OAU/STRC JOINT PROJECT-31
SAFGRAD
SEMI-ARID FOOD GRAIN RESEARCH AND DEVELOPMENT
AND
IDRC - UPPER VOLTA
NATIONAL COWPEA IMPROVEMENT PROJECT

PROGRAM OF RESEARCH
1983 FIRST SEASON

I I T A
INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE
B.P. 1783, OUAGADOUGOU (UPPER VOLTA)

Page nº

MAIZE BREEDING PROGRAM-1983 I

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A. KAMBOINSE

I. EVALUATION OF VARIOUS COMPOSITES/VARIETIES IN VARIETY TRIALS

1. Regional uniform variety trial-1 (RUVT-1)

Early maturing varieties from different programs.

Entries : 12 + Local check
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : D3
Date of planting : 23.06.1983

2. Regional uniform variety trial-2 (RUVT-2)

Medium maturing varieties from different programs.

Entries : 11 + Local check
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : D1
Date of planting : 23.06.1983

3. Pioneer hybrids trial

Promising hybrids from pioneer (U.S.A.)

Entries : 7 + 2 checks
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : D1
Date of planting : 29.06.1983

4. Experimental variety trial EVTLSR (W)

Experimental varieties developed at IITA Ibadan from late streak resistant white composite :

Entries : 9 + 2 checks
Plot size : 4 rows, 5 m long.
Nº of reps : 4
Plot nº D3
Date of planting : 23.06.1983

5. Experimental variety trial EVTLSR(Y)

Experimental varieties developed at IITA, Ibadan from Late streak resistant Yellow composite.

Entries : 7 + 2 checks
Plot size : 4 rows, 5 m long.
Nº of reps : 4
Plot nº D3
Date of planting : 23.06.1983

6.Full-sib family trial TZUT (W)

Full-sibs developed at IITA, Ibadan in TZUT (W) composite :

Entries : 250 + 6 checks
Plot size : 1 row, 5 m long.
Nº of reps : 3
Plot nº : D7
Date of planting : 29.06.1983

7. Experimental variety trial EVT 14A

Experiemental varieties developed at CIMMYT, Mexico from Mezcla Amarilla (P26), Amarillo cristalino - 2 (P31) and Ant x Rep. Dom (P35).
Entries : 11 + 2 checks
Plot size : 4 rows, 5 m long.
Nº of reps : 4
Plot nº : D1
Date of planting : 29.06.1983

8. Experimental variety trial EVT 16A

Experimental varieties developed at CIMMYT, Mexico from Amarillo subtropical (P33) ; Amarillo de Bajio (P45) ; Temp. Amarillo cristalino (P46) and comp. de Hungary (P48).

Entries : 12 + 3 checks
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : D9
Date of planting : 29.06.1983

9. Experimental variety trial EVT 15A (QPM)

Experimental varieties developed at CIMMYT, Mexico from quality protein composites : Yellow QPM Pop. 39 and white QPM Pop. 40.

Entries : 9 + 3 checks
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : Isolation near station building
Date of planting : 4.07.1983

10. Local variety trial n°1

Local varieties collected from different parts of Upper-Volta :

Entries : 16
Plot size : 2 rows, 5 m long.
N° of reps : 2
Plot n° : D6
Date of planting : 9.07.1983

11. Local variety trial n°2

Local varieties collected from different parts of Upper-Volta :

Entries : 40
Plot size : 2 rows, 5 m long.
N° of reps : 2
Plot n° : D6
Date of planting : 8.07.1983

II. BREEDING MATERIALS

1. Breeding for tolerance to drought

i) 87 S1 Sib families selected in drought nursery at Loumbila in 1981 second season and sibbed in 1982 second season at Loumbila.
Plot n°s 1 to 87 (Plot D10 and D5)
Date of planting : 4.07.1983

ii) 10 H.S. ears in J.F.S. ; 8 H.S. ears in TZPB and 4 H.S. ears in SAFITA-2 selected at Kamboinse in late planted materials in 1982 I season.
PLot n°s 88 to 109 (Plot D2)
Date of planting : 4.07.1983

iii) One local variety identified as promising for drought tolerance.
Plot n° 110 (Plot D2)
Date of planting : 4.07.1983

iv) One inbred line obtained from Germany as promising line for drought tolerance. Original, sibbed and crossed (F1) to SAFITA-104.
Plot n°s 111 to 115 (Plot D2)
Date of planting : 4.07.1983

v) Recurrent selection for drought tolerance
To initiate Full-sib recurrent selection in 3 composites/varieties.
Pool-16
Safita-2
Tuxpeno D.R. (from CIMMYT)
Two dates of planting : 23.06.1983, Plot D1 (Shallow soil
29.06.1983, Plot D9 (Deep soil)

2. Breeding for earliness and high yield

i) Full-sib recurrent selection in TZUT (Y)
180 H.S. ears selected from H.S. block of TZUT (Y) at Kamboinse in 1982 first season.
Plot n°S 201 to 380 (Plot C)
Date of planting : 5.07.1983
97 H.S. ears selected from H.S. block of TZUT (Y) crossed to U.S. x Trop. Material of SAFGRAD/IITA at Kamboinse in 1982 first season.
Plot n°s 401 to 497 (Plot C)
Date of planting : 5.07.1983

ii) Selection in local varieties crossed to improved materials.
105 different cross combinations between local x improved and early x medium maturing populations.
Plot n°s 701 to 805 (Plot E11 and F8)
Date of planting : 7.08.83

iii) Selection in U.S. x Tropical materials crossed to improved populations.
22 different cross combinations between U.S. x Trop. materials and the improved early and medium maturing varieties.
Plot n°s 1001 to 1022 (Plot F7)
Date of planting : 8.07.1983

iv) Observation, mild mass selection and seed increase of 12 promising varieties/experimental varieties.
Plot n°s 901 to 912 (Plot F7)
Date of planting : 8.07.1983

v) Observation and multiplication of new material introduced from CIMMYT, Mexico.
21 materials from CIMMYT
Plot n°s 1101 to 1107 and 1201 to 1214 (Plot F7)
Date of planting : 8.07.1983

vi) Observation and multiplication of various experimental varieties developed from TZESR (Y), TZE 12, TZE 8, TZE 9, TZE 15, TZE 14, TZE 7, TZE 16.
32 varieties
Plot n°s 1401 to 1432 (Plot F7)
Date of planting : 8.07.1983

vii) Observation and multiplication of 10 materials introduced from U.S.A.
Plot n°s 1301 - 1307 and 1505 - 1507 (Plot F7and D9)
Date of planting : 8.07.1983(F7) ; 18.07.1983 (D9)

3. Breeding for quality protein maize

i) Full-sib selection in one promising QPM composite Pool-34.
70 full-sibs selected at Loumbila in second season 1982
Plot n°s 501 - 570 (Plot C)
Date of planting : 5.07.1983

4. Multiplication of breeders seed

i) All varieties included in RUVT-1 and RUVT-2 trials
Plot n°s 601 - 621 (Plot C)
Date of planting : 5.07.1983

ii) SAFITA-104 (isolation beyond paddy fields)
Date of planting : 4.07.1983

iii) SAFITA-102 (isolation near paddy fields)
Date of planting : 4.07.1983

iv) Sweet corn
Date of planting : 9.07.1983 and 18.07.1983.

B. LOUMBILA

I. EVALUATION OF VARIOUS COMPOSITES/VARIETIES IN VARIETY TRIALS

1. Experimental variety trial EVT 14A

Experimental varieties developed at CIMMYT, Mexico from Mezcla Amarilla (P26), Amarillo cristalino-2 (P31) and Ant. x Rep. Dom (P35)
Entries : 11 + 2 checks
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : A7
Date of planting : 4.07.1983

2. Experimental variety trial EVT 16A

Experimental varieties developed at CIMMYT, Mexico from Amarillo Subtropical (P33) ; Amarillo de Bajio (P45) ; Temp. Amarillo cristalino (P46) and comp. de Hungary (P48).
Entries : 12 + 3 checks
Plot size : 4 rows, 5 m long.
N° of reps. : 4
Plot n° : A7 and 8
Date of planting : 4.07.1983

3. Pioneer hybrid trial

Promising hybrids from pioneer, U.S.A.

Entries : 7 + 2 checks
Plot size : 4 rows, 5 m long.
N° of reps : 4
Plot n° : A2
Date of planting : 6.07.1983

4. Local variety trial

Local varieties collected from different parts of Upper-Volta.

Entries : 210
Plot size : 4 rows (2 for breeding), 5 m long.
N° of reps : 2
Plot n° : A3 to A6
Date of planting : 5.07.1983

II. BREEDING MATERIALS

1. Breeding for tolerance to drought

i) Recurrent selection for drought tolerance to initiate full-sib recurrent selection in 3 oomposites/varieties
Pool-16
SAFITA-2
Tuxpeno D.R. (from CIMMYT)
Two dates of planting : 13.6.83 (Plot A1 and 2)
9.7.83 (Plot A2)

2. Observation and evaluation of new materials from CIMMYT

21 materials
Plot n° A7 and 8
Date of planting : 13.07.1983

3. Observation and seed increase of local germplasm

210 local varieties planted in two replications.
Plot N°s 101 to 522 (Plot A3 to A6)
Date of planting : 5.07.1983.

4. Multiplication of breeders seed

i) SAFITA-2 (isolation C8)
Date of planting 12.06.1983

ii)SAFITA-2 (Plot A2)
Date of planting : 9.07.1983

C. FARAKO BA (BOBO)

I. EVALUATION OF VARIOUS COMPOSITES/VARIETIES IN VARIETY TRIALS

1. Regional uniform variety trial-1 (RUVT-1)

Early maturing varieties from different programs

Entries : 12 + local check
Plot size : 4 rows, 5 m long.
Nº of reps : 4
Date of planting : 30.06.1983

2. Full-sib family trial TZSRY-1

Full-sibs developed at IITA, Ibadan in TZSRY-1 composite

Entries : 250 + 6 checks
Plot size : 1 row, 5 m Long.
Nº of reps : 3
Date of planting : 1.07.1983

II. BREEDING MATERIAL

1. Recurrent selection in medium maturing population SAFITA-102

To initiate full-sib recurrent selection program in SAFITA-102 by developing full-sibs.

Date of planting : 30.06.1983.

D. DEMONSTRATION/SEED PRODUCTION PLOTS AT FARMERS FIELDS (SAFITA-2 VARIETY)

	Name of village	Area	Date of planting
1	PABRE	2 ha	7 et 12/07/1983
2	TANGHIN DASSOURI	2 ha	6 et 07/07/1983
3	SAPONE	1 ha	4 et 10/07/1983
4	NAGBANGRE	0,75 ha	20/07/1983
5	MOGTEDO	2 ha	21/07/1983
6	KAMBOINSE	0,75 ha	8 et 9/07/1983
7	GONSE	1 ha	26/06 et 4/07/1983
8	SONDOGO	0,25 ha	7/07/1983

E. REGIONAL RESEARCH

I. TESTING THE PROMISING VARIETIES/COMPOSITES DEVELOPED BY DIFFERENT NATIONAL AND INTERNATIONAL PROGRAMS IN VARIOUS COUNTRIES PARTICIPATING IN THE SAFGRAD/IITA PROGRAM.

1. Regional uniform variety trial-1 (RUVT-1)

Early maturing varieties (12) + one local check
Plot size : 4 rows, 5 m long.
N° of reps : 4
This trial has been sent to national program in following countries :

1 BENIN
2 CAPE VERDE
3 CAMEROON
4 CENTRAL AFRICAN REPUBLIC
5 ETHIPIA
6 GHANA
7 GAMBIA
8 GUINEA
9 GUINEA-BISSAO
10 IVORY COAST
11 MALI
12 MAURITANIA
13 NIGERIA
14 NIGER
15 SENEGAL
16 SOMALIA
17 TOGO
18 UPPER VOLTA
19 KENYA
20 TANZANIA
21 ZIMBABWE
22 BOTSWANA
23 MALAWI
24 ZAMBIA

2. Regional uniform variety trial-2 (RUVT-2)

Medium maturing varieties (11) + one local check
Plot size : 4 rows, 5 m long
N° of reps : 4
This trial has been sent to national program in following countries :

1 BENIN
2 CAPE VERDE
3 CAMEROON
4 CENTRAL AFRICAN REPUBLIC
5 ETHIOPIA
6 GHANA
7 GAMBIA
8 GUINEA
9 GUINEA-BISSAO
10 IVORY COAST
11 MALI
12 MAURITANIA
13 NIGERIA
14 NIGER
15 SENEGAL
16 SOMALIA
17 TOGO
18 UPPER VOLTA
19 KENYA
20 TANZANIA
21 ZIMBABWE
22 BOTSWANA
23 MALAWI
24 ZAMBIA

IITA/SAFGRAD

MAIZE AGRONOMY RESEARCH

Mario Rodriguez

1983

The trials being conducted are grouped into different study areas, but the classification is somewhat arbitrary since most of the trials are of the factorial type and could fall under several headings.

A. PLANTING DATE STUDIES

1. PLANTING DATE TRIAL (T1K83)

Objectives : a)To evaluate the influence of planting date on maize grain yield.

b) To determine how the optimum density (for maximum grain yield) and fertilizer response are affected by planting date and soil moisture reserves.

Treatments : A factorial combination of 3 planting dates x 2 fertilizer levels x 4 plant densities. The last planting date involves both simple and tied ridges.

Location : Kamboinsé (Block E8)

Planting dates 27/6, 9/7, 21/7

2. PLANTING DATE TRIAL (T101F83)

Objective : To evaluate the effect of planting date on the growth and yield of maize under Northern Guinea Savanna conditions.

Treatments : A factorial combination of 4 planting dates x 2 management levels x 2 varieties.

Location : Farako-Bâ.

Planting dates : 22/6, 7/7, 22/7, 6/8

B. METHODS OF SOIL PREPARATION

1. SOIL PREPARATION TRIAL(5T2K83)

Objective : To study the effect on maize yield of different methods of soil preparation and of tied earthing-up .

Treatments : A factorial combination of 4 soil preparation methods x 2 management levels x 2 ridging systems.

Location : Kamboinsé (Block E1, E3 and E5).

Planting date : 4/7 .

2. SOIL PREPARATION TRIAL-BIS (T2KB83)

Objective : To study the effect on maize yield of different methods of soil preparation and of digging small holes between the rows.

Treatments : A factorial combination of 4 soil preparation method x 2 digging systems.

Location : Kamboinsé (Blocks E1, E3, E5, on the former cowpea subplots of the soil preparation trial, which were abandoned because of striga infestation)

Planting date : 4/7 .

C. SEEDBED STUDIES

1. SEEDBED TRIAL 5T3K83)

Objectives : a) To study the effect of several seedbeds on maize growth and grain yeyield.

b) To evaluate the relative performance of 2 varieties under severe stress and improved management conditions.

Treatments : A factorial combination of 3 seedbeds x 2 varieties x 2 management levels.

Location : Kamboinsé (Block E2).

Planting date : 4/7 .

D. TOPOSEQUENCE STUDIES

TOPOSEQUENCE TRIAL (T4K83)

Objectives : a) To quantify the effect of crop position along the toposequence on maize development and yield.

b) To determine the effect of tying the ridges in different positions on the toposequence.

c) To relate yield levels to relevant soil characteristics (texture, soil depth, position on the toposequence, etc).

d) To evaluate the interactions between crop position on the toposequence and planting date, between position on the toposequence and the ridges, and between the three factors.

Treatments : A factorial combination of 2 planting dates x 3 ridging systems x 5 positions on a toposequence.

Location : Kamboinsé (Blocks G2 to G7) .

Planting dates : 25/6 and 11/7.

E. DENSITY STUDIES

1. DENSITY TRIAL (T82L83)

Objectives : 1) To estimate the optimum density of one local and one improved early materials.

2) To evaluate the importance of border effect in the estimation of the optimum density.

Treatments : A factorial combination of 2 plot sizes X 2 varieties X 4 densities .

Location : Loumbila (Block 3).

Planting date : 20/7.

2. DENSITY TRIAL 5T102F83)

Objective : To estimate the optimum density of early and intermediate varieties under Northern Guinea Savanna conditions.

Treatments : A factorial combination of 2 varieties and 5 densities.

Location : Farako-Bâ.

Planting date : 21/6 .

3. DENSITY TRIAL (T19K83)

Objective : To determine the optimum plant density of a very early material (local Koudougou).

Treatments : 4 plant densities :

D1: 40,000 plants/ha

D2: 70,000 " "

D3:100,000 " "

D4:130,000 " "

Location : Kamboinsé (Block E2).

Planting date : 29/6 .

F.CULTIVATION (SCARIFICATION) STUDIES

1. CULTIVATION TRIAL (T12K83)

Objectives : To compare the effect of several cultivation systems on maize grain yield. The issue is the effectiveness of cultivation as a means of increasing water preemergent herbicide and by hand pulling.

Treatments : 5 cultivation systems.

Location : Kamboinsé (Block H5).

Planting date : 4/7 .

2. NEW CULTIVATION TRIAL (T24K83)

Objective : To study the effect on maize grain yield of cultivation (scarification) as a practice to break the soil crust and increase soil water infiltration.

Treatments : 6 cultivation systems.

Location : Kamboinsé (Block E5), on a very crusting soil.

Planting date : 4/7 .

G. EARTHING UP STUDIES

1. EARTHING-UP TRIAL (T11K83)

Objectives : a) To study the effects of simple earthing up and tied earthing up on maize grain yield under a traditional (hand-hoe) soil preparation system. In the following years, maize is planted directly on the old tied ridges (the experiment started in 1980).

b) To evaluated the duration of the tied ridges from one year to the next and the degree of repairs needed each season.

Treatments : A factorial combination of 2 management levels x 4 ridging systems.

Location :Kamboinsé (Block E4).

Planting date : 29/6.

2. RIDGING-EARTHING UP TRIAL (T10K83)

Objective : To determine if earthing up and building up tied ridges has an effect on the grain yield of maize planted on tied ridges.

Treatments : 2 tied - ridges systems.

T1 : planting on tied ridges ; no earthing up.

T2 : planting on tied ridges. Earthing up at 28 DAP and building up of the ridges and ties.

Location : Kamboinsé (Block E2).

Planting date : 4/7 .

3. RIDGING AND EARTHING-UP TRIAL (T103F83)

Objective : To study the effect of several ridging and earthing-up systems on maize growth, development, lodging , and grain yield under Northern Guinea Savanna conditions.

Treatments : 8 ridging and earthing-up systems.

Location : Farako-Bâ

Planting date : 23/6

H. TIMING OF NITROGEN APPLICATION

1. TIMING OF NITROGEN APPLICATION TRIAL (T15K83)

Objective : To determine the best time to apply the N fertilizer from the point of view of maize grain yield.

Treatments: A factorial combination of 2 management levels x 5 timings of N application, plus a check.

Location : Kamboinsé (Block H3).

Planting date : 1/7 .

2. TIMING OF NITROGEN APPLICATION TRIAL (I105 F 83)

Objectives : a) To determine the best time to apply the N fertilizer from the point of view of maize grain yield,

b) to establish a N response curve, and c) to see if there is a residual effect of N fertilizer, under Northern Guinea Savanna conditions.

Treatments : A factorial combination of 2 N levels x 5 timings of N application. There are in addition 2 extra treatments : one with no added N and one with 100 kg N/ha.

Location : Farako-Bâ (plot).

Planting date : 22/6 .

I. TIED-RIDGES STUDIES

1. TIED-RIDGES TRIAL (T17K83 AND T17KB-83)

Objectives : a) To study the effect on maize yield of different ways of tying the ridges.

b) To study the interaction between ridge-tying and soil type.

Treatments : A factorial combination of 4 systems of ridge-tying and 2 management levels. The experiment will be carried out on a sandy loam, lowland, soil (Trial 17K) and on an upland, gravelly soil (Trial 17K-Bis).

Location : Kamboinsé (Block E6 for T17K and Block F1 for T17KB).

Planting date : 4/7 and 5/7.

2. TIED-RIDGES TRIAL ON CLAYEY SOIL (T 18 K 83)

Objectives : Same as in trials 17 and 17-Bis.

Treatments : 3 ridge-tying systems.

Location: Kamboinsé (Block E6, but on a clayey spot).

Planting date : 5/7.

3. TIED-RIDGES DEMONSTRATION TRIAL (T21K83)

Objectives : a) To show the positive effect of tied ridges on maize grain yield.

b) To explore if careful placement of crop residues in the basins can influence water infiltration and maize grain yield .

Treatments : A factorial combination of 2 ridging systems x 2 residue managements.

Location : Kamboinsé (by the gate) .

Planting date : 30/6 .

4. TIED-RIDGES TRIAL ON FARMERS' FIELD (T50J83)

Objectives: a) To evaluate the response of maize to tied ridges in farmers' fields, following the conventional hand-hoe soil preparation method and planting on soils where farmers normally plant millet or sorghum.

b) To evaluate the residual effect of fertilizers .

c) To evaluate the duration of the tied ridges from one season to the next.

Treatments : A factorial combination of 2 residual fertilizer (1981) levels X 3 ridging systems 2 residual fertilizer (1982) levels.

Location : Kamboinsé Village, at Joseph's.

Planting date : 5/7 .

5. TIED-RIDGES ON FARMER'S FIELDS (T51A83)

Objectives : a) To evaluate the response of maize to tied ridges in farmers' fields, following the conventional hand-hoe soil preparation method and planting on soils where farmers normally plant millet or sorghum.

b) To determine if it is better to tie all the ridges or only every second furrow.

c) To evaluate the duration of the tied ridges from one season to the next.

Location : Kamboinsé Village, at Albert's.

Treatments : A factorial combination of 3 ridging systems x 2 fertilizer levels.

Planting date : 6/7 .

J. RESIDUE MANAGEMENT STUDIES

1. CROP RESIDUE MANAGEMENT TRIAL (T6K83)

Objective : To study the effect of several crop residue managements on maize grain yield.

Treatments : A factorial combination of 3 residue managements x 2 management levels x 2 ridging systems.

Location : Kamboinsé (Block E4).

Planting date : 29/6.

K. GENOTYPE - MANAGEMENT INTERACTION STUDIES

1. STRESS TRIAL (T8K83)

Objective : To explore the genetic variability in maize for adaptation to drought and soil compaction conditions.

Treatments : A factorial combination of 20 half-sib families X 2 management levels.

Location : Kamboinsé (Block H5)

Planting date : 13/7

2. GENOTYPE-MANAGEMENT INTERACTION TRIAL (T13K83)

Objective : To evaluate the interaction genotype x management.

Treatments : A factorial combination of 2 ridging systems x 2 varieties.

Location : Kamboinsé (Block H4), in plots of former (T13K82).

Planting date : 1/7.

L. INTERCROPPING, RELAY-CROPPING AND ROTATION STUDIES

1. COWPEA-MAIZE ROTATION TRIAL (T7S83)

Objectives : a) To study the effect on maize yield of several cowpea-maize rotations and a system of continuous maize.

b) To determine whether nematodes are a factor affecting maize yield.

c) To study the effect of the rotations on several soil characteristics.

Treatments : A factorial combination of 6 rotations x 2 management levels x 2 nematocide levels.

Location : Saria (Block 4).

Planting date : 31/7.

2. MAIZE-COWPEA ROTATION AND RELAY CROPPING TRIAL (T8IL83)

Objectives : a) To study the effect on maize yield of several maize-cowpea rotations involving both sole cropping and relay-cropping.

b) To explore the interaction cowpea genotype x rotation.

c) To study the effect of high rates of Furadan.

Treatments : A factorial combination of 2 management levels x 10 rotations x 2 Furadan levels.

Location : Loumbila (ORD Block).

Planting date : 26/7.

3. MAIZE-COWPEA ROTATION AND RELAY CROPPING TRIAL (T104F83)

Objectives : a) to study the effect on maize yield of several maize-cowpea rotations involving both sole cropping and relay-cropping.

b) To explore the interaction cowpea genotype x rotation

c) To study the effect of high rates of Furadan.

Treatments : A factorial combination of 2 management levels x 8 rotations x 2 Furadan levels.

Location : Farako-bâ .

Planting date : 22/6.

4. MAIZE-COTTON ASSOCIATION TRIAL (T25K83)

Objectives : a) To show the response of cotton to tied ridges and get IRCT interested in the technique.

b) To further evaluate the advantages of a maize-cotton inter-cropping system under tied ridges.

Treatments : 4 cropping systems as follows .

Location : Kamboinsé (Block E5).

Planting date : 13/6 .

M. PHOSPHATIC ROCK STUDIES

1. PHOSPHATIC ROCK TRIAL (T52J83)

Objectives : To evaluate the response of maize to phosphatic rock, tied ridges, and Furadan on farmers'fields.

Treatments : A factorial combination of 2 Furadan levels x 3 phosphatic rock levels x 2 ridging systems.

Location : Kamboinsé village, chez Joseph.

Planting date : 5/7 .

2. VOLTAPHOSPHATE TRIAL (T80L80)

Objective : To evaluate how the yield response to phosphatic rock is affected by the use of tied ridges.

Treatments : A factorial combination of 6 Voltaphosphate levels plus two extra-treatments x 2 ridging systems.

Location : Loumbila (ORD Block).

Planting date : 26/7.

N. FERTILIZER RESPONSE AND RESIDUAL EFFECTS STUDIES

1. NITROGEN AND PHOSPHORUS RESPONSE AND RESIDUAL FERTILIZER EFFECT TRIAL (T83L83). REMAT-3 .

Objectives : (a) To study the grain yield response to nitrogen and phosphorus.

(b) To estimate the residual fertilizer effect of nitrogen and phosphorus applications in Semi-Arid environments.

Treatments : A factorial combination of 9 levels of NP and 3 plant densities.

Location : Loumbila (ORD Block).

Planting date : 26/7 .

2. NITROGEN AND PHOSPHORUS RESPONSE AND RESIDUAL FERTILIZER EFFECT TRIAL (T106F83). REMAT-3

Objectives : (a) To study the grain yield response to nitrogen and phosphorus.

(b) To estimate the residual fertilizer effect of nitrogen and phosphorus applications in Semi-Arid environments.

Treatments : A factorial combination of 9 levels of NP and 3 plant densities.

Location : Farako-Bâ.

Planting date : 22/6.

O. TERMITE DAMAGE STUDIES

1. DIELDRIN AND RESIDUES TRIAL (T32K83)

Objective : To evaluate the effect of dieldrin application on maize growth and yield when maize residues are incorporated shortly before planting.

Treatments :

T1 : No dieldrin

T2 : Dieldrin applied at planting, at 30 DAP (earthing up), and 60 DAP (earthing up). Apply 3 kg a.i./ha each time.

Location : Kamboinsé (Block G6).

Planting date : 29/6 .

2. DIELDRIN TRIAL (T34K83)

Objective :To evaluate the effect of dieldrin application on maize growth and yield.

Treatments :

T1 : No dieldrin

T2 : Dieldrin applied at planting, at 30 DAP (earthing up), and 60 DAP (earthing up). Apply 3 kg a.i./ha each time.

Location : Kamboinsé (Block F1).

Planting date : 29/6.

P. EVALUATION OF LOCAL VARIETIES

1. LOCAL VARIETIES EVALUATION TRIALS I AND II (T27K83 AND T28K83)

Objectives : To evaluate the yield potential and other agronomic characteristics of local early maize varieties, e.g. plant height, maturity, lodging, etc.

Treatments : 6 local and 3 improved varieties.

Planting date : 29/6.

2. LOCAL KOUDOUGOU HALF-SIBS TRIAL (T23K83)

Objective : To explore the genetic variability in the local Koudougou population in terms of maturity, plant height, lodging, yield, etc.

Treatments and experimental design : 95 half-sib families of local Koudougou (H6K82) and 5 checks in a 10 x 10 lattice design with 2 replications.

Location : Kamboinsé (Block G6).

Planting date : 11/7.

Q. MISCELLANEOUS STUDIES

1. LATE THINNING TRIAL (T5K83)

Objective : To explore management alternatives that would maximize grain yield in years when the growing conditions (after crop establishment) turn out to be below average.

Treatments : a factorial combination of 2 planting dates x 5 crop managements.

Location : Kamboinsé (Block E4).

Planting dates : 29/6 and 13/7.

2. MAIZE CLIPPING TRIAL (T9K83)

Objectives : a) To explore if clipping maize seedlings has an effect on grain yield.

b) To evaluate the performance of 2 local and 2 improved varieties.

Treatments : a factorial combination of 4 varieties x 3 clipping dates.

Location : Kamboinsé (Block E6).

Planting date : 5/7.

3. ZINC TRIAL (T16KB83)

Objectives : a) To determine if there is a crop or grain yield response to either soil or foliar applications of Zn.

b) To evaluate the residual effect of P fertilizer.

Treatments : A factorial combination of 3 Zinc levels x 2 phosphorus levels.
Location : Kamboinsé (Block HI)
Planting date : 29/6

4. THINNING TRIALS (T20K83 AND T20KB83)

Objective : To determine the effect of different times of thinning on maize grain yield.
Treatments : 3 times of thinning
T1 : thinning at 12 DAP
T2 : " " 20 DAP
T3 : " " 28 DAP
Location : Kamboinsé (Blocks G8 and E7).
Planting dates : 6/7

5. PLANTS PER HILL TRIAL (T31K83)

Objective : To determine if the number of plants/hill has an effect on maize grain yield under semi-arid conditions.
Treatments : A factorial combination of 2 ridging systems x 2 densities x 4 plant arrangements.
Location : Kamboinsé (Block F1)
Planting date : 30/6

6. PRE-GERMINATION TRIAL (T33K83)

Objective : To explore if soaking the maize seed in water has any influence on maize growth and yield.
Treatments : a factorial combination of 2 pre-germination systems x 5 soaking times.
Location : Kamboinsé (Block E6).
Planting date : 15/7

7. SEED SIZE TRIAL (T35K83)

Objectives :To explore the effect of seed size on maize growth and yield under Semi-Arid conditions.
Treatments : a factorial combination of 4 varieties x 2 seed sizes (not the same for each variety).
Location : Kamboinsé (Block E6)
Planting date : 13/6

MAIZE ENTOMOLOGY PROGRAM 1983

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A. KAMBOINSE

I. SCREENING OF PROMISING MAIZE MATERIAL FOR TOLERANCE TO TERMITES

There has been indications that degree of root feeding by termites varies in different varieties. The objective of the trial is to screen promising material for root feeding damage and also evaluate other characters/ factors contributing to it.

Entries : 25

Replication : 4

Plot size : 2 rows x 10 m

Location : F6 at Kamboinse station

Date of planting : 18.07.1983.

UPPER VOLTA COWPEA BREEDING PROGRAM-1983

The program is carried out at different sites representing different agroclimatic zones. Following are the three major zones, their main sites and details of trials/ experiments planted during 1983 crop season.

I. SUDAN SAVANNA ZONE (ANNUAL RAINFALL 700-800 MM)

A. KAMBOINSE

(a) Variety Yield Trials

1. Regional Medium Maturity Trial (RMMT)

Objective is to select varieties adapted across environments. The trial includes' varieties maturing in 70-75 days and are contributed by different national, regional and international programs. Other details are :

Varieties	:	15
Reps	:	4
Date planted		17 July, block C-1.

2. Advanced Yield Trial - 1 (AYT-1)

It includes promising photosensitive good seed quality varieties evaluated and scrrened in previous years. Details are :

Varieties	:	28
Reps	:	4
Date planted	:	8 July, block D-2

3. Advanced Yield Trial-2 (AYT-2)

It includes photosensitive good seed quality varieties selected in previous years in Upper Volta. Other details are :

Varieties	:	36
Reps		4
Date planted		17 July, block C-6

4. Preliminary Yield Trial-3 (RPYT-3)

This trial contains local photosensitive collections made in different regions of Upper Volta.

Varieties : 49
Reps : 2
Date planted : July, block D-2

5. Preliminary Yield Trial-5 (PYT-5)

In contains selections made from the segregating material developed to combine good grain quality with other desirable agronomic characters.

Varieties : 169
Reps : 2
Date planted : 8 July, block C-8

6. Preliminary Yield Trial-7 (PYT-7)

It includes photosensitive good seed quality material selected from segregating populations in the previous years.

Varieties : 100
Reps : ~~2~~
Date planted : 13 July, block D-1

7. IITA Preliminary Yield Trials-3 and 4

The trials are a part of early generation testing of promising cowpea material developed at IITA. Details of each are :

Varieties : 20
Reps : 4
Date planted : 17 July, block C-3

8. IITA Advanced Yield Trials-1 & 2

The trials are a part of advanced generation testing of promising cowpea material of IITA. Details of each are :

Varieties 2 : 20
Reps : 4
Date planted : Advanced 1 : 18 July, block C-1
Advanced 2 : 17 July, block C-7

(b) Breeding for Insect resistance

1. Bruchids

(i) Preliminary Yield Trial-1 (PYT-1)

Contains promising varieties identified to progess high level of resistance to bruchids . It is the first test to select varieties that combine resistance to bruchids and other desirable seed and plant characters. All the material is photoinsensitive .

Varieties	144
Reps	2
Date planted	18 July, block C-2

(ii) Evaluation of Multiple Insect Resistance Cross Material Including Bruchids

The material included seven double cross segregating F2 populations earlier tested for aphid resistance. Total number of enteries are 41, planted as a single row plot on 19 July in block D-1.

(iii) Evaulation of photosensitive Bruchid Resistant Lines

It contains promising bruchid resistant F5 generation lines evaluated for yield and tother characters.

Varieties	69
Reps	Unreplicated
Date planted	

(iv) Evaluation of Material Combining Bruchid and Striga Resistance

The test is being carried out in the laboratory to identify level of bruchid resistance in lines earlier identified for striga resistance. The origin of this material is from a cross between striga resistant (SUVITA-2) and bruchid resistant (TVu 2027) parents.

Varieties	17
Reps	0
Date	continuous screening in lab.

2. Aphids

(i) Preliminary Yield Trial-2 (PYT-2)

It contains aphid resistant material selected from back crosses and triple crosses of SUVITA-2, KN-1, TVu 36 (aphid resistant), and TVx 3236. This material has earlier been screened twice both under field as well as screenhouse conditions.

Varieties	144
Reps	2
Date planted	4 July

(ii) F2 Populations Combining Aphids and Thrip Resistance

It contains F2 generation material evolved after crossing aphid resistant plants selected from backcross and triple cross population involving KN-1 and SUVITA-2 with the thrip resistant variety TVu 1509.

Total F2 populations : 7, unreplicated, date planted : 13 July, D-2

3. Thrips

(i) Evaluated of F2 generation material

Cross material between TVu 1509 and other promising varieties adapted to different environments

Total F2 population	9	
Reps	Unreplicated	
Date planted		
	Border KN-1	29 June
	F258 parents	13 July, block D-1 and D-2

(c) Breeding for Striga Resistance

1. Regional Cowpea Striga Trial (RCST)

It contains varieties identified for resistance to striga from crosses between striga resistant variety SUVITA-2 and others.

Varieties 12
Reps 3
Date planted 13 July, block E-10

2. Striga Resistance Studies on Varieties Varying in Maturity and Plant Type.

To study relationship of maturity and plant type with resistance or escape to striga damage.

Varieties 6
Reps 4
Date planting 29 June & 13 July, block E-10

3. Evaluation of Segregating Populations

(i) 132 segregating F3 populations of crosses between SUVITA-2 & KN-1.

(ii) Genetre studies to find out mode of inheritance of striga resistance crcss used : Kaya local x SUVITA-2.

Date planted 18 July

B. LOUMBILA

(A) VARIETY TRIALS

All the trials contain early maturing varieties (60-65 days). Objective is to select early varieties adapted in U.V. environments

1. Preliminary Yield Trial-4 (PYT-4)

It contains the early maturing material collected locally and identified in Upper Volta.

Varieties 28
Reps 3
Date planted 18 July

2. Regional Early Maturing Trial (REMT)

It contains early maturing varieties contributed by IITA, Upper Volta Program and other national programs.

Varieties 9
Reps 4
Date planted 18 July

3. IITA International Trials 1 & 3

These are part of the IITA's International Testing Program

Varieties in each 10
Reps 4
Date planted 18 July

4. IITA International Trial-2

It is also a part of IITA's International Testing Program

Varieties 20
Reps 4
Date planted 18 July

5. IITA's Preliminary Yield Trials 1 & 2

These are part of IITA's early generation testing program

Varieties in each 20
Reps 4
Date planted 18 July

II. GUINEA SAVANNA ZONE (1000-1100 MM)

A. FARAKO-BA

(a) Regional Trials

1. RMMT : Same as one planted at Kamboinsé . See section A.a.1. ation

Date planted : 29 July

2. REMT Same as one planted at Loumbila . See section B.a.2.

Date planted : 29 July

(b) Variety Trials

1. AYT-1

Same as at Kamboinsé . See section A.a.2.

Date planted 18 July

2. AYT-2

Same as at Kamboinsé . See section A.a.3.

Date planted : 29 July

3. PYT-3

Same as at Kamboinsé. See section A.a.4

Date planted : 18 July

4. PYT-4

Same as at Loumbila . See section B.a.1.

Date planted 29 July

(c) Breeding for Insect Resistance

1. PYT-&1

Bruchid Resistance trial. Same as at Kamboinsé. See section A.b.1.i.

Date planted 29 July

2. PYT-2

Aphid resistant trial . Same as at Kamboinsé . See section A.b.2.i.

Date planted 29 July

III. SAHEL ZONE (300-600 MM)

A. SAOUGA (300-400 MM)

(a) Regional Trials

1. REMT

Same as at Loumbila (B.a.2.) and at Farako-Bâ (A.a.2.)

Date planted :

2. RMMT

Same as at Kamboinsé (A.a.1.) and at Farako-Bâ (A.a.1)

Date planted :

(b) Variety Trials

1. PYT-2

Aphid resistant trial. Same as at Kamboinsé (A.b.2.i) and at Farako-Bâ (A.c.1.).

Date planted

2. PYT-4

Same as at Loumbila (B.a.1.) and at Farako-Bâ (A.b.4)

Date planted

B. POBE (400-500 MM)

(a) Regional Trials

1. RMMT

Same as at Kamboinsé (A.a.1), Farako-Bâ (A.a.1) and at Saouga (A.a.2)

Date planted

2. REMT

Same as at Loumbila (B.9.2.), Farako-Bâ (A.a.1) and at Saouga (A.a.1).

Date planted

(b) Variety Trials

1. AYT-2

Same as at Kamboinsé (A.a.3) and Farako-Bâ (A.b.2)

Date planted

2. PYT-4

Same as at Loumbila (B.a.1), Farako-Bâ (A.b.4) and at Saouga (A.b.2.)

Date planted

(c) Breeding for Insect Resistance

1. PYT-2

Same as at Kamboinsé (A.b.2.i.), Farako-Bâ (A.c.1) and at Saouga (A.b.2.)

Date planted

2. PYT-1

Same as at Kamboinsé (A.b.1.i) , & at Farako-Bâ (A.C.i)

Date planted

C. OUAHIGOUYA (500-600 MM)

(a) Regional Trials

1. RCST

Striga trial . Same as at Kamboinsé (A.c;1.)

Date planted

IV SCREEN HOUSE

Following crosses are in progress in the screenhouse to develop material for adaptation in varying latitudes and rainfall zones :

(i) Crosses between IAR 1696, Ouahigouya local, Kaya local, Logfrousso local with SUVITA-2, TVx 3236 and KN-1.

(ii) Crosses between West African and Botswana lines

West Africa	Botswana
SUVITA-2	Co9
Mougne	Co53
TN 88-63	IT 82E-42
58-57	IT 82E-18
TVx 1999-01F	TVx 3072-01E
	ER-7

V. ON-FARM TESTING AND SEED MULTIPLICATION

Lot of farmers in Upper Volta are getting interested in improved varieties of cowpea and the improved technology to grow them. In addition to national extension service and other development agencies, our program promotes cultivation of cowpea with progressive farmers. Different activities undertaken in this regard in 1983 are as follows :

(a) On-Farm-Testing

Village name	Farmers'name	Area	Varieties	Date planted
Baloulé	KALMOGO Rasmané	10000 m^2	32.36, SUVITA-2	15/7/83
Tintoulou	KABRE Koudbi	3.720 m^2	KN-1	7/7/83
Saponé	IbBOUDO Georges	2ha	SUVITA-2, KN-1	25/7/83
"	NINKIEMA Fernand	1 ha	SUVITA-2, KN-1	5/7/83
"	ZAGRE Timbila	1800 m^2	KN-1	4/7/83
Dapelogo	KARMOGO Bernabé	4000 m^2	SUVITA-2, KN-1	8/7/83
"	OUEDRAOGO Seydou	2000 m^2	SUVITA-2, 32,36	9/7/83
"	OUEDRAOGO Bila	2800 m^2	KN-1,32,36	7/7/83
Sodogo	ROUAMBA Benois	1200 m^2	KN-1	14/7/83
Gonsé	NINKIEMA	5000 m^2	KN-1 SUVITA-2	10/7/83
Nagbangré	ZOUNGRANA Arture	2000 m^2	KN-1	18/7/83
Pabré	Groupement villageois	1ha	KN-1 3236	12/7/83

(b) Seed Multiplication

Collaborator	Ava	Variety	Date planted
1. National seed service and CFJA, Kiemfague	2.0h.	KN-1	17 & 18/7/83
2. ORD Centre, Pabré	1.0h.	KN-1	25/07/83

COWPEA - AGRONOMY PROGRAM 1983 I

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A. FARAKO-BA

I. MAIZE-COWPEA RELAY CROPPING SYSTEM

1. Response of cowpea cultivars in a maize-cowpea realy-cropping system

Treatments : - two cowpea dates of planting ;
- four photo-sensitive cowpea cultivars ;
- three photo-insensitive cowpea cultivars.

Date of planting : June 30, 1983

Block 1

2. Effect of maize cultivar differences in maturity on yield of relay cropped cowpeas

Treatments : - two 90 days and two 105 days maize cultivars
- two maize rowspacings and
- two cowpea cultivars.

Date of planting : June 29, 1983

Block 1.

II. MAIZE-COWPEA INTERCROPPING SYSTEM

Comparison of extra-early and local early cowpea cultivars in a maize-cowpea intercropping system.

Treatments : - two dates of cowpea planting ;
- six combinations rowspacings, plant densities and cowpea cultivars as maize-cowpea mixture treatments ;
- two cowpea purestand and one maize purestand treatments ;

Date of planting : June 30, 1983

Block 1.

III. MANAGEMENT OF COWPEA PURESTAND

1. Effect of dates of planting on the performance of photo-insensitive cowpea cultivars :

Treatments : - four dates of planting
- six cowpea cultivars

Date of planting : D1 = June 15
D2 = July 11
D3 = July 29
D4 = -

Block 1

2. Effect of dates of planting on the performance of photo-sensitive cowpea cultivars :

Treatments : - four dates of planting£
- six cowpea cultivars

Date of planting : D1 = June 15
D2 = July 11
D3 = July 29
D4 = -

Block 1

3. Effect of plant population on the performance of photo-insensitive cowpea cultivars

Treatments : - two cowpea cultivars
- two rowspacings
- three plant populations

Date of planting : July 11

Block 1

4. Response of local cowpea cultivars to soil applied P_2O_5

Treatments : - three P_2O_5
- two phosphorous fertilizer levels
- six cowpea cultivars

Date of planting : July 13

Block 3

5. Effect of seed bed preparation methods on the performance of photo-sensitive and photo-insensitive cowpea cultivars

Treatments : - two cowpea cultivars
- four seed bed preparation methods

Date of planting : July 11

Block 2

IV. SOIL IMPROVEMENT STUDY

Effect of cowpea and crotalaria on soil improvement.

Treatments : - two legume crops
- one sorghum crop
- two phosphorous fertilizer carriers

Date of planting : July 14

Block 3

V. OBERVATION PLOTS

Effect of soil preparation methods on the performance of cowpea and maize-cowpea relay cropping system :

Treatments : - zero-tillage + mulching
- hand hoeing
- tractor plowing

Date of planting : June 28

Block 2

B. LOUMBILA

I. MAIZE-COWPEA RELAY CROPPING SYSTEM

Introduction of maize-cowpea relay cropping system in Sudan Savanna.

Treatments : - two cowpea dates of planting ;
- two photo-insensitive cultivars ;
- two photo-sensitive cultivars
- seed bed preparation methods

Date of planting : Maize : June 24
Cowpea D1 = July 18
D2 = -

Block C

II. MANAGEMENT OF PURESTAND COWPEAS

Effect of preceeding crops and soil preparation methods on the performance of cowpeas.

Treatments : - six preceeding crop treatments
- four soil tillage methods

Date of planting of preceeding crops : June 27

III SOIL IMPROVEMENT

Effect of cowpea and crotalaria on soil improvements :

Treatments : - two legume crops
- one sorghum crop
- two phosphorous fertilizer carriers

Date of planting : July 18

IV. OBSERVATION PLOTS

Effect of prostrate cowpea cultivars on the performance of intercropped maize.

Treatments : - two dates of planting
- six oombinations of rowspacings, plant densities and cowpea cultivars as maize-cowpea mixture treatments ;
- two cowpea purestand and one maize purestand treatments.

Date of planting : June 21

C. KAMBOINSE

I. SORGHUM-COWPEA INTERCROPPING SYSTEM

Effect of intercropping sorghum and cowpea on insect pest incidence and yield performance of two cowpea cultivars.

Treatments : - two cowpea cultivars
- two sorghum-cowpea mixture densities
- two insecticide treatments

Date of planting : July 4

II. MANAGEMENT OF PURESTAND COWPEAS

1. Effect of dates of planting on the performance of photo-insensitive cowpea cultivars

Treatment : - four dates of planting
- six cowpea cultivars

Date of planting : D1 =:June 15
D2 = July 11
D3 = July 29
D4 = -

2. Effect of dates of planting on the performance of photo-sensitive cowpea cultivars :

Treatments : - four dates of planting
- six cowpea cultivars

Date of planting : D1 = June 15
D2 = July 11
D3 = July 29
D4 = -

3. Effect of positions in the toposequence and seed bed preparation methods on the performance of cowpea.

Treatments : - five positions in the toposequence
- two seed bed preparation methods
- two dates of planting

Date of planting : July 5

III. STRIGA RESISTANCE STUDY

Resistance of six cowpea cultivars to infestation of striga gesneroides.

Treatments : - three dates of planting
- six cowpea cultivars

Date of planting : June 21
July 18

D. DJIBO

I. COWPEA-MILLET INTERCROPPING SYSTEM

Comparison of extra-early and local-early cowpea cultivars in a millet-cowpea intercropping system.

Treatments :
- two dates of cowpea planting
- six combinaiions rowspacings, plant densities and cowpea cultivars as millet-cowpea mixture treatments
- two cowpea purestand and one millet purestand treatments.

Date of planting : June 30, 1983

II. MANAGEMENT OF COWPEA PURESTAND

1. Effect of dates of planting on the performance of photo-insensitive cowpea cultivars :

Treatments :
- three date of planting
- six cultivars

Date of planting :
- June 22
- July 7
- July 16

2. Effect of plant population on the performance of photo-insensitive cowpea cultivars.

Treatments :
- two cultivars
- two rowspacings
- three plant populations

Date of planting : July 27

ENTOMOLOGY PROGRAM 1983 (IST SEASON)

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A. KAMBOINSE

I. STUDIES ON HOST-PLANT RESISTANCE

1. Thrips

Screening of promising cowpea varieties for resistance to flower thrips in a trial.

Nº of entries : 5 (TVu 1509, TVu 2870, TVx 3236, Ife brown and KN-1)
Nº of replications : 5
Plot size : 6 rows x 5 m
Location : farmers field near Kamboinse
Date of planting : July 9, 1983

2. Maruca

A trial on screening of promising cowpea lines for resistance to Maruca

Nº of entriés : 7 (TVu 946 at 2 planting dates, TVx 3236, VITA-5, SUVITA-2,Kamboinse local and KN-1)
Nº of replications : 5
Plot size : 6 rows x 5 m
location : F6 at Kamboinse station
Date fo planting : July 18, 1983 (July 27 for second planting of TVu 946

3. Bruchids

Testing of cowpea breeding material, génerated from fallowing crosses, for resistance to callosobruchus maculatus

i) Advanced generations from the cross SUVITA-2 x TVu 2027 to combine striga and bruchid resistance ;

2. Seeds of several hundred F2 plants from 7 double crosses for multiple insect resitance will be screened for bruchid resistance ;

3. Segregating material to study the inheritance of buchid resistance ;

Collaborator DR. AGGARWAL, Cowpea Breeder

II STUDIES ON POPULATION TRENDS OF COWPEA PEST

To establish the population trends of cowpea pests viz- aphids, thrips, maruca and pod-screking bugs, three separate trials have been planted. A standardized sampling procedure will be used to quantity the population of each insect.

1. Studies on population trends of flower thrips

Variety : KN-1
Plot size : One big plot of 25 m^2
Replication : unreplicated
Location : farmers field near Kamboinse
Date of planting : July 9, 1983

2. Studies on population trends of Maruca

Variety : KN-1
Plot size : One big plot of 25 m^2
Replication : unreplicated
Location : farmer's field near Kamboinse
Date of planting : July 9, 1983

3. Studies on population trends of aphids and pod-sucking bugs

Variety : KN-1
Plot size : One big plot of 25 m^2
Replication : unreplicated
Location : farmer's field near Kamboinse
Date of planting : July 9, 1983

III. STUDY PEST PROBLEMS IN EARLY MATURING VARIETIES

Glip Program at IITA has formulated a trial on early maturing (60 days) varieties. This trial is known as an "Internation Trial-1". The objective of this study is to gather information on the ocurrence and int nsity of potential cowpea pests.

Entries : 10
Replications : 4
Plot size : 4 rows x 4 m
Location : Farmer's field near Kamboinse
Date of planting : July 9, 1983

IV STUDY ON THE OCURRENCE OF COWPEA PESTS IN MONOCULTURE OF COWPEA VS COWPEA GROWN AS INTERCROP WITH SORGHUM

1. Study on the incidence of cowpea pests on cowpea, in cowpea/sorghum intercropping trial

Varieties : TVx 3236 and KN-1
Cropping systems : monocrop cowpea (66,666 plants/ha)
intercrop cowpea (33,333 plants/ha)
intercrop cowpea (66,666 plants/ha)
Insect control : no spray and minimum spray (2sprays)
Replications : 4
Plot size : 6.5 x 7 m
Location : F2 and F3 Kamboinse station
Date of planting : 4.07.1983

Collaborator DR. MULEBA, Cowpea Agronomist

2. Study on the incidence of cowpea pests on cowpea, in cowpea/sorghum intercropping

Varieties : TVx 3236 and KN-1
Cropping system : Cowpea monocrop (66,666 plants/ha)
Intercrop cowpea (33,333 plants/ha)
Intercrop cowpea (66,666 plants/ha)
Plot size : 16 m x 10 m
Replication : unreplicated
Location : Farmer's field at 2 different places near Kamboinse
Date of planting : 23 June, 1983
29 June, 1983

Collaborator DR. MULEBA, Cowpea Agronomist.

V. EFFECT OF DATE OF PLANTING ON COWPEA INSECTS

1. Study on the incidence of cowpea pest in early maturing photo-period insensitive varieties

Nº of entries : 6
Replications : 4
Plot size : 4 rows x 5 m
Date of planting : 4 (17.06.83, 4.07.83, 27.07.83)
Location : F5 at Kamboinse station

Collaborator DR. MULEBA, Cowpea Agronomist

2. Study on the incidence of cowpea pests in photo-period sensitive varieties

Nº of entries : 6
Replications : 4
Plot size : 4 rows x 5 m
Date of planting : 4 (17.06.83, 4.07.83, 27.07.83)
Location : F4 at Kamboinse station

Collaborator DR. MULEBA, Cowpea Agronomist

B. FARAKO-BA

I. STUDIES ON POPULATION TRENDS OF COWPEA PESTS

To establish the population trends of cowpea pests viz aphids thrips, Maruca and pod-sucking bugs in savanna region, three separate trials have been planted. A standardized sampling procedure will be used to quantify the population of each insect.

1. Studies on population trends of thrips

Variety : KN-1
Replication : unreplicated
Plot size : One big plot of 25 m^2
Location : Block n°3
Date of planting : 13.07.1983

2. Studies on population trends of flower bud [illegible]

Variety : KN-1
Replication : unreplicated
Plot size : One big plot of 25 m^2
Location : Block n°3
Date of planting : 13.07.1983

3. Studies on population trends of aphids and pod-sucking bugs

Variety : KN-1
Replication : unreplicated
Plot size : One big plot of 25 m^2
Location : Block n°3
Date of planting : 18.07.1983

II. EFFECT OF DATE OF PLANTING ON COWPEA INSECTS

1. Study on the incidence of cowpea pests in early maturing photo-period insensitive varieties

N° of tntries : 6
Replications : 4
Plot size : 6 rows x 5 m
Date of planting : 4 (6.06.83, 4.07.83, 29.07.83)
Location : Block n°1

Collaborator DR. MULEBA, Cowpea Agronomist

2. Study on the incidence of cowpea pests in photo-period sensitive varieties

N° of entries : 6
Replications : 4
Plot size : 6 rows x 5 m
Date of planting : 4 (6.06.83, 11.07.83, 29.07.83)
Location : Block n°1

Collaborator DR MULEBA, Cowpea Agronomist

III. COMPARISON OF EXTRA EARLY AND LOCAL COWPEA CULTIVARS IN MAIZE COWPEA INTERCROPPING SYSTEM

Varieties : IT 82E-60, Dembo local of cowpea, TZPB of maize
Replication : 4
Plot size : 6 x 6 m
Location : Block n°1
Date of planting : 2 (One, cowpea planted earlier than maize 16.06.83 ; Two, cowpea planted same time as maize 30.06.83)

C. POBE

I. STUDIES ON POPULATION TRENDS OF COWPEA PESTS

To establish the population trends of cowpea pests viz-aphids, thrips, Maruca and pod-sucking bugs in Sahel region, three separate trials habe been planted. A standardized sampling procedure will be used to quantify the population of each insect.

1. Studies on population trends of thrips

Variety : KN-1
Replications : unreplicated
Plot size : One big plot of 25 m^2
Location :
Date of planting :

2. Studies on population trends of Maruca

Variety : KN-1
Plot size : One big plot of 25 m^2
Replications : unreplicated
Location :
Date of planting :

3. Studies on population trends of aphids and pod-sucking bugs

Variety : KN-1
Replication : unreplicated
Plot size : One big plot of 25 m^2
Location :
Date of planting :

II. STUDY ON PEST INCIDENCE ON COWPEA IN MONOCROP VS COWPEA INTERCROP WITH MILLET

1983-06

PROGRAM OF RESEARCH 1983 FIRST SEASON

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