



United States
Department of
Agriculture

National Institute
of Food and
Agriculture



FLORIDA PRODUCTION & MANAGEMENT SYSTEMS

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Current Production Systems

CROPS

Corn-peanut
Corn-carrot-peanut

FORAGES

Hay (Bermuda)
Grazed Pasture (Bermuda)

FORESTS

Longleaf
Loblolly
Slash pine

Management System Summaries

	<u>Crop</u>	<u>Forage</u>	<u>Forests</u>
MS1	<ul style="list-style-type: none"> • Most Efficient irrigation • Lowest fertilization • Rye cover crop 	<ul style="list-style-type: none"> • Lowest fertilization • Lowest number of cuttings (hay) 	<ul style="list-style-type: none"> • No thinning • No fertilization • Longer rotation age • Lower initial planting density
MS2	<ul style="list-style-type: none"> • Efficient irrigation • Medium N rate • Oat cover crop 	<ul style="list-style-type: none"> • Medium fertilization • Medium number of cuttings (hay) 	<ul style="list-style-type: none"> • Thinning • Medium N rate • Medium rotation age
MS3	<ul style="list-style-type: none"> • Least efficient irrigation • Highest fertilization • No cover crops 	<ul style="list-style-type: none"> • Highest fertilization • Most number of cuttings (hay) 	<ul style="list-style-type: none"> • Thinning • Highest N rate • Shortest rotation age

CROPS

CORN, FL

	Management System 1	Management System 2	Management System 3
Tillage	No Tillage	No Tillage	Conventional Tillage
Irrigation Equipment	Soil Moisture Sensors (SMS)	SMS	None
Irrigation Management	Monitor SMS	Monitor SMS	Calendar based
Irrigation Efficiency	85% efficient	80% efficient	70% efficient
Fertility Management	Soil + Tissue Test	Soil Test	None
Fertilizer	1/3 ton Lime, 220 lb N, 100 lb P, 200 lb K Plus potential “leaching rain” addition	2 ton Chicken Litter (applied cover crop before corn) 1/3 ton Lime, 260 lb N, 100 lb P, 200 lb K Plus potential “leaching rain” addition	1/3 ton Lime, 300 lb N, 100 lb P, 200 lb K Plus potential “leaching rain” addition
Custom Spreading	Grid Sample + Variable Lime, P & K	None	None
Fertilizer Application	Custom Lime, P & K Side Dress N	2 applications Spin Spread Lime, P & K 6 applications Pivot N	2 applications Spin Spread Lime, P & K 6 applications Pivot N
Cover Crops	Rye no baling	Oats no baling	None

CROPS

PEANUT, FL

	Management System 1	Management System 2	Management System 3
Tillage	Strip Tillage	Strip Tillage	Conventional Tillage
Vine Residue	Leave on Field	Leave on Field	Leave on Field
Irrigation Equipment	Soil Moisture Sensors (SMS)	SMS	Calendar Based
Irrigation Management	Monitor SMS	Monitor SMS	None
Irrigation Efficiency	85% efficient	80% efficient	70% efficient
Fertilizer Equipment	Custom Hire	Spreader: 3 applications	Spreader: 3 applications
Soil Fertility Management	Soil + Tissue Test	Soil Test	None
Fertilizer	No N ½ ton Lime + ¾ ton Gypsum	200 lb 3-7-28+minors (6 lb N) ½ ton Lime + ¾ ton Gypsum	400 lb 3-7-28+minors (12 lb N) ½ ton Lime + ¾ ton Gypsum
Cover Crops	Rye, no baling	Oats, no baling	None

CROPS

CARROT, FL

	Management System 1	Management System 2	Management System 3
Tillage	Conventional Tillage	Conventional Tillage	Conventional Tillage
Irrigation Equipment	Soil Moisture Sensors (SMS)	SMS	None
Irrigation Management	Monitor SMS	Monitor SMS	Calendar based
Irrigation Efficiency	85% efficient	80% efficient	70% efficient
Fertility Management	Soil + Tissue Test	Soil Test	None
Fertilizer	200 lb N, 40 lb P, 250 lb K 9 split applications.	250 lb , 80 lb P, 350 lb K 9 split applications.	300 lb, 80 lb P, 350 lb K 11 split applications.
Lime	1 ton/ac pre plant	1 ton/ac pre plant	1 ton/ac pre plant

* Cover Crops are not included in carrot production systems

FORAGE

HAY , FL

	Management System 1	Management System 2	Management System 3
Harvest Interval	1 time per year 80% biomass per harvest	6 weeks(4 times per year) 80% biomass per harvest	6 weeks (4 times per year) 80% biomass per harvest
Fertilizer	1 time per year, ammonium nitrate 100 lb N/ac/ year total	3 times per year, ammonium nitrate 80 lb N/ac per application 240 lb N/ac/year total	4 times per year, ammonium nitrate 80 lb N/ac per application 320 lb N/ac/year total
Irrigation	None	None	None

FORAGE

PASTURE, FL

	Management System 1	Management System 2	Management System 3
Stocking Density	1 cow/2 ac	1 cow/2 ac	1 cow/2 ac
Supplemental hay	Bring in 20 lb hay/day/cow in winter	Bring in 20 lb hay/day/cow in winter	Bring in 20 lb hay/day/cow in winter
Fertilizer	1 time per year, ammonium nitrate 60 lb N/ac year total	1 time per year, ammonium nitrate 100 lb N/ac year total	2 times per year, ammonium nitrate 80 lb N/ac per application 160 lb N/ac/year total
Irrigation	None	None	None

All management systems assume:

- 1) Consumption=20 lb/day/cow dry matter; Excretion=12.48 lb/day/cow dry matter
- 2) Trampling= 20 lb/day/cow dry matter while grazing, zero while hay is brought in
- 3) 1 calf/cow/year

FORESTS

SLASH PINE

Slash	Management System 1	Management System 2 Wood	Management System 2 Pine Straw	Management System 3
Nutrient Management	No fertilizer application	1 fertilizer application Year 13: 200 lbs/ac Urea, 75 lbs/acre DAP (March 15th)	1 fertilizer application Year 13: 200 lbs/ac Urea, 75 lbs/acre DAP (March 15th)	2 fertilizer applications Year 3: 125 lbs/acre of DAP (March 15th) Year 13: 200 lbs/ac Urea, 75 lbs/acre DAP (March 15th)
Initial Planting Density	500 trees per acre	550 trees per acre	550 trees per acre	550 trees per acre
Rotation Length	36 years – 35 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	27 years – 26 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	27 years – 26 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	23 years – 22 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow
Thinning	No thinning	1 thinning (Dec 31st of year 12) to 65 ft ² /acre	No thinning	1 thinning (Dec 31st of year 12) to 65 ft ² /acre
Pine Straw Raking	No raking	No raking	90% removed yearly (December 1st) (years 8 to 26)	No raking
Hunting Leases (economic model only)	revenue of \$10 per acre per year	revenue of \$10 per acre per year	revenue of \$10 per acre per year	revenue of \$10 per acre per year
Understory Management (economic model only)	initial weed control and prescribed fire starting at year 10 and every 4 years thereafter	initial weed control only	initial weed control only	initial weed control only

FORESTS

LOBLOLLY PINE

Loblolly	Management System 1	Management System 2	Management System 3
Nutrient Management	No fertilizer application	1 fertilizer application Year 13: 200 lbs/ac Urea, 75 lbs/acre DAP (March 15th)	2 fertilizer applications Year 3: 125 lbs/acre of DAP (March 15th) Year 13: 200 lbs/ac Urea, 75 lbs/acre DAP (March 15th)
Initial Planting Density	500 trees per acre	550 trees per acre	550 trees per acre
Rotation Length	31 years – 30 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	27 years – 26 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	23 years – 22 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow
Thinning	No thinning	1 thinning (Dec 31st of year 12) to 70 ft ² /acre	1 thinning (Dec 31st of year 12) to 70 ft ² /acre
Pine Straw Raking	No raking	No raking	No raking
Hunting Leases (economic model only)	revenue of \$10 per acre per year	revenue of \$10 per acre per year	revenue of \$10 per acre per year
Understory Management (economic model only)	initial weed control and prescribed fire starting at year 10 and every 4 years thereafter	initial weed control only	initial weed control only

FORESTS

LONGLEAF PINE

Longleaf	Management System 1	Management System 2
Nutrient Management	No fertilizer application	1 fertilizer application Year 20: 150 lbs/ac Urea. 50 lbs/acre DAP (March 15th)
Initial Planting Density	500 trees per acre	525 trees per acre
Rotation Length	41 years – 40 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow	39 years – 38 years growth (plant-Jan 1st harvest-Dec 31st) 1 year fallow
Thinning	No thinning	No thinning
Pine Straw Raking	No raking	90% removed yearly (December 1st) (years 10 to 38)
Hunting Leases (economic model only)	revenue of \$10 per acre per year	revenue of \$10 per acre per year
Understory Management (economic model only)	initial weed control and prescribed fire at year 10 and every 4 years thereafter	initial weed control and mid-rotation herbicide application