

SUMMARY

The first part of the work reports the results of a randomised weeding experiment, which was laid out in plant cane of the cultivar B41227. The objects of the experiment were to determine:

- (a) the effects of late weed infestations on the sugar content and yield of cane,
- (c) when during the early growth of cane, is weed competition most detrimental.

Conclusions were based on the yields of cane and sugar from the individual plots.

The results indicated that weed infestations which began at 3, 6 and 9 weeks after planting significantly reduced the yield of cane or sugar, while one starting at 12 weeks caused a reduction that was not significant. It was found that apparently, the most important period for controlling weeds in sugar cane was from the time the primary shoots just started to appear above ground, to the beginning of the phase of "stalk elongation" (in the present case this corresponded to a period extending from the 3rd to the 12th week after planting).

A brief review of previous work on the effects of weed competition on the sugar content and yield of cane is included.

The second part deals with a trial laid out in plant cane of the cultivar B37172. The object was to determine the effects of diuron, simazine, atrazine and atratone on its sugar content and yield. Diuron was used singly and in combination with 2,4-D amine. The triazines were used singly and in combination with diuron and/or 2,4-D amine. The herbicides and herbicidal mixtures were also evaluated for post-emergence* weed control. Conclusions were based on

* refers to crop only.

observations, weed counts and fresh weight of weeds, and at harvest, on the yields of cane and sugar from the individual plots.

None of the treatments used significantly reduced the yield of cane or sugar below that of the control. As for the control of weeds, observations, weed counts and fresh weight of weeds indicated that diuron (3 lbs. a.i. per ac.), diuron (3 lbs. a.i. per ac.) + 2,4-D amine (0.6 lb. a.e. per ac.) and atrazine (2 lbs a.i. per ac.) + diuron (1 lb. a.i. per ac.) were the best treatments. They gave satisfactory weed control for over 3 months.

The introductory part deals in the main with reports on the present status of the above mentioned herbicides in the sugar industry.

(a) Sampling of cane.

(a) Determination of tons cane : ton sugar ratio.

1. Experiment.

(a) Cultivation operations.

(b) Design and layout.

(c) Weed surveys.

(d) Hand-weeding.

(e) Results and Observations.

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References

Appendix

(a) Soil data.

(b) Monthly rainfall.

(c) Photographs of the scale used for weighing cane.

(d) Field plan.

(e) Photographs to show the effect of weed competition on cane growth.

(f) Analysis of field data (tons cane per acre) of weeding experiment.