

SOME OBSERVATIONS IN CONNECTION WITH CANE GROWING

By H. L. GARLAND.

I have been asked to write on the above subject and I hope what I have to say will be interesting and at the same time constructive to the growing of sugarcane in this country.

There are three main principles to be carried out and they are:

- (1) Trashing or the conservation of trash, mulching, etc.
- (2) Fertilizing every acre that is cut each year.
- (3) Green manuring.

There has been a lot written and said about the first subject. This practice only started about three years ago and, to say the least of it, it has been revolutionary in agricultural practice in this country. Leaving a blanket of trash and applying the fertilizer on top of the trash was first mooted by the Experiment Station and I remember telling the then Director that some of his staff should be in the Lunatic Asylum. However, after seeing a practical demonstration and the consequent result, I was convinced it was the right method and from then we changed the policy of parting trash and cultivating to the "blanketing of trash". This has saved us enormously in cost, as you can imagine the labour entailed in pulling the trash into alternate lines and the number of men and animals used in cultivating over a large area. The results of this method have been fully justified and in the last three dry seasons we have experienced, the "blanketing of trash" has kept what little moisture we have had in the ground and not dried up, as when the trash is removed and the ground exposed.

This trash is invaluable to us in this country, with high winds and low rainfall. Enough cannot be said on this subject and perhaps one could go on indefinitely, but I would just like to quote Mr. W. F. C. Jex's article in the October issue of the South African Sugar Journal on trash blanketing and fertilizing which explains the advantages, with which I fully agree.

I might illustrate further the value of trashing when I tell you that my company averaged 34.5 tons of cane per acre on a crop of over 330,000 tons of cane and this after three years of drought or low rainfall—for instance, in 1950 we had only 1½ in. of rain in five months between April and September and in 1951 only 2 in. in the same period. In my opinion we would never have averaged this figure if it had not been for this invaluable covering of trash.

Again to illustrate my point of the value of trash, we planted a record area of 4,000 acres this past season and we have never had a better standard of plant—apart from the favourable season this is largely due to trash left on the ratoons as the labour and cultivators which were previously employed on parting trash weeding and cultivating the ratoons is now concentrated on the plant cane with the result that the plants are kept free of weeds and do not get a setback in any way. (I can safely say that due largely to trash mulching our fields today are in a better state of tilth than they were 35 years ago.)

Fertilizing Every Acre that is Cut Each Year.

When I went to the Sugar Conference in Puerto Rico over 20 years ago, the company's fertilizer bill did not reach £4,000 a year, as the policy in those days was to fertilize plant cane only and perhaps a small area of first ratoons. After my visit to Puerto Rico I realized the value of fertilizing and on my return our fertilizer bill jumped to over £20,000 and today it is well over £40,000.

While on this important subject of fertilizing I would like to sound a note of warning in regard to the amount of fertilizer to be applied. In the sugar belt, where we have a limited rainfall and experience severe droughts, over-fertilizing can have a depressing effect, especially in the case of straight out nitrogen such as sulphate of ammonia, in dry areas.

There is an economical limit in the amount of fertilizer to be applied and this cannot be determined solely by soil and leaf analysis. Soil and leaf analysis can be a guide, but must be worked in conjunction with field trials and by practical experience. No man can tell just by soil and leaf analysis, especially in this country where we have prolonged dry spells, exactly how much fertilizer to apply—it can only be a guide. There is a danger that planters will over apply, especially in the dry areas.

I have been in close touch with our Experiment Station since its inception over 24 years ago and they have given me valuable assistance over this period in advising and guiding me in our fertilizer policy.

Green Manuring.

In my opinion after a field has been under a crop of cane for eight years it is essential to give it a rest or fallow and put it under green manure crop.

We have practised in the past "short fallowing," i.e. cutting and planting a field the same year without a green crop. This may do in a country with a high rainfall such as Hawaii but here, with our limited rainfall, it is important to plough in a green crop which all adds to the conservation of moisture.

Mr. C. H. O. Pearson, in his papers read at the annual Technologists meeting last year, raised some very contentious subjects and among these was the question of the value of green manuring. Where he maintained that the value of the green manure was lost after a certain period when ploughed in—

this is a new line of thought, but I cannot subscribe to this theory in this country with its low rainfall.

The best green crop to grow is sunnhemp; if that is not obtainable then velvet Somerset runner beans. Various other beans have been tried over a period of years but without success. Lupins have been tried recently, but only with varying success.

There are many other equally important items in the growing of sugarcane on which one could write a book—but for the purpose of this paper I have stuck to the three main principles, which is sufficient to raise an argument.