



Florida Sugarcane Production and Weed Control Strategies

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Everglades Research & Education Center

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UF | **IFAS Extension**
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Outline

-  Sugarcane in Florida
-  Sugarcane production practices
 - Planting to harvesting
-  Common weeds in Florida sugarcane
-  Weed control methods
 - Cultural weed control
 - Mechanical weed control
 - Chemical weed control
 - Commonly used herbicides
 - Application methods

Sugarcane in Florida

- ✿ Sugarcane is cultivated in the Everglades Agricultural Area (EAA) and surrounding region
- ✿ EAA - 700,000 acres of land, organic or muck soils





Sugarcane – main crop



Lettuce



Sod



Rice

Other crops:

Sweet corn, radish, celery, cabbage, green bean

Sugarcane in Florida

- ✿ Cultivated in the Everglades Agricultural Area (EAA) and surrounding region
- ✿ EAA - 700,00 acres of land, organic or muck soils
 - Sugarcane - main crop
 - Vegetables, rice, sod - other crops
- ✿ Four sugarcane mills
 - US Sugar mill
 - Okeelanta sugar mill
 - Osceola sugar mill
 - Sugar Cane Growers Cooperative mill



Sugarcane in Florida

- 🌾 400,093 acres cultivated in Florida in 2020
 - 71% on organic/muck soils
 - 20 to 30% organic matter
 - 29% on sand/mineral soils
 - <20% organic matter
- 🌾 Organic soils - Histosols
- 🌾 Sand soils - Entisols and Spodosols



Sugarcane production practices

- 🌱 Planting season: late August/September to December/early January



Furrows 5 ft apart, 4 - 6 in. deep
Band fertilizer



Seed cane planting

Seed cane covering



Sugarcane production practices

- 🌿 Planting season: late August/September to December/early January
- 🌿 1st year is referred to as **plant cane** and the successive years are **ratoon** crops
- 🌿 Harvest season: October to April/May
 - Mechanical harvesting

Burning prior to harvest



Green cane harvest

Sugarcane production practices

- 🌱 Planting season: late August/September to December/early January
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- 🌱 Harvest season: October to April/May
 - Mechanical harvesting

Crop age	Crop duration	% of total acreage 2020
Plant cane	12 - 14 months	30.2
1 st ratoon	11 months	30.4
2 nd ratoon	10 - 11 months	29.5
3 rd ratoon	10 - 11 months	7.6
4 th ratoon or older	8 - 10 months	2.3

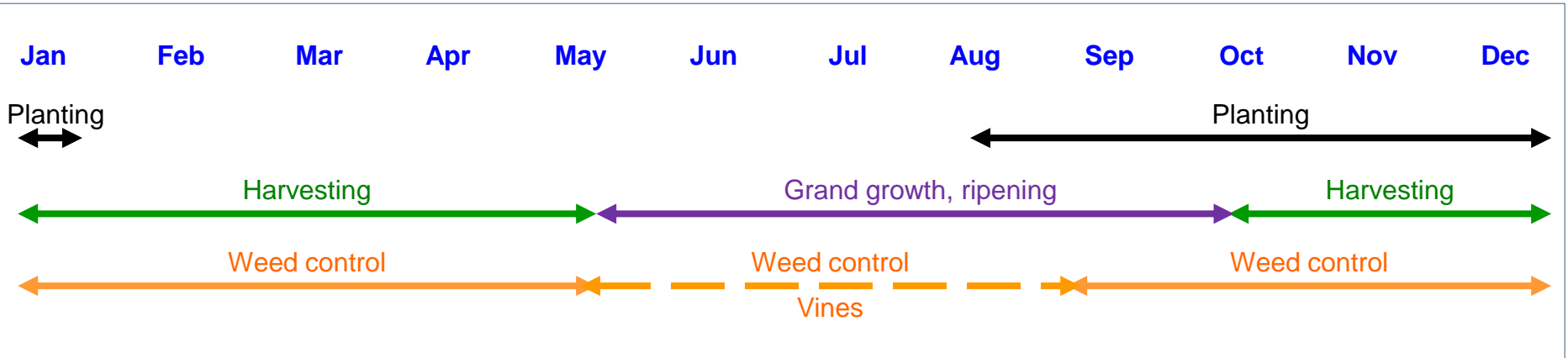
69.8

- 🌱 Typically replanted every 3 to 5 years following fallow period or successive



Flooded fallow sugarcane field

Sugarcane growth and production practices



Tillering



Growth/grand growth



Ripening



Harvesting

Plant cane: Germination establishment
Ratoon: Regrowth



Weeds in Florida sugarcane

Burning fields prior to harvest



Limited to no straw



Small seeded grasses and broadleaf weeds are the most common and problematic

Common weed species

Grass & grass-like weeds

- Fall panicum*
- Goosegrass
- Bermudagrass*
- Elephantgrass
- Yellow and purple nutsedge*



Broadleaf weeds

- Common lambsquarters*
- Amaranth species*
- Common ragweed*
- Common purslane
- American black nightshade





Fall panicum

Weed control

- 🌿 Major cost associated with sugarcane production in Florida
- 🌿 Weeds can reduce sugarcane yields by 60% or more
- 🌿 Weed control is most critical early in the season prior to sugarcane canopy closure over the row middles

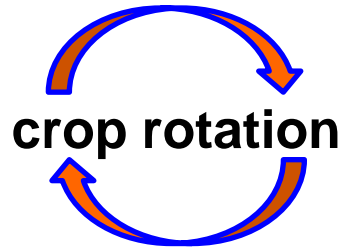


Sugarcane canopy closure

Weed control

- 🌿 Major cost associated with sugarcane production
- 🌿 Weeds can reduce sugarcane yields by 60% or more
- 🌿 Weed control is most critical early in the season prior to sugarcane canopy closure over the row middles
- 🌿 Weeds that mature and produce seed become
 - Source of re-infestation in subsequent years
- 🌿 Weed control
 - Cultural
 - Mechanical
 - Chemical

Weed control: cultural



50,000 acres of fallow land

Weed control: mechanical



Plant cane



Ratoon cane

Weed control: chemical

- Main method of weed control
- Herbicides applied preemergence, postemergence, post-directed
- Two to three applications
- Accurate herbicide application timing and proper calibration of application equipment are extremely important to maximize weed control and herbicide selectivity



Spray Rodeo

Preemergence herbicides



Atrazine, metribuzin, pendimethalin, S-metolachlor + atrazine + mesotrione

Postemergence herbicides: broadleaves



Atrazine, metribuzin, ametryn, S-metolachlor + atrazine + mesotrione, mesotrione, 2,4-D amine, dicamba, topramezone

Postemergence herbicides: grasses & sedges



Ametryn, S-metolachlor + atrazine + mesotrione, topramezone, asulam, trifloxysulfuron, halosulfuron

Postemergence herbicides: fallow



Glyphosate for bermudagrass control

Herbicide application



Mixing unit

Herbicide application



Source of water: canals

Herbicide application



Ground

Herbicide application




Aerial



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