

Using Sugarcane as a Windbreak

Les Baucum – Multi County Extension Agent II

Sugarcane, Forage Crops

Hendry County Cooperative Extension Office



UNIVERSITY OF
FLORIDA

IFAS EXTENSION

Windbreaks For Citrus Workshop

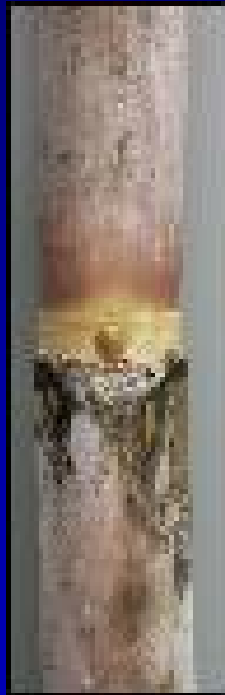


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Citrus Research and Education Center
Lake Alfred, Florida
April 19, 2006

Commercial Sugarcane Production

- Sugarcane is vegetatively propagated



Commercial Sugarcane Production

- Field is furrowed 4-6" deep



Furrowing (making rows)



Fertilizing (before planting)

- Banding reduces fertilizer use

Commercial Sugarcane Production

Cane is then laid in the furrow



➤ Can be “Hand Planted” or “Machine Planted”

Machine Planting Sugarcane

- Sugarcane stalks are cut into “billets” that are about 10 to 18 inches long by a mechanical harvester.
- These Billets are loaded into field wagons



Machine Planting Sugarcane



➤ Loading a mechanical planter with seed cane billets

Machine planting requires more seed cane, up to 8-10 tons of seed cane to plant 1 acre.



Hand Planting Sugarcane



- Whole stalk sugarcane is cut and piled for seed
- Cane piles are loaded onto wagons using a grab loader



Hand Planting Sugarcane



➤ An 8-man crew plants about 40 acres per day

➤ Hand planting takes about 4 tons of seed cane to plant 1 acre



Covering Sugarcane after Planting



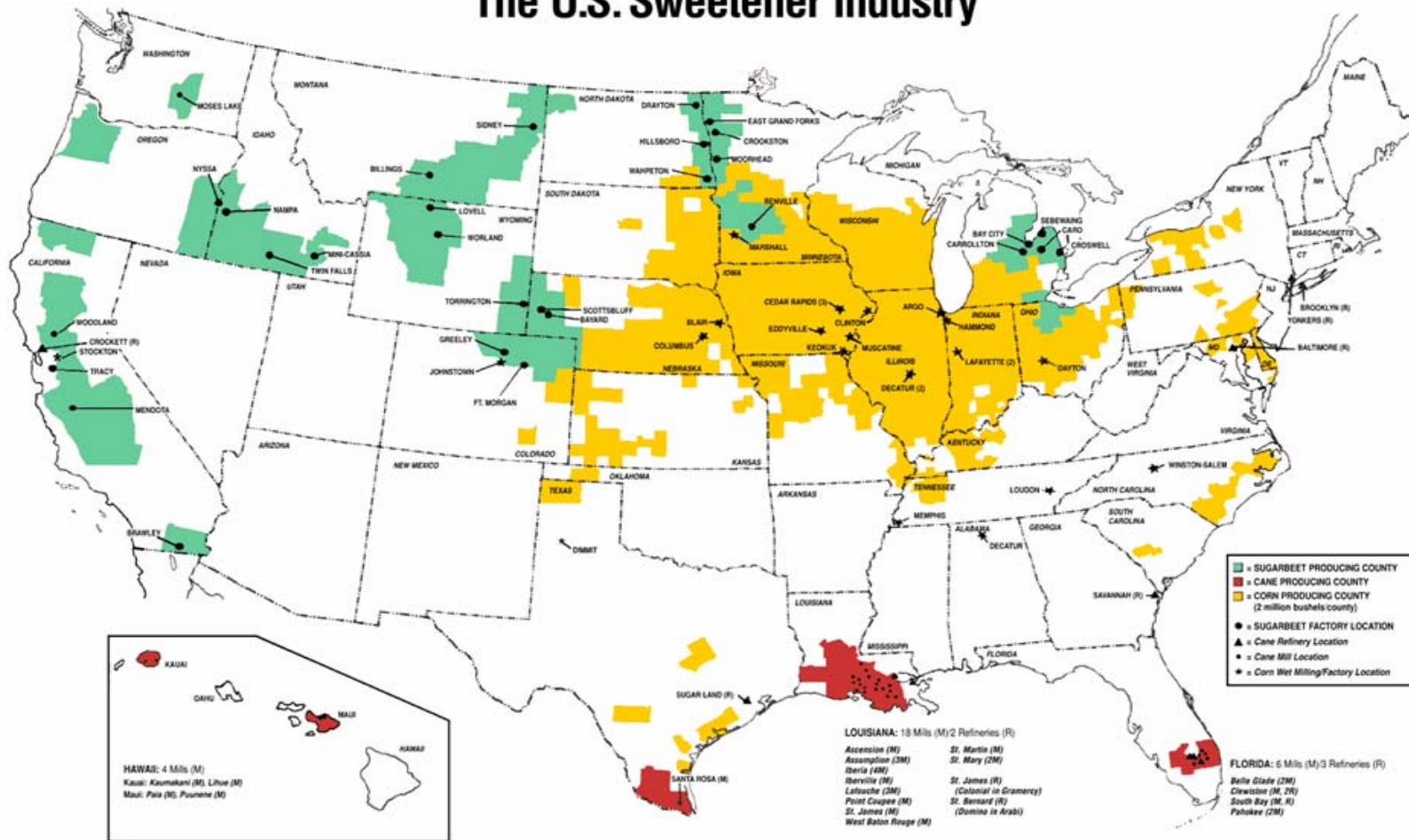
Sugarcane Calendar

- After planting, the sugarcane crop grows steadily for 12 to 15 months before harvesting
- Planting season:
 - ▶ Sep thru Dec
- Harvest season:
 - ▶ Oct thru mid-Apr



Can we grow sugarcane in our part of the state?

The U.S. Sweetener Industry



American Sugar Alliance, 2111 Wilson Blvd., Suite 600, Arlington, VA 22201
Phone: 703-351-5055 Fax: 703-351-6698 www.sugaralliance.org

June 2000

Can sugarcane be an effective windbreak?



Can sugarcane be an effective windbreak?

Vegetable Growers in Southwest Florida have been using sugarcane as windbreaks in their vegetable growing operations for several years.



WHY?

- The primary reason vegetable growers use windbreaks is to decrease damage from “**saltation**” (surface movement or “bouncing” of intermediate sized soil particles along the soils surface).
- Other benefits may include a decreased incidence of wind blown pathogens to susceptible crops.



Sugarcane as a Windbreak in Citrus?

Can sugarcane be used as an effective windbreak or as part of an effective windbreak system to help reduce the incidence of citrus canker in our commercial groves?



Sugarcane as a Windbreak in Citrus?

Possible situations where sugarcane might be useful in a windbreak system:

1. New Plantings without an established windbreak



Sugarcane as a Windbreak in Citrus?

Possible situations where sugarcane might be useful in a windbreak system:

2. As part of a two-tier windbreak system



Pros and Cons

PROS:

- Fast Growing
- Dense Stands
- Ratoons Back
- Economics
- Secondary Uses

CONS:

- Start-up Cost
- Maintenance Cost
- Space
- Limited Varieties
- Availability of seed cane
- We don't know if it will be effective ??

PROS

- Sugarcane is fast growing (up to 1 inch per day in its "Grand Growth Period")



- Sugarcane produces very dense stands

Pros

➤ Sugarcane is a ratoon crop:

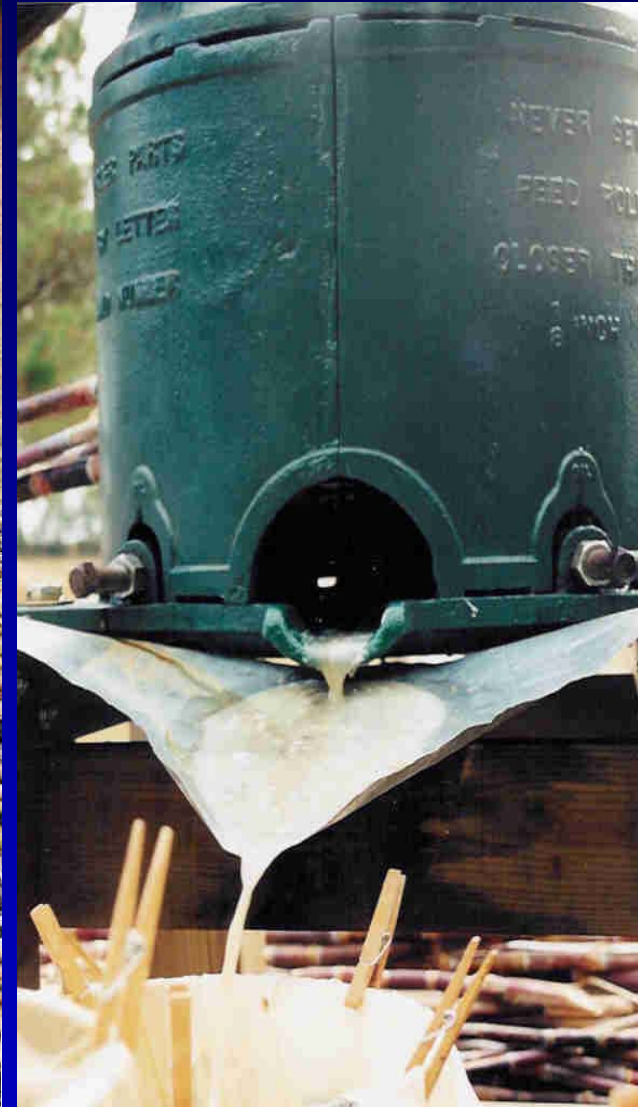
- ▶ After harvest, the plant re-grows from the stubble and makes a new crop

- ▶ Under ideal conditions this process can produce a number of annual crops before re-planting is required



Pros

- Economics
 1. After an initial start-up cost, sugarcane should be fairly economical to maintain
- Possible Secondary Uses
 1. Cane Syrup
 2. Cattle Feed
 3. Road-side stands
 4. ??



Cons

➤ Start up costs

➤ Seed Cane - \$40.00/ton

➤ Planting Rate – 4 tons/acre
(double lap; rows on 5' centers)
= 1.65 miles of row

➤ Planting Cost

➤ Current “Contractor”
rate is \$135/acre



Total cost of Planting 1 acre =
4 tons seed cane @ \$40/ton +
Cost of planting @ \$135/acre
+ Fertilizer + Pesticides = ~
\$350/acre or 1.65 miles of row

CONS

Can we reduce these start up costs?

- Plant propagation plots
- Buy enough seed to plant a one acre plot and use the “seed” off of this crop to plant windbreaks the following year. Should be enough to plant 6-8 acres.



- Plant “single lap” instead of “double lap”



CONS

- Maintenance Cost
 1. Fertilizer
 2. Weed Control
 3. Mowing/Harvesting



Cons

➤Space – When the main objective is to grow as many lb. Solids to the acre as possible there is not much room left to plant sugarcane.

Option 1:

In young trees you might plant sugarcane between designated rows to act as a temporary windbreak.



Option 2:

Plant on the very edge of existing ditch banks.



Cons

Option 3:



- Plant along the edge of existing windbreaks to serve as a two tiered windbreak.
- Would need to get close enough to existing permanent windbreak so as not to be in the way.
- Would probably be easier to establish on newly planted windbreaks than established windbreaks.

Cons

➤ Commercial varieties are mostly adapted to South Florida soils and growing conditions.

Options:

Commercial Varieties

➤ CP78-1628



➤ CP89-2143



Varieties

➤ “Syrup Varieties”

POJ-2878

Ribbon Cane



➤ Other Options

➤ Breeding programs in LA have begun selecting for varieties based on their potential to produce biomass. (L79-1002, Ho00-0961, US01-0012)



Georgia Yellow Gal

Other Potential Problems

➤ Skippy Stands



➤ Lodging



Other Things To Know

How far apart should I plant rows of sugarcane for windbreak purposes?

- Vegetable Growers normally plant rows ~ 100-110' apart
- Experts say we get windbreak protection for a distance of 10 X height
 - ✓ So how tall will my sugarcane be? Best estimate ~ 6-8' (commercial sugarcane can reach heights of 15')
 - ✓ $8 \times 10 = 80'$

Other Things To Know

When I harvest/mow my sugarcane, will I lose my windbreak?

➤ Yes, temporarily

✓ If using in small trees as a primary windbreak you might consider harvesting/mowing on a split schedule (every other row) on a February/March & July/August schedule.

✓ If part of a two-tier system probably harvest in December.

Other Things To Know

How often will I have to replant?

✓ Unless you pull up the “stool” or root of the plant when you are harvesting/mowing you will not have to replant.

Will I have to Irrigate?

✓ Yes

Getting Started

How will I make the furrows to plant my cane in?

- ✓ Mount a single furrowing plow on a tool bar to make single furrows ~ 6 inches deep (plow will have to be mounted on the end of the tool bar if you want to plant right on the edge of your ditches.

How Will I cover my plant cane?

- ✓ Mount a set of disks on the tool bar to throw the soil back over the seed pieces.

Will I need to use a soil insecticide at planting?

- ✓ Probably not

Getting Started

Where can I find sugarcane to plant?

✓ Contact your local County Extension Agent

OR

Les Baucum

Extension Agent II / Multi-County, Sugarcane

Hendry County Extension Office

(863) 674-4092

Will hurricanes destroy my sugarcane windbreak?

Hurricane Wilma



Hurricane Wilma



Hurricane Wilma



OTHER QUESTIONS ?

