WHOLESTALK HARVESTING IN LOUISIANA

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Growing conditions in Louisiana

January - February
(a) Cold - Freezing at night
(b) Wet - soil soaked for several weeks
(c) Above ground growth is dead

The cane survives because cultural practices support these conditions.

(a) High ridges of 200 to 300 mm
(b) Row spacing 1.7 m
(c) Well covered with soil

In early spring the cane starts growing again. Herbicides and fertiliser are applied in May and June. The crop is well underway with major growth occurring in June, July and August.

Because above ground cane does not survive the winter, planting occurs before the fall harvest. The cane is planted wholestalk either by hand or using mechanical planters which is effect rake the cane stalks out of the seed-wagon into open furrows.

Harvest time is from the beginning of October to the end of December. The cane yields 60 to 115 tons/ha with the average being close to 75 tons/ha. Millable stalks range from 2 to 3 meters long, and the crop ranges from erect to recumbent. Severely lodged cane is not experienced in Louisiana because of the short growing season. Weather conditions can be particularly severe during harvest. rains and severe muddy conditions are not uncommon.

Harvesting machinery

Louisiana machinery requirements have to address three major concerns:

1. High capacity harvesting is required since the time for the harvest is limited by the approaching cold weather.

2. Minimum field losses (labour is not available for scrapping).

3. Reduction in extraneous material, particularly soil.

The system of mechanisation which has evolved to address these concerns is a wholestalk cutting and loading system.

For cutting the most popular machines are the Broussard Model 223 two-row harvester and the Cameco Model S32 two-row harvester. These machines achieve cutting rates of 2 hectares per hour which translates into more than 1 500 tons in an 8 hour day. The two row cutter enters the field on two rows of cane; cuts, tops and piles them on top of each other directly behind the machine. It then skips two rows and cuts another 2
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rows. The pattern is repeated across the field. The machine ten cuts the standing two rows; piling one row on each of the adjacent two-row windrows. By repeating this pattern the field is cut with four rows of cane piled on one windrow. The cane is burned on the ground after cutting.

The high ridges provide two major advantages:

1. recumbent cane can be gathered up because the pick-up mechanism can get under the cane
2. they provide steerage for the machine when the operator cannot see where he is going.

Along with harvester development, loader development has kept pace with the need for:

High capacity
Reduced losses
Clean cane

The development of loaders which straddle two rows such as the Broussard Model 3500 and the Cameco 2000 series have sufficient reach so that the transport is on the row away from the cane windrow. The stability of these machine allows larger capacity grabs and the wider machine allows for special pilers which reduce losses and deliver cleaner cane.

In summary
Machinery development in Louisiana has taken into consideration the special cultural practices and cane conditions at harvest time and has produced machinery which addresses the three concerns of:

1. High capacity
   Cutting machines which average over 150 tons per hour and loading machines which average 50 to 100 tons per hour.

2. Minimum field losses
   Harvesting and loading machines have resulted in improvements in cane recovery of up to 12 tons per hectare in severe conditions.

3. Reduction in extraneous matter
   Tests over the last two years have shown significant reductions in the quantity of soil included with the cane. More extensive tests and comparisons will be conducted in the future.