

*DISCUSSIONS*

*Mr. Williams :*

What are the morphological characteristics of the sweet potato cultivar used in your experiments, on frequency of vine turning in relation to yield?

*Mr. MacDonald :*

In this trial we prevented rooting at the nodes. We did not actually turn them, we just lifted them from the ground.

*Mr. Williams :*

In this particular cultivar what is the vine tuber ratio?

*Mr. MacDonald :*

The vine tuber ratio of this one is about 1 to 1, 1.2 to 1. You would get about 2 lbs of tubers underneath the ground and about 2 to 3 lbs of vines above the ground. It creeps reasonably prolificly and you would find it growing to about 4 to 5 feet, and it roots reasonably freely at the nodes.

*Mr. Williams :*

Did you harvest at different periods of maturity? If so, what harvest dates did you use?

*Mr. MacDonald :*

They were all harvested at the same period, which was in this case, 5½ to 6 months.

*Mr. Williams :*

Did you grade your final yield? If so, what was the relationship of grade to time of maturity?

*Mr. MacDonald :*

These were all graded on saleable tubers, not less than 6 ozs. in weight each. Anything that was not saleable was discarded, and the difference in yield between the control and the one that was disturbed weekly, was of the order of a depression of 50 percent in yield of saleable tubers.

*Mr. Williams :*

On what soil type or types did you carry out your experiments?

*Mr. MacDonald :*

It was a clay loam.

*Mr. Williams :*

How would you characterise the growing season in your experiment in relation to rainfall, and other climatic conditions, and with season?

*Mr. MacDonald :*

In general, we are very fortunate with rainfall in Uganda. We have a bimodal rainfall which is split up into 2 seasons about 25 inches in each season, and distribution in general is good. This experiment was conducted in a field of 13 acres, of which I took over part. It had been planted early and I harvested mine at the same time as the farm.

*Mr. Williams :*

On how many trials did you base your conclusions?

*Mr. MacDonald :*

One.

*Mr. Williams :*

I would like to make a comment. Mr. Haynes and I are investigating just this thing here at St. Augustine and in the islands, but because of indications from the work of Haynes, Walter and Spence, that at least a three way interaction between type of cultivar, time to harvest and grade of tuber at harvest may exist, we found it necessary to look into the problem of the effect of nodal rooting on tuber yield against a broader agronomic background. We recommended that this sort of approach should be followed in such investigations.

*Dr. Bolhuis :*

To my astonishment I heard Dr. Macdonald say that in Uganda sometimes even if cassava wouldn't grow they still grow sweet potatoes. In our experience we find the reverse, that where sweet potatoes wouldn't grow any more you can get relative yield of cassava. What does he think about this?

*Mr. MacDonald :*

This is defined in terms of altitude. If you are thinking in terms of rainfall, as you go further north into the drier areas then you find cassava coming in and sweet potato going out, but if you go up, in terms of altitude, then it's the sweet potato that would go to the higher altitude than the cassava. Possibly 1000 to 1500 feet high up.

*Dr. Jones :*

I want to be honest about this. It is always possible to frame a comment like a question. It is a comment on this apparent constant composition of cropping in Uganda. I do not really share your confidence in the statistics of area plants, tabled food crops in Uganda, and I suggest that what you got is a statistical artifact in this thing that you presented at 0.3 percent constantly which arises from the way in which the statistics are sampled. That is, the statistics are essentially put together, on the basis of estimates of informed persons of what the area is in the district, rather than on the basis of sample surveys. It is quite remarkable, and in looking at what you had on the board, you would see that sometimes in the late forties, it shifted up to a new level and stayed there, which suggested an improvement in statistical procedures at that point. Now the question is, is it so?

*Mr. MacDonald :*

In some respects you might be right, in that there are inspired 'gestimates', but the figures that I have worked on are in actual fact, honest attempts at sampling the acreage within Uganda. They were done on selected metelus of which a square mile was taken. One, Pergumbolo which is a small county, the actual physical acreages within each of the selected metelas measured and then an acreage per taxpayer obtained which was then multiplied up by the number of taxpayers within Pergumbolo. I agree that there are errors in this and there are some problems with regard to the standard of measurement, but it was in actual fact, a statistical and accepted way of assessing the acreage. It was not an estimate by the Agricultural Officer after a trip round district in his car.

*Dr. Edwards :*

I thought I understood Mr. Macdonald as saying that in Uganda, in a recent year, the surplus of calorie supplies over needs, was about 100 per cent and the other trends he suggested would seem to suggest that this kind of excess was fairly normal. Is there any explanation of this? There seems to be a tremendous reserve to carry. Are there very substantial exports from the country? It is really very puzzling, and would seem to cast doubts on the absolute reliability of the figures.

*Mr. MacDonald :*

There are several explanations for this. The first one is, of course, that the

tremendous amount of food grown, about 75 percent, is in fact a perishable commodity, which cannot be easily stored. Less than 25 percent of the food which is grown is a cereal, or in a form which can be stored, and if you are growing a perishable commodity, then you are at the mercy of the weather, and this means that you cannot take an average season and grow sufficient acreage which would provide you with sufficient food in the average year, because this would mean 50 percent of the year in any ten-year period, you would be short of food and then 50 percent of the time you would have too much.

The other thing is that you are in a subsistence economy area where the family has to be independent for its own food supplies, and this of necessity encourages over production. This stuff, in actual fact, is not wasted. In many cases it is converted into beer, and the consumption of beer in Uganda is quite fantastic, particularly in places like Teso where they have a storable gain. You will therefore find it reasonable to accept the fact that the homicide rate of Uganda, which is the highest in the world is associated with the consumption of beer.