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( I C F C S )

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## A PLAN FOR REGIONAL TESTING

### PIGEON PEA VARIETIES

by

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The adoption of improved crop varieties and technology at the farm level is frequently slow and in many instances, limited to a small percentage of the overall area devoted to the crop. This is partly due to the lack of faith on the part of farmers in the yield achievements of experimental farms. Their suspicions can be allayed if the potential of new varieties or technologies could be demonstrated at farm level, since having observed improved performance at close range, they are less likely to reject them. The U.W.I. Grain Legume Programme has embarked on such a programme in Trinidad using the new pigeon pea varieties for year round row cropping. The envisaged regional testing project is, in principal, the extension of the Trinidad approach so as to make available to farmers in the other regions the benefits of year round pigeon pea production.

Prior to undertaking demonstrations on farms, it will be necessary to ascertain the suitability of the new varieties and technology in the different regions. Therefore, the first objective in this project is to test the flowering and production potential in experimental stations at different latitudes. The new varieties may not be qualitative short day plants, hence their performance may differ according to day length and may be also affected by other factors.

It is proposed that this evaluation be conducted by planting at four (4) times a year at intervals of 3 months. The 2 varieties and a local commercial variety can be grown in unreplicated plots consisting of 200 to 300 plants of each variety spaced 1' x 9" for the new varieties and the locally recommended spacing for the local variety. Data to be collected are listed in Appendix 1.

A number of potentially day neutral lines have been developed that do not possess outstanding agronomic characters but which could be suitable parents for future breeding programmes. As a back up project for the above, as soon as sufficient seeds of these are obtained, they would be made available.

Smaller plots, 110 to 150 plants, are proposed for this latter material and 3 plantings per year. The planting distance and data to be taken could be similar to those indicated earlier. It might be possible to identify materials which have year round flowering quality over a wider geographical range than the present ones.

The second objective is to test at farm levels the varieties found suitable in the initial test. The procedure may be as follows :

(a) Small Farms (less than 4 ha.)

(i) Identify approximately 15 small farmers willing to cooperate, to include those already growing (old) pigeon peas and those having cropping systems not including (old) pigeon peas. Farms on both flat land and on hill sides could be covered as well as farmers growing peas at different times of the year.

(ii) Note farmers intended cropping programme without (new) pigeon peas.

(iii) Make inventory of farm resources (land, family labour, capital, etc.) in order to describe the constraints within which the farmer operates.

(iv) Record farmers' attitudes, ideas, suggestions, etc. about (new) pigeon peas - before, during and after the crop is grown.

(v) Record inputs (labour, materials, etc.) and output of each farm enterprise - attempting to assess the effect, if any, of the new enterprise on other enterprises. Detailed records are necessary in order to properly understand the internal dynamics of the farm operations - weekly visits to the cooperating farms are envisaged. The detailed recording requires that each farm will be a case study in itself.

(vi) Evaluation will involve both examination of individual case studies, in which the performance of pigeon peas is examined in the context of the specific farm environment, as well as simple statistical techniques for farm modelling.

(vii) Note, in particular, changes made in production practices for (new) pigeon peas and in the farm cropping programme.

(b) Medium Farms (4 - 20 ha.)

(i) Identify farmers willing to cooperate. As many farmers as are willing to cooperate up to a maximum of approximately 20 can be accommodated. The assistance given to these farmers could consist of free planting material.

(ii) Recording of inputs and output on these farms will concentrate on the pigeon pea enterprise, rather than on the place of pigeon peas in the whole farm system since these farms appear to be much more flexible in their organisation than the small, more traditional farms. But other enterprises can be recorded for comparison. It is likely that some farmers will be able and willing to participate in the recording exercise.

(iii) Evaluation will include assessment of the technical and economic performance of the crop in relation to soil type, time of year, degree of mechanisation, etc.

Participation in these programmes is invited from Food Crop Scientists in the Caribbean region. Seed will be initially provided by the Grain Legume Programme at the University of the West Indies.

(1)

APPENDIX 1  
PIGEON PEA REGIONAL TEST  
GENERAL NOTES AND OBSERVATIONS ON

STATION NAME AND LOCATION .....  
.....  
COOPERATORS .....  
LATITUDE.....LONGITUDE.....ALTITUDE.....  
DATE OF PLANTING .....  
DATE OF EMERGENCE .....  
DATE OF THINNING .....  
RAINFALL (MM)    JAN.....MAY.....SEPT.....  
                  FEB.....JUNE.....OCT.....  
                  MARCH.....JULY.....NOV.....  
                  APRIL.....AUG.....DEC.....  
PLOT SIZE .....  
SPACING .....  
DATE OF HARVEST .....  
PEST AND DISEASE NOTES .....  
.....  
.....  
.....  
.....  
INSECTICIDE APPLIED -  
DATE .....KIND.....RATE.....

