analyzed for total N and $\delta^{15}\text{N}$ concentrations using an isotopic ratio mass spectrometer

Treatments

- Soil samples were collected at the start and termination of the experimental period and the root-knot nematode (*Meloidogynes incognita*) population estimated.

Results

Table 1. Herbage production of five cultivars of Sunnhemp harvested 60 days after planting or at flowering.

Cultivar	Harvesting Time		SE
	60 days	Flowering	
AU Golden	2,600bB	4,200cA	600
Blue Leaf	2,400bB	14,206bA	
Crescent Sun	3,400aB	19,200aA	
Ubon	1,300cB	4,300cA	

Means followed by the same lower case letter within column are not different ($P \geq 0.05$)
Means followed by the same upper case letter within row are not different ($P \geq 0.05$)

Results



Results

Table 2. Crude protein (CP) of five cultivars of Sunnhemp harvested 60 days after planting or at flowering.

Cultivar	Harvesting Time		SE
	60 days	Flowering	
	CP (%)		
AU Golden	17.5aA	16.2aA	1.0
Blue Leaf	15.0bA	11.0bB	
Crescent Sun	12.9cA	11.5bA	
Ubon	12.4cA	14.0aA	

Means followed by the same lower case letter within column are not different ($P \geq 0.05$)

Results

Table 3. Total digestible nutrients (TDN) of five cultivars of Sunnhemp harvested 60 days after planting or at flowering.

Cultivar	Harvesting Time		SE
	60 days	Flowering	
	TDN (%)		
AU Golden	48aA	51aA	2.0
Blue Leaf	50aA	37cB	
Crescent Sun	48aA	37cB	
Ubon	48aA	45bA	

Means followed by the same lower case letter within column are not different ($P \geq 0.05$)
 Means followed by the same upper case letter within row are not different ($P \geq 0.05$)

Results

Table 4. Reduction in infestation of *Meloidogyne* root-knot nematode in plots cultivated with five cultivars of Sunnhemp harvested 60 days after planting or at flowering.

Cultivar	Proportion of reduction in nematode count (%)	SE
AU Golden	20c	13
Blue Leaf	72ab	
Crescent Sun	97a	
Ubon	45b	

Means followed by the same lower case letter within column are not different ($P \geq 0.05$).

Results

Table 5. Atmospheric N fixation of five cultivars of Sunnhemp harvested 60 days after planting or at flowering.

Cultivar	Atmospheric N fixation (lb/acre)
AU Golden	67b
Blue Leaf	64b
Crescent Sun	90a
Ubon	40c
SE	12

Means followed by the same lower case letter within column are not different ($P \geq 0.05$).

Feeding Trial



Feeding Trial



Treatments

- Treatments were sunnhemp hay, $\frac{1}{2}$ sunnhemp and $\frac{1}{2}$ bermudagrass hay, or bermudagrass hay in a completely randomized design with 6 replicates

Treatments

- Beef heifers (600 lb bodyweight) were housed individually and fed daily with ad libitum hay of one of the treatments. The adaptation period was 10 days with 7 days of forage refusal collection and 3 days of feces collection.

Treatments

•The sunnhemp cultivar used was “Ubon” and bermudagrass cultivar was “Jiggs”. The hay from both species had similar nutritive value, 12% CP and 51% TDN. Sunnhemp hay was harvested at flowering with approximately 8 weeks regrowth.

Treatments

Table 6. Forage intake of heifers receiving sunnhemp, ½ sunnhemp ½ bermudagrass, or bermudagrass hay.

Treatment	Forage intake (% body weight)	In Vivo DMD (%)
Sunnhemp	1.2b	50b
Sunnhemp/Bermudagrass	1.4ab	54a
Bermudagrass	1.5a	54a
SE	0.1	1.3

Questions?

<http://rrec-ona.ifas.ufl.edu>


