

THE COLLECTION, INTRODUCTION, MAINTENANCE MULTIPLICATION AND DESCRIPTION OF CAJANUS, VIGNA AND VOANDZEIA GERMPLASM

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EXECUTIVE SUMMARY

The objectives are to acquire, conserve , multiply and describe germplasm of *Cajanus cajan*, *Vigna unguiculata* and *Voandzeia subterranea* for use in the PRT funded project RW 05 301, Selection, evaluation breeding and commercial development of *Cajanus*, *Vigna* and *Voandzeia* for food and fodder, which should result in the development of cultivars suitable for low input agriculture. These cultivars should relieve the current shortages in protein supply for human and animal consumption. All these crops are adapted to dryland production and can be used directly by humans but will also form a major part of animal diets.

The plants collected are being subdivided into the species groups and multiplication and descriptions are being done at different localities.

Both projects were planned to form part of an effort to establish *Vigna unguiculata*, *Cajanus cajan* and *Voandzeia subterranea* as new improved crops, mainly in the developing communities. This is a major undertaking as at least two of the crops *Vigna* and *Voandzeia*, are already accepted but improved cultivars adapted to South African conditions are not readily available. Those in use are mainly imported land races or local selections of which seed has been kept through many years of cultivation.

Although this project was slow to get off the ground during the 1994/95 season because of the resignation of the responsible officer, Mr A J Kruger, and the resulting uncertainty about fund allocation, it was possible to negotiate with the PRT that unspent funds for the 1994 period be rolled over to 1995. This resulted in the continuation of the actions and ensured that the two PRT funded, and inter dependent projects could be further developed.

Some changes were, however, suggested for the execution of the projects. These changes will result in a more logical research and reporting procedure and would also ensure that the non performance of a certain species will not jeopardise the continuation of the projects.

The following is therefore suggested for 1995 and onwards:

That the objectives, but for maintenance and multiplication of the genepool, of this project RW 05/01/02 be partly completed during 95.

That the promising material from this screening be subcontracted to projects RW 05/03/03 for screening for drought tolerance and also to RW 05/03/01 for evaluation for forage potential and for adaptation to different environmental conditions.

That the genebank maintains the genetic material at least until the end of the proposed research period of RW 05/03/01.

Results and conclusions.

It is very difficult to handle descriptive work at a distance and it is suggested that in future all the work be done at Roodeplaat. The promising lines of all three species will during the 1995/96 and 1996/97 seasons be transferred to project 205 301 and this project will after that become a maintenance project for the conservation of genetic material at a reduced cost.

Failures to achieve objectives and project shortcomings.

Project failures were due to unseasonable rains which caused seed to germinate in pods. Most of the objectives were, however, achieved to a large extent. A major problem was experienced with seed production of *Cajanus* which although a cross pollinating crop, was established in an open nursery of nearly 100 lines. The problem of retaining the integrity of seed produced was overcome by manufacturing muslin bags that were used to cover inflorescences. The seed collected from these bags was the only seed that could be used as a sample of the original accession.

Project alterations/adjustments.

It is envisaged that all plantings will be done at Roodeplaat. For *Cajanus* which could require a longer growing season the seedlings will first be established in the shelters in speedling trays and then established in the field when there is little possibility of frost.

Congresses and workshops will be attended as needed to plan project and to report results. It is envisaged that some of the results will be presented at the SASAT conference as well as at the All Africa Conference on Animal Agriculture