DISCUSSION 4

Dr. Rogers :

I would like to ask you, and perhaps all of the others who have been here, this question. Do you have any difficulty in getting a suitable arrangement for selfing these plants ? It has been my experience, that you do not have inflorescence on the plants, where the female and the male, are open at the same time. How do you go about using inbreeding as a method in the improvement of cassava and how ?

Dr. Magoon :

As regards flowering of cassava, it may be pointed out that a good number of cassava types have never been known to flower. Sterility is also common in this crop which has been propagated by vegetative means for thousands of years. As a result of screening, a varying degree of male sterility has been recorded among the available cassava collection at our Institute and as stated, previously, thirty five types have been found to be completely male sterile. Attempts are underway to study the physiology of flowering and on the whole, it is aimed at

(1) synochronization of flowering in varieties to be hybridized,
(2) making non-flowering and shy flowering varieties to bloom for crossing purposes and also facilitating crossing, if possible during the whole year around.

We have also in our cassava collection several types which flower normally and the normal plants being monoecious, the female flowers at the base open first and the male flowers at the top do not mature until 8 to 10 days later. Selfing up to 2 to 3 generations can be managed somehow in the face of practical difficulties such as variable time of flowering and difference in time of maturing of male and female flowers in a plant, rapid loss of yield, poor flowering and vigour, pollen sterility etc. In order to do further selfing, vegetative multiplication needs to be interpolated and no less than six generations of selfing may be required to obtain reasonable homozygous lines in the extremely heterozygous indigenous cassava material under study. The plants become weaker and weaker and flowering becomes scarce after the fourth generation of selfing. Based on the inbreeding work done so far and in view of the important points raised in the text of the paper against evolving homozygous lines in cassava, for the purpose of exploiting hybrid vigour in this crop, it can be emphasised that pure line crossing in cassava could not prove to be useful as a means for producing improved strains in this crop.

Dr. Rogers :

May I ask a question on your work. I am, first of all, quite interested to note, that you picked up another character for which I am very glad you did, namely, the lenticels on the surfaces of the rough rooted group. I do not know how I happened to miss that but I am glad that you found it.

Dr. Montoya :

I would like to mention, that in some cases, in Latin America, it is very difficult to find a reference on publications in relation to manioc and cassava and I would like to ask all persons engaged in cassava research to interchange publications and planting materials.

Dr. Bolhuis :

Dr. Rogers asked about the flowering of cassava. When plants are grown at low altitudes in Bogor Java, they do not flower but produce very tall plants. However, when they are grown at an altitude of 3,000 feet they flower profusely and pollinations could be made without the aid of ladders.

Dr. Rogers :

I think that you can get around this far easier in another direction if you like. Purely by accident, I discovered that if you let cattle into your experimental plot, the chewing off of the apex of the bud has a considerable effect towards the flowering.