# THE PASTURE SEED DISTRIBUTION SERVICE

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## INTRODUCTION

During the past 10 years a number of tropical and sub-tropical pasture grasses and legumes have been brought into Papua New Guinea. The aim has been to improve the quality of animal feed to gain higher animal production. These pasture species have been tried out in various climatic zones of the country to find the most suitable ones for pasture improvement.

Some species now found in different climatic zones are as follows:

Above 2000 m a.s.l.

Kikuyu (*Pennisetum clandestinum*)
Vigna (*Vigna parkeri*)

750 - 2000 m a.s.l.

Setaria (*Setaria anceps*)
Kenya white clover
(*Trifolium semipilosum*)

Below 750 m, wet areas

Paragrass (*Brachiaria mutica*)
Centrosema (*Centrosema pubescens*)

Below 750 m, dry areas

Buffel grass (*Cenchrus ciliaris*)
Siratro (*Macroptilium atropurpureum*)

Through the years these species have adapted well in some places in their different zones and have contributed to pasture development. This not only improves animal production, but also improves soil fertility and conservation.

However, although we know that some species have grown well at certain places, there are very few recordings of exactly how they have performed. Therefore a project has been started at the Pastoral Research Centre, Erap, to collect data on pasture species already introduced and on any new introductions.

### *GRASS PLOTS*

*One of the 24 introductions of* Setaria anceps *at Erap. The plot shows* S. anceps *CPI 5836. Although not well adapted to the lowlands, the Setarias at Erap are a source of planting material for testing in other environments.*

*One of the Guinea grasses:* Panicum maximum *var Trichoglume; cv.Green panic*

Stylosanthes guianensis *CPI 37204, one of the many introductions of* Stylosanthes *species established at Erap*

Desmodium heterophyllum *(hetero) plot with grass plots on the left and legumes on the right*

## THE AIMS OF THE PROJECT

The project, known as 'The Pasture Seed Distribution Service', has two aims:

1. It will provide a service to meet the large number of requests for pasture seeds from around Papua New Guinea. This type of service has been provided in the past at irregular intervals only. Extension officers and others can obtain small quantities of pasture cultivars for seed production, demonstration plots and testing in the field. All cultivars supplied are available commercially in Australia.

2. People who receive seeds will be asked to supply, in return, information on the performances of the pasture species. The data collected will be used to build up a bank of useful information on pasture species in different environments. This will add extra information to a research project based on introducing and testing pasture cultivars which are not available commercially.

## HOW THE PROJECT WILL WORK

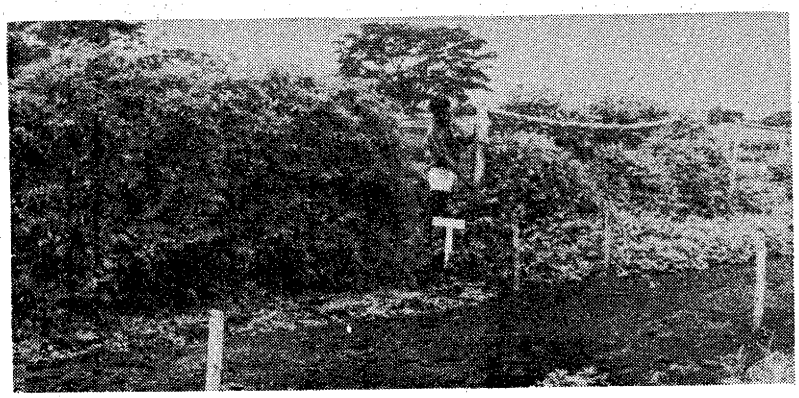
The Pastoral Research Centre will supply pasture seeds, and in turn will get information about the performance of each of the species when planted.

Seeds will be supplied free of charge. Freight, postage and other costs will be taken care of by the Centre. The types of seeds available are listed in Table 1. They will be supplied in small quantities only - 50

## *SEED COLLECTION*

*Trellises are erected to make harvesting easier, especially from the crawling or creeping legumes.*

*Siratro* (Macroptilium atropurpureum) *successfully climbs up the trellises. Puero* (Pueraria phaseoloides) *can be seen on the trellises on the far left.*

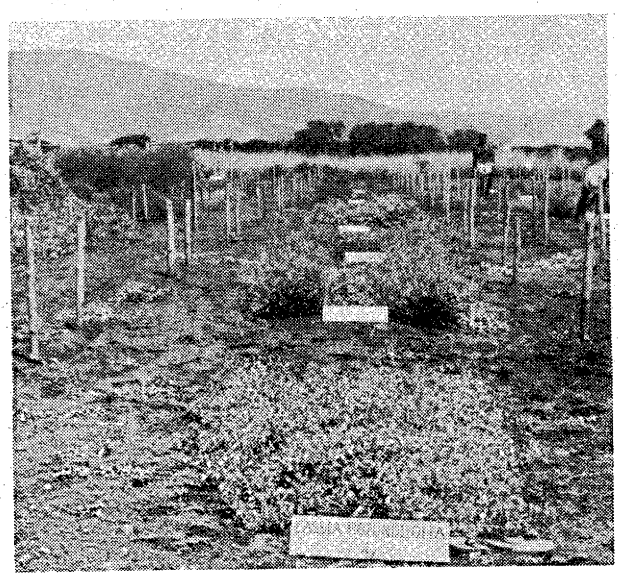


*Butterfly pea* (Clitoria ternatea) *on trellises (foreground) with Cooper glycine* (Neonotonia wightii) *on the right.*

## *INTRODUCTIONS*

*Seeds of new pasture species are recieved regularly from Australia, for evaluation at Erap and at other sites. The two photographs below show new plantings of two new legumes.*

Alysicarpus rugosus *CPI 30034*



Cassia rotundifolia *cv. Wynn*

TABLE 1. PASTURE SEEDS AVAILABLE FOR DISTRIBUTION AND THEIR SPECIFIC RHYZOBIUM REQUIREMENT

| Botanical name | Common name | Cultivar name | Rhyzobium requirement |
|---|---|---|---|
| Legumes | | | |
| *Stylosanthes guianensis* | Stylo | cv. Cook | Group I |
| *Stylosanthes guianensis* | Stylo | cv. Graham | Group I |
| *Stylosanthes guianensis* | Stylo | cv. Endeavour | Group I |
| *Stylosanthes scabra* | Shrubby stylo | var. Fitzroy | Group I |
| *Stylosanthes hamata* | Caribbean stylo | cv. Verano | Group I |
| *Neonotonia wightii* | Glycine | cv. Tinaroo | Group I |
| *Desmodium uncinatum* | Silverleaf desmodium | | Desmodium |
| *Macroptilium atropurpureum* | Siratro | cv. Siratro | Group I |
| *Trifolium semipilosum* | Kenya white clover | | Kenya |
| Grasses | | | |
| *Brachiaria decumbens* | Signal grass | cv. Basilisk | |
| *Cenchrus ciliaris* | Buffel grass | cv. Biloela | |
| *Cenchrus cililaris* | Buffel grass | cv. USA | |
| *Chloris guyana* | Pioneer Rhodes grass | | |
| *Setaria anceps* | Setaria | cv. Kazungula | |

g per species. When legume seed is provided, a small quantity of the most suitable Rhizobium will also be supplied.

An information sheet, as shown on pages 113-114, will be sent with the seeds. We expect whoever is responsible to fill in the information required and return it to us.

The service is offered mainly to extension officers and any institutional body which may have problems with its pastures. We hope that the service will enable all provinces to set up plots of various grasses and legumes for demonstration purposes and also as sources of planting material. At the same time it will provide the Pastoral Research Centre with information about which grasses and legumes do well and which do not do well in different areas of the country.

We will only send seeds to those who are interested in and have time to work on this project. If any officer from the extension services of D.P.I., or from some other body or institution (e.g. Agricultural Colleges, Missions, etc.) would like to know more about the Pasture Seed Distribution Service, please write to:

The Pasture Agronomist
Pastoral Research Centre
D.P.I. Erap
P.O. Box 1984, LAE.

(Telephone: 422274)

## APPENDIX A: INFORMATION SHEET

THE PASTURE SEED DISTRIBUTION SERVICE

PASTORAL RESEARCH CENTRE - DPI ERAP. P.O. BOX 1984, LAE

## RECORD FOR ENVIRONMENTALLY INFLUENCED CHARACTERS

Species name: Sample identification:
Accession No: Trial location:
Source: Observer:

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### ENVIRONMENTALLY INFLUENCED CHARACTERS

Months from planting

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date of recording | | | | | | | | | | | | | | | | |
| Month | | | | | | | | | | | | | | | | |
| Rainfall | | | | | | | | | | | | | | | | |

Vigour (tick appropriate box for each month)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Very good | | | | | | | | | | | | | | | | |
| Good | | | | | | | | | | | | | | | | |
| Fair | | | | | | | | | | | | | | | | |
| Very poor | | | | | | | | | | | | | | | | |

Height (to nearest 5 cm)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

Width

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

Greenness (1-10) (10=green)

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

Pest and diseases (0-5) (5=severe).
(add extra pests/diseases as necessary)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | |

Drought effects (0-5) (0=unaffected; 5=dead)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

Frost Tolerance (0-10) (0=unaffected. 10=100% leaf dead)

| | First frost | Heavy frost |
|---|---|---|
| Date | | |
| Severity | | |

Flowering

| | Date |
|---|---|
| First flowers (50% plants flowering for first time) | |
| Last flowers (50% plants finished flowering) | |

First mature seed (50% plants carrying mature seed)

Perennation * (percent of old crowns regenerating in 2nd growing season) (Year)

Special notes

* This could occur in the first 12 months

Any additional notes should be included on a separate sheet of paper and attached to this sheet.