THE SELECTION OF PULSES IN SURINAME

1. INTRODUCTION

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ABSTRACT

The consumption of pulses in Suriname amounts to an annual value of about Sf 600,000, of which two thirds represent the value of importations. There is a long standing wish to reduce imports by increasing the production and consumption of local products.

The article describes the many previous attempts to establish reliable methods of cultivation, which failed because of unpredictable rainfall and the very heavy clay soil which remains waterlogged for a long time after a shower.

A method introduced recently, viz. of planting pulses on ridges, has shown promising results since it avoids the difficulties of soil management. However, this method used in several experiments, needs to be adapted to the agricultural conditions of the small-holders. If the majority of rice farmers would successfully adopt this method, production could be raised to supersede the local demand by many times so that the product could be sold abroad. The selection program of pulses should then proceed as follows:

1. to ascertain which pulses are in constant demand by the world market,
2. to introduce as many species and varieties of these crops as possible and to try them under the local conditions of climate and soil,
3. to start a breeding program with the best adapted crops and varieties.

INTRODUCTION

The present article is the first of a series on the selection of pulses in Suriname, published in the Dutch language in "De Surinaamse Landbouw". Following articles will deal with Arachis hypogaea, Glycine max, Vigna sinensis, Phaseolus radiatus, other pulses and new crops. The writer hopes that the experience gained with the selection of local pulses will be of value for the proposed breeding program of new crops.
ECONOMIC SIGNIFICANCE OF PULSES IN SURINAME

Pulses are an important item in the food of the population of Suriname, although, if the diet of every inhabitant would contain sufficient pulse-protein, the consumption would increase. Annually the value of consumption amounts to approximately $600,000, of which $400,000 represent imported products. The feeding habits of the various population groups vary greatly. The creoles and hindustani consume large quantities of imported pulses, that is brown beans and yellow split peas. Brown beans are mixed with rice to a meal. The yellow split peas are prepared as "Dhal", a pulse soup.

The appropriate substitutes for brown beans are varieties of the species *Vigna sinensis*, cow peas, blackeye peas, "botropesie" and "djaripesie", which are all grown in Suriname. The flavour somewhat, but not closely, resembles that of brown beans. Therefore complete substitution would raise objections. For "dhal" the species *Phaseolus radiatus* (mung bean, oerdi, katjang idjoe) can be used to good advantage. The large importation of yellow split peas is due to the small supply of oerdi produced locally. There are very good possibilities of reducing the importation of yellow split peas by increasing production of these substitute products.

Assessed on their present economic importance pulses can in no way be compared with the export crops rice, citrus, cocoa and coffee. Were it not that the culture of pulses held a promising future, as a second crop after rice, the starting of a selection programme for pulses could hardly have been called justified.

In 1956 when I started this program it was not in the least sure whether a method could be developed to grow a reliable second crop. In the first year therefore attention was given to the local pulses which both among small-holders and among consumers were already well-established. Experience was gained in this way both in the methods of cultivation and in selection under the conditions prevailing in Suriname.

With the introduction of cultivation on ridges the chances of producing reliable crops have been much improved (7) and if a second crop were to be grown, even on only half of the rice area, there would be a surplus of production available for export. The problem has now changed and the choice of crops for research should be based in the first place on remunerative possibilities of export. After that the agricultural specialist and the plant breeder should see which of the crops chosen can be cultivated. By the side of selection in the principal pulses of Suriname a new field of investigation has now been started, namely the introduction of new annuals.

HISTORICAL DEVELOPMENT

The report published in the year 1904 by the Inspection of Agriculture in Suriname (1, p. 36) mentions the growing of pulses. In later reports also we find information on this subject. On sandy soils the cultivation was mainly restricted to peanuts. To a smaller extent also soybeans and other pulses were grown. Soybean, *Vigna sinensis* (black-eye pea, cowpea, etc.) and *Phaseolus radiatus* (mung bean, oerdi, katjang idjoe), however, were mainly grown on clay soils. The following quotation derived from the report 1931 of the Department Agricultural Experiment Station (4, p. 61) gives a fairly good picture of this: