

RP. 01099

78

APAD-ICRISAT COLLABORATIVE

DROUGHT RESEARCH:

ANANTAPUR, 1986

DETAILS OF FIELD EXPERIMENTS

International Crops Research Institute for the Semi-Arid Tropics  
at Andhuru 502324, A.P., India.

in collaboration with

Andhra Pradesh Agr. Cultural University, Rajendra Nagar,  
500030, A.P., India.

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590030, A.P., India.

ICRISAT Library

RP 01099

**NOTE:**

1. All the ICRISAT Center research workers were urged to supply information on their experiments at the beginning of the season (preferably in a standard proforma supplied; see sorghum experiments; however, the information supplied by them are compiled as received, keeping the originality in their presentation intact). You might like to contact the concerned scientists themselves, if more information is needed.
2. We also propose to compile 'results' at the end of the year to meet our obligations here, as well as for the benefit of AP&U cooperators and others.
3. Following is a summary of research activities at Anantapur substation during 1986:

CROP	SORGHUM	GROUNDNUT	MILLET	TOTAL (list)
No. of disciplines	4	5	3	7 (Phy, Path, Micro, Brd, G. resources, RMP-Agmt., Statistics)
No. of projects	5	9	3	17
No. of experiments	10	19	5	34
No. of scientists	7	7	4	18
Area (approx.; ha)	2.2	2.1	2.3	6.6

4. Besides above experiments, there is one experiment designed to study the effect of phosphate and mycorrhiza on groundnut in a farmer's field.
5. We wish to thank all the scientists/RAs/FAs contributing the required information and enabling us to compile this before harvest!
6. Comments and suggestions are solicited.
7. Thank you for your interest.

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**BREEDING**

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Breeding expts.  
pages 28 & 29  
only

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**Project Number: FS - 102**

**Title : Studies on crop-weather modeling  
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• • MILLET • •

MICROBIOLOGY

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Title : Pearl millet-mycorrhiza

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PHYSIOLOGY

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Title: Repeatability and applicability of drought nursery  
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Title: IPMAT applicability of drought nursery results  
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Title: Identification and assessment of drought resistance

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- - - X X I - - -

# SORGHUM





1. Experiment title : Asian Regional Sorghum Variety Adaptation Trial (ARSVAT 86)
2. Experiment number : 1
3. Project - a) Title : International testing and cooperation  
b) Number : S-101(85)-IC
4. a) Name of the scientist : S.Z.Mukuru  
b) Cooperating scientist :
5. Objectives : Yield Trial
6. Location(s) : Anantapur, Field no.17B
7. Experimental details :
  - a) Treatments : Entries
  - b) Design : Lattice
  - c) Plot size : Gross = 9.6 sq.m (4 rows x 4m x 0.6m)
  - d) No. of entries : 25 (List below)
  - e) No. of rows/entry : 4
  - f) No. of replications : 3
  - g) Date of sowing : 15th Aug '86
  - h) Fertilizer : Basal 28:28:0, @ 150 kg ha<sup>-1</sup>, Top dress urea @ 100 kg ha<sup>-1</sup>, on 1st Sep 1986
  - i) Plant protection : Research
  - j) Area to be covered : 0.01 ha
  - k) Data to be recorded : - Plant stand  
- days to 50% flower  
- plant height  
- scores on agronomic aspect, and disease resistance  
- heads/plot  
- head weight  
- grain weight

**ASIAN REGIONAL SOCCER VARIETY ADAPTATION TRIAL**  
**(ANST/AT-06): List of entries**

E No.	Origin	Pedigree
1	ICSV 102	(E 35-1 x Ra/B-394)-1-1-2
2	ICSV 110	[(SC 423 x CSV 4) x E 35-1]-2-1
3	ICSV 112	[(IS 12622C x555)(IS 3612C x22198))-5-1 xB 35-1]-5-2
4	ICSV 162	(CSV 4 x CG x 370)-2-1-4-4
5	ICSV 166	(20-67 x SB 1067)-4-1-1-1B
6	ICSV 197	(IS 3443 x DJ 6514)-1-1-1-1-1
7	ICSV 200	[(148 x E 35-1)-1-2-4 x IS 17797]-1-2-5
8	ICSV 202	(SPV 350 x SPV 475)-2-2-7
9	ICSV 207	[(SPV 475 x(IS 12611 x SC 108-3))]-4-4-8-27-2
10	ICSV 209	[(148 x E 35-1)-4-2-4 x IS 17797]-3-4-4
11	ICSV 210	(SPV 350 x SPV 475)-2-2-5
12	ICSV 211	(SPV 350 x SPV 475)-7-1-2-1
13	ICSV 212	(PLR 274 x CSV 4)-6-2-1
14	ICSV 213	(RS/R x CSV 4)-1525-1-1-4-1
15	ICSV 214	(PLR 141 x CSV 4)-1-2-4 x Ind. Syn. -3-3-4-6
16	ICSV 219	(E 35-1 x Ua/R-70-B)-2-1-1-2-3
17	ICSV 221	(E 35-1 x IS 3604)-4-1-1-2-1
18	ICSV 224	(PS 21143 x E 35-1)-2-2-2-4
19	ICSV 225	(PS 21143 x E 35-1)-3-2-2-4
20	ICSV 199	[(IS 19614 x(148 xE35-1))-11 xCSV4]-5-3-4-4]-10-2
21	CSH 6	
22	CSH 9	
23	CSH 11	
24	CSV 11	
25	Anantapur local	

--- X X X ---

1. Experiment title : Asian Regional Sorghum Hybrid Adaptation Trial (ARSRAT 86)
2. Experiment number : 2
3. Project - a) Title : International testing and cooperation  
b) Number : S-101(85)-IC
4. a) Name of the scientist : S.Z.Mukuru  
b) Cooperating scientist :
5. Objectives : Yield Trial
6. Location(s) : Anantapur, Field no.17B
7. Experimental details :
- a) Treatments : Entries
- b) Design : RBD
- c) Plot size : Gross = 9.6 sq.m (4 rows x 4m x 0.6m)
- d) No. of entries : 32
- e) No. of rows/entry : 4
- f) No. of replications : 3
- g) Date of sowing : 15th Aug '86
- h) Fertilizer : Basal: 28:28:0, @ 150 kg ha-1, Top dress: urea @ 100 kg ha-1 on 1st Sep '86
- i) Plant-protection : Research
- j) Area to be covered : 0.15 ha
- k) Data to be recorded : - Plant stand  
- days to 50% flower  
- plant height  
- scores on agronomic aspect, and disease resistance  
- heads/plot  
- head weight  
- grain weight

**ASIAN REGIONAL DOMESTIC HYBRID ADAPTATION TRIAL  
(ASBRAT-96): List of entries**

E No.	Origin	Pedigree
1	ICSH 106	296 A x (SC 108-3 x CSV 4)-20-2-2
2	ICSH 109	x [(SC 108-3 x E 35-1)-5-1 x CSV 4]-2-2-1-1
3	ICSH 110	x (SC 108-3 x CSV 4)-51-1
4	ICSH 116	2219 A x (UCHV2 x CG x 370)-2-1-2
5	ICSH 117	296 A x PLR 101 x IS 1082)-4-3-3
6	ICSH 120	x DiAllel-475-746)-4-2-1-5
7	ICSH 134	2219 A x (UCHV2 x CG x 370)-4-2-3
8	ICSH 138	296 A x (PLR 266 x CSV 4)-2-2-2-3-2
9	ICSH 164	D2 A x [SPV 105 x (SC 108-4-8 x CSV 4)-1]-14-2-1
10	ICSH 174	296 A x (SC 108-3 x E 35-1)25-1
11	ICSH 179	2077 A x (SPV 69 x E 12-5)-25-7-1-1-2
12	ICSH 180	D3 A x [(SPV 105 x SC 108-4-8)-CSV 4]-14-2-1
13	ICSH 182	MA 9 x [(IS 12622C x555)(3612C x2219B)-5-1 xE35-1]-5-2
14	ICSH 184	MA 10 x (SC 108-3 x 148)-18-4-1
15	ICSH 185	MA 12 x [(SC108-3xCSV4)(SC110-14xSC108-3x148)]-12-5-13
16	ICSH 187	MA 9 x (SPV 99 x E 35-1)-2-2-1
17	ICSH 190	MA 10 x [(IS 10927 x UCHV2)-16-1 x CSV 4]-5
18	ICSH 194	MA 12 x [(SPV 35 x E 35-1) x CSV 4]-16
19	ICSH 195	x [(IS 12645C x CSV 4)-45-1 x CSV 4]-6-1-4
20	ICSH 196	x [(SC 108-3 x E 35-1)-5-1 x CSV 4]-2-2-1-1
21	ICSH 197	x [(IS 10927 x UCHV2)-16-1 x CSV 4]-5
22	ICSH 199	D1 A x (SPV 69 x E 12-5)-28-4-1-1
23	ICSH 203	SPL 180A x (CSV 4 x GG x 370)-21-1-6-1
24	ICSH 204	SPL 204A x [(CSV 4 x Bulk Y) x D 181]-1-1-1
25	ICSH 205	SPL 117 A x (PLR 266 x CSV 4)-2-2-2-1-1
26	ICSH 281	296 A x (SC 108-3 x DiAllel)-21-2-3-3
27	CSH 5	(2077A x CS 3541)
28	CSH 6	(2019A x CS 3541)
29	CSH 9	(296A x CS 3541)
30	CSH 11	(296A x MR-750)
31	Hageen Durra (TX 623A x Karpur-1597)	
32	Anantapur local	

X X X

1. Experiment title : **Advanced Variety Trial (AVT 86)**
2. Experiment number : **3**
3. Project - a) Title : **International testing and cooperation**  
                   b) Number : **S-101(85)-IC.s1**
4. a) Name of the scientist : **S.Z.Mukuru**  
     b) Cooperating scientist :
5. Objectives : **Yield Trial**
6. Location(s) : **Anantapur, Field no.19E**
7. Experimental details :
  - a) Treatments : **Entries**
  - b) Design : **Lattice**
  - c) Plot size : **Gross - 14.4 sq.m (6 rows x 4m x 0.6m)**
  - d) No. of entries : **36**
  - e) No. of rows/entry : **6**
  - f) No. of replications : **3**
  - g) Date of sowing : **14th Aug '86**
  - h) Fertilizer : **Basal: nil; Top dress: urea @ 100 kg ha-1 on 2nd Sep '86**
  - i) Plant protection : **Research**
  - j) Area to be covered : **0.2 ha**
  - k) Data to be recorded :
    - Plant stand
    - days to 50% flower
    - plant height
    - scores on agronomic aspect, and disease resistance
    - heads/plot
    - head weight
    - grain weight

**ADVANCED VARIETAL TRIAL - 1966K  
(AVT-86): List of entries**

<b>E No.</b>	<b>Origin</b>	<b>Pedigree</b>
1	ICSV 230	(SPV 475 x QL 3)-1-1-1-2
2	ICSV 233	[IS 9562 x (IS 12611 x SC 108-3)]-3 2-2-5-1
3	ICSV 234	[IS 20509 x (IS 12611 x SC 108-3)]-1-1-2-4-3
4	ICSV 239	[(SC 108-3 x CSV 4)-16-3-1 x MR 801 x R2751]-4-1-1
5	ICSV 241	[A 137 x (SPV 351 x E 35-1) x CSV 4-16-3]-4-3
6	ICSV 246	[IS 20509 x (IS 12611 x SC 108-3)-1-1-2-1]-2-1-4
7	ICSV 247	(E 36-1 x CSV 4)-3-5-1-2-2
8	ICSV 249	[(PLR 101 x IS 1082)-4-4-2-5 x (370 x BG 12)]-1-11
9	ICSV 252	[Ind Syn. -600-2-1 x (Ra/R x CSV 4)-1525-3-2-1-1-2]-2
10	ICSV 255	[(PLR 101 x IS1082)-4-4-2-5 x (Ra/R x CSV4-1525)]-1-4-1-1
11	ICSV 261	[(Ra/R x CSV 4-1525)-1-1 x SC 108-3]-1
12	ICSV 272	[(M 35-1 x M 1009)-3-2-1 x P5-6]-5-2-3-1-1
13	ICSV 273	[(M 35-1 x M 1009)-3-2-1 x P5-6]-5-2-3-1-2
14	ICSV 292	[(22-40 x SPV 105)-2-9-1 x SPV 233]-2-1-1-3
15	ICSV 295	[(M 35-1 x M 1009)-3-2-1 x 6 P5'S]-5-1-4-1-1
16	ICSV 296	[(M 35-1 x M 1009)-3-2-1 x 6 P5'S]-5-1-4-2-1
17	ICSV 298	[(M 35-1 x M 1009)-3-2-1 x 6 P5'S]-5-1-4-2
18	ICSV 313	(PM 7348 x Us/B-6)-5-2-5-1
19	ICSV 316	(PM 7348 x SPV 351)-7-1-2
20	ICSV 319	(PM 7348 x SPV 351)-10-8-2
21	ICSV 330	(PS 21143 x E 35-1)-2-2-2-3
22	ICSV 331	(PS 21143 x E 35-1)-2-2-3-1
23	ICSV 332	(PS 21143 x E 35-1)-2-2-4-1
24	ICSV 335	(PS 21143 x E 35-1)-2-2-4-4
25	ICSV 336	(PS 21143 x E 35-1)-2-2-4-7
26	ICSV 338	(PS 21143 x E 35-1)-3-2-2-3
27	ICSV 339	(PS 21143 x E 35-1)-3-2-3-3
28	ICSV 340	(PS 21143 x E 35-1)-3-2-3-4
29	ICSV 341	(PS 21143 x E 35-1)-4-1-2-1
30	ICSV 361	(PS 18601 x SPV 351)-32-2-1-1
31	SAR 1	(555 x 168)-1-1-1
32	SAR 34	(148 x Framida)-39-2-4-1-1-2-1
33	ICSV 166	(20-67 x SB 1067)-4-1-1-1-B
34	SPV 475	[(IS 12622C x 555)(3612C x 2219B)-5-1 x E35-1]-5-2
35	CSH 11	296 A x (SC 108-3 x CSV4)-27-2-1
36	CSH 9	296 A x CS 3541

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1. Experiment title : **Advanced Hybrid Trial (AHT 86)**
2. Experiment number : **Expt-27**
3. Project - a) Title : **Development of improved female parents with milo and other cytoplasm and their evaluation in hybrid production.**  
 b) Number : **S-104(85)IC**
4. a) Name of the scientist : **D.S.Murthy**  
 b) Cooperating scientist :
5. Objectives : **To evaluate hybrids and select the better yielding hybrids over the check hybrids.**
6. Location(s) : **Anantapur, field no.198**
7. Experimental details :
  - a) Treatments : **Entries**
  - b) Design : **Lattice**
  - c) Plot size : **Gross = 14.4 sq.m (6 rows x 4m x 0.6m)**
  - d) No. of entries : **36**
  - e) No. of rows/entry : **6**
  - f) No. of replications : **3**
  - g) Date of sowing : **14th Aug '86**
  - h) Fertilizer : **Basal: nil; Top dress: urea @ 100 kg ha-1 on 2nd Sep '86**
  - i) Plant protection : **Research**
  - j) Area to be covered : **0.2 ha**
  - k) Data to be recorded :
    - Plant stand
    - days to 50% flower
    - plant height
    - scores on agronomic aspect, and disease resistance
    - heads/plot,
    - head weight
    - grain weight

**ADVANCED HYBRID TRIAL - 1966**  
**(AHT-86): List of entries**

<b>E No.</b>	<b>Origin</b>	<b>Pedigree</b>
1	ICSH 206	ICSA 3 x (SC108-3 x CS3541)27-2-1
2	ICSH 208	'' x (SC108-3 x CS3541)11-2-3
3	ICSH 210	ICSA 4 x (SC108-3 x CS3541)27-2-1
4	ICSH 221	ICSA 7 x (IS9327 x US/R BULK)6-1-2-1-1
5	ICSH 225	ICSA 8 x (IS9327 x US/R BULK)6-1-2-1-1
6	ICSH 228	ICSA 9 x (IS9327 x US/R BULK)6-1-2-1-1
7	ICSH 229	ICSA11 x (SC108-3 x CS3541)27-2-1
8	ICSH 230	ICSA11 x [(SC108-3 x E35-1)CS3541]2-2-1
9	ICSH 231	ICSA11 x (SC108-3 x CS3541)11-2-3
10	ICSH 232	ICSA11 x (SC108-3 x 148)18-4-1
11	ICSH 233	ICSA11 x (IS9327 x US/R BULK)6-1-2-1-1
12	ICSH 243	ICSA14 x (IS9327 x US/R BULK)6-1-2-1-1
13	ICSH 245	ICSA16 x [(SC108-3 x E35-1)CS3541]2-2-1
14	ICSH 259	ICSA21 x [(SC108-3 x E35-1)CS3541]2-2-1
15	ICSH 266	ICSA22 x (SC108-3 x 148)18-4-1
16	ICSH 281	296A x (SC108-3 x Diallel)21-2-3-3
17	ICSH 331	ICSA38 x (SC108-3 x Diallel)21-2-3-3
18	ICSH 296	ICSA28 x (IS9327 x US/R BULK)6-1-2-1-1
19	ICSH 301	ICSA30 x (SC108-3 x CS3541)27-2-1
20	ICSH 304	ICSA30 x (SC108-3 x 148)18-4-1
21	ICSH 305	ICSA30 x (IS9327 x US/R BULK)6-1-2-1-1
22	ICSH 310	ICSA32 x (SC108-3 x CS3541)27-2-1
23	ICSH 311	ICSA34 x ( '' )27-2-1
24	ICSH 316	ICSA35 x (SC108-3 x CS3541)27-2-1
25	ICSH 318	ICSA35 x (SC108-3 x CS3541)11-2-3
26	ICSH 319	ICSA35 x (SC108-3 x 148)18-4-1
27	ICSH 321	ICSA36 x (SC108-3 x CS3541)27-2-1
28	ICSH 332	ICSA38 x (IS9327 x US/R BULK)6-1-2-1-1
29	ICSH 333	ICSA40 x (SC108-3 x CS3541)27-2-1
30	ICSH 336	ICSA40 x (SC108-3 x 148)18-4-1
31	ICSH 109	296A x [(SC108-3 x E35-1)CS3541]2-1-2
32	Hageena Durra T	x A623 x Karper-1597 (Hageena Durra)
33	CSH-6	2219A x CSV4
34	CSH-9	296A x CSV4
35	CSH-11	296A x (SC108-3 x CSV4)-27-2-1
36	SPV-475	[(IS12622x 555)(IS3612x 2219B)-5-1x E35-1]-5-2



1. Experiment title : **Evaluation of Selected Sorghum Material for Drought Tolerance**
2. Experiment number : 6
3. Project title : **Factors affecting plant survival from midseason stress**  
     number : S 107(85)IC
4. a. Name of the scientist : J.M.Peacock  
     b. Cooperating scientist :
5. Objectives : **To further test the performance of selected germplasm lines under drought conditions for factors affecting plant survival from midseason and adaptation to terminal stress**
6. Location(s) : **Anantapur, Field 17 E**
7. Experimental details :
  - a. Treatments : **Entries**
  - b. Design : **RBD**
  - c. Plot size : **4m X 4 rows (spacing at 60 cm)**
  - d. No. of entries : **113 (see list)**
  - e. No. of rows/entry : **4**
  - f. No. of replications : **3**
  - g. Date of sowing : **15 Aug 1986**
  - h. Fertilizer : **Basal: 28:28:0 @ 150 kg ha-1  
 Topdressed - Urea @ 100 kg ha-1  
 on 2nd September 1986**
  - i. Plant protection : **Research - applied Carbofuran granules in the whorls after final thinning**
  - j. Area to be covered : **0.4 ha**
  - k. Data to be collected : **Days to flower, Days to physiological maturity, plant height, and yield.**
  - l. Other relevant information : **-**

Project: S107(B5)IC; EXPT 6:  
(ANANTAPUR, 1986 Kharif): LIST OF ENTRIES

1	IS 121
2	IS 23687
3	IS 7305
4	IS 22064
5	IS 22312
6	IS 22291
7	IS 21479
8	IS 2874
9	IS 17605
10	IS 1347
11	IS 22380
12	IS 13441
13	IS 20969
14	IS 21436
15	IS 22070
16	IS 13437
17	CSR 5
18	CSR 6
19	CSR 8
20	CSR 9
21	SPB 263
22	SPB 225
23	SPV 351
24	SPV 386
25	ICSV 213
26	SPV 475
27	E 454
28	E 1734
29	IS 22314
30	IS 22471
31	IS 22382
32	IS 22399
33	IS 22315
34	IS 22426
35	IS 22375
36	IS 22474
37	IS 22307
38	IS 22475
39	IS 22479
40	IS 22374
41	IS 22472
42	IS 22234
43	IS 22270
44	IS 3511
45	IS 107
46	IS 9761
47	IS 14286
48	IS 12737
49	IS 12738
50	IS 12739
51	IS 12740
52	IS 12741

53	IS 12743	103	ICSB 5
54	IS 12744	104	ICSB 13
55	IS 12435	105	ICSB 33
56	IS 13306	106	ICSB 35
57	IS 13802	107	ICSB 36
58	IS 8662	108	A 1247-B
59	IS 9608	109	A 1263-B
60	IS 9708	110	A 1266-B
61	IS 3479	111	SAR 2
62	IS 3491	112	DKV 3
63	PA 10	113	DJ 1195
64	PA 12		
65	PA 20		
66	PA 22		
67	PA 23		
68	PA 43		
69	PA 43-32		
70	PA 46		
71	PA 46-31		
72	PA 36		
73	PA 36-25		
74	PA 37		
75	PA 37-24		
76	PA 38		
77	PA 39		
78	PA 60-21		
79	PA 61-20		
80	PA 62		
81	PA 62-19		
82	PA 64-17		
83	PA 65		
84	PA 67-14		
85	PA 68-13		
86	PA 69		
87	PA 69-12		
88	PA 70		
89	PA 71-10		
90	PA 73		
91	PA 73-6		
92	PA 79-2		
93	ICSB 197		
94	ICSB 233		
95	ICSB 243		
96	ICSB 264		
97	ICSB 279		
98	ICSB 281		
99	ICSB 284		
100	ICSB 297		
101	ICSB 310		
102	ICSB 321		

1. Experiment title : Evaluation of Sorghum Conversion Material
2. Experiment number : ANA-1
3. Project title : Sorghum productivity under terminal stress.  
number : S 109(85)IC
4. a. Name of the scientist : N.Seetharama  
b. Cooperating scientist : K.E.Prasada Rao
5. Objectives : Evaluation of converted sorghum under natural drought response
6. Location(s) : Anantapur, Field 19
7. Experimental details :
  - a. Treatments : Entries only
  - b. Design : RBD
  - c. Plot size : 1 row of 4m
  - d. No. of entries : 147 (See list)
  - e. No. of rows/entry : one
  - f. No. of replications : 2
  - g. Date of sowing : 14 Aug 1986
  - h. Fertilizer : Basal : Nil  
Topdressed : Urea @ 100 kg ha<sup>-1</sup>  
on 2nd Sept 1986
  - i. Plant protection : Research
  - j. Area to be covered : 0.1
  - k. Data to be collected : Days to flower, maturity, plant height,  
final yield, and biomass
  - l. Other relevant information :

## MATERIAL LIST OF EXPT: (Zero zero converted lines)

1	IS 956 X CS 3541
2	IS 956 X CS 3541
3	IS 2579 X 2219B
4	IS 2579 X 2219B
5	IS 3443 X SC 100-3
6	ET 12-5 X 2077B
7	ET 12-5 X 2077B
8	ET 12-5 X 2077B
9	ET 12-5 X 2077B
10	ET 12-5 X 2077B
11	ET 12-5 X 2219B
12	ET 35-1 X 2077B
13	ET 35-1 X CS 3541
14	ET 35-1 X CS 3541
15	ET 35-1 X CS 3541
16	ET 36-1 X 2077B
17	ET 36-1 X CS 3541
18	ET 36-1 X CS 3541
19	ET 36-1 X CS 3541
20	ET 12-5 X 2077B
21	ET 12-5 X 2077B
22	ET 12-5 X 2077B
23	ET 12-5 X 2077B
24	ET 12-5 X 2077B
25	ET 12-5 X 2077B
26	ET 35-1 X 2077B
27	ET 35-1 X 2077B
28	ET 35-1 X 2077B
29	ET 35-1 X 2077B
30	ET 35-1 X CS 3541
31	ET 35-1 X CS 3541
32	ET 35-1 X CS 3541
33	ET 36-1 X CS 3541
34	ET 36-1 X CS 3541
35	ET 36-1 X CS 3541
36	ET 36-1 X CS 3541
37	ET 36-1 X CS 3541
38	ET 36-1 X CS 3541
39	IS 2579 X 2219B
40	ET 12-5 X 2077B
41	ET 12-5 X 2077B
42	ET 12-5 X 2077B
43	ET 12-5 X 2219B
44	ET 35-1 X 2077B
45	ET 35-1 X 2077B
46	ET 35-1 X 2077B
47	ET 35-1 X CS 3541
48	ET 36-1 X CS 3541
49	ET 36-1 X CS 3541
50	ET 12-5 X 2219B
51	ET 12-5 X 2219B
52	ET 36-1 X CS 3541
53	IS 956 X 2077B

54 IS 3443 X SC 108-3  
55 IS 3443 X SC 108-3  
56 ET 12-5 X 2077B  
57 ET 12-5 X 2077B  
58 ET 12-5 X 2077B  
59 ET 12-5 X 2077B  
60 ET 12-5 X 2077B  
61 ET 12-5 X 2077B  
62 ET 12-5 X 2219B  
63 ET 12-5 X 2219B  
64 ET 12-5 X 2219B  
65 ET 35-1 X 2077B  
66 ET 35-1 X CS 3541  
67 ET 35-1 X CS 3541  
68 ET 35-1 X CS 3541  
69 ET 35-1 X CS 3541  
70 ET 36-1 X 2077B  
71 ET 36-1 X 2077B  
72 ET 36-1 CS 3541  
73 ET 36-1 CS 3541  
74 ET 36-1 CS 3541  
75 IS 6248 X 2077B  
76 ET 12-5 X 2077B  
77 ET 12-5 X 2077B  
78 ET 12-5 X 2077B  
79 ET 12-5 X 2077B  
80 ET 12-5 X 2077B  
81 ET 12-5 X 2077B  
82 ET 12-5 X 2077B  
83 ET 12-5 X 2077B  
84 ET 12-5 X 2077B  
85 ET 12-5 X 2077B  
86 ET 12-5 X 2077B  
87 ET 12-5 X 2077B  
88 ET 12-5 X 2077B  
89 ET 35-1 X CS 3541  
90 ET 35-1 X CS 3541  
91 ET 35 1 X SC 108-3  
92 ET 36 1 X CS 3541  
93 ET 36-1 X CS 3541  
94 ET 36 1 X CS 3541  
95 ET 36-1 X CS 3541  
96 ET 36-1 X CS 3541  
97 ET 36-1 X CS 3541  
98 ET 36-1 X CS 3541  
99 ET 36-1 X CS 3541  
100 ET 36-1 X CS 3541  
101 ET 36-1 X CS 3541  
102 ET 36-1 X CS 3541  
103 ET 36-1 X CS 3541  
104 ET 36-1 X CS 3541  
105 ET 36-1 X CS 3541  
106 ET 36-1 X CS 3541  
107 ET 1966 X 2077B  
108 IS 6928 X SC 108-3

109	ET	12-5	X	2077B
110	ET	12-		2077B
111	ET	12-		2077B
112	ET	12-		2077B
113	ET	12-		2077B
114	ET	12-		2077B
115	ET	12-		2219B
116	ET	12-		2219B
117	ET	12-		2219B
118	ET	12-		2219B
119	ET	12-		2219B
120	ET	12-5		2219B
121	ET	35-1		2077B
122	ET	35-1		2077B
123	ET	35-1		CS 3541
124	ET	36-1		CS 3541
125	ET	36-1		CS 3541
126	ET	36-1		CS 3541
127	ET	36-1		CS 3541
128	ET	36-1		CS 3541
129	ET	1966		2077B
130	ET	1966		2077B
131	ET	12-5		2077B
132	ET	12-5		2077B
133	ET	12-5		2077B
134	ET	12-5		2219B
135	ET	12-5		2219B
136	ET	35-1		2077B
137	ET	36-1		CS 3541
138	ET	36-1		CS 3541
139	ET	36-1		CS 3541
140	ET	36-1		CS 3541
141	ET	35-1		2077B
142	ET	35-1		2077B
143	ET	12-5		2219B
144	ET	12-5		2077B
145	ET	12-5		2077B
146	ET	36-1		CS 3541
147	ET	35-1		CS 3541

1. Experiment title : Multilocational Drought Trial
2. Experiment number : ANA-2
3. Project title : Sorghum productivity under terminal stress.  
number : S 109(85)IC
4. a. Name of the scientist : N.Seetharama  
b. Cooperating scientist :
5. Objectives : Evaluation for terminal-drought resistance, and relating performance under drought with phenology (with early planting)
6. Location(s) : Field 17E
7. Experimental details
- a. Treatments : Entries only
- b. Design : Triple Lattice
- c. Plot size : 4m X 2 rows at 60 cm spacing (4.8 m<sup>2</sup>)
- d. No. of entries : 100 (for list see Expt.ANA-4;Page:12)
- e. No. of rows/entry : 2
- f. No. of replications : 3
- g. Date of sowing : 15 Aug 1986
- h. Fertilizer : Basal : 28:28:0 @ 150 kg ha<sup>-1</sup>  
Topdressed : Urea @ 100 kg ha<sup>-1</sup>  
on 2nd Sept 1986
- i. Plant protection : Research
- j. Area to be covered : 0.12 ha
- k. Data to be collected : Days to flower, Days to Physiological Maturity, Plant height, Final dry matter and grain yield
- l. Other relevant information : Entries are same as in AICSIP trial, see under Expt.No: ANA-4 (below)



1. Experiment title : Comparison of sorghum 'composites' (sub-populations) under terminal -water stress.
2. Experiment number : ANA-3
3. Project a. Title : Sorghum productivity under terminal stress.
  - b. Number : S-109(85)IC
4. a. Name of the Scientist : N. Seetharama
  - b. Cooperating Scientist : B.V.S. Reddy
5. Objectives : Testing of sorghum sub-populations differing in height and maturity, along with check hybrids, varieties, and mixtures under terminal drought.
6. Location(s) : Anantapur
7. Experimental details
  - a. Treatments : Dry and wet, in two separate, but adjacent trials.
  - b. Design : 6x6 lattice
  - c. Plot size : 14.4 m<sup>2</sup> (net)
  - d. No. of entries : 36; 18 sub-populations, 5 selected hybrids and 4 varieties as checks, mixtures (see list).
  - e. No. of rows/entry : 6 (60 cm apart)
  - f. No. of replications : 3
  - g. Date of sowing : 2nd September 1986
  - h. Fertilizer : 28:28:0 @ 150 kg ha<sup>-1</sup> before planting, and 100 kg ha<sup>-1</sup> urea immediately after planting
  - i. Plant Protection : Intensive: carbofuran at planting and in whorls.
  - j. Area to be covered : 0.43 ha
  - k. Data to be recorded :
    - Days to 50% flowering
    - Dry matter and grain yield at harvest
    - Plant height
    - Seed size

1. ~~Other~~ relevant information : Please see next page:

1. These sub-populations were tested at ICRISAT Center, but not under drought. Will check following hypotheses:
  - a) Tall plants (with more stem reserves) are better adapted to terminal (post-flowering) drought (because of greater availability of preanthesis assimilates).
  - b) "Composite" sub-populations are more stable than hybrids or varieties under stress. At best, this trial will be helpful in testing above hypothesis; at worst, it will give another data set on comparison of these sub-populations with check hybrids and varieties under a stress environment.
2. This will help to further compare entries for the role of phenological differences in yield stability - can be repeated next year or at the Center.
3. Results from earlier evaluations (not conducted under stress): Population are numerically, but not statistically superior to best varieties. Populations yield 15% less than hybrid checks (results of BVSR).
4. Sub-population come from same population but grouped on the basis of height (synthetic).
5. Mixtures: 1:1, 1:3, and 3:1 of following pairs of hybrids (A) and varieties (B)
  - A. CSB6 and CSB9
  - B. SPV351 + SPV475

Origin	Entry	Pedigree
85 K		
A.8301	1	US/R-C4 X US/R-C4 Full sibs bulk
A.8302	.NO.2	US/R-C4 X WAE C3 paired crosses bulk
A.8303	.NO.3	US/R-C4 X US/R-C4 FS very Tall bulk-co
A.8304	.NO.4	US/R-C4 X US/R-C4 FS Medium Tall bulk-co
A.8305	.NO.5	US/R-C4 X US/R-C4 FS Medium bulk-co
A.8306	.NO.6	US/R-C4 X WAE C3 Paired crosses V.tall bulk-co
A.8307	.NO.7	US/R-C4 X WAE C3 Paired crosses
A.8308	.NO.8	US/R-C4 X WAE C3 Paired crosses
A.8309	.NO.9	US/R-C4 X US/R-C4 FS V.Tall bulk C1
A.8310	.NO.10	US/R-C4 X US/R-C4 FS M.Tall bulk C1
A.8311	.NO.11	US/R-C4 X US/R-C4 FS Medium bulk C1
A.8312	.NO.12	US/R-C4 X WAE C3 Paired crosses V.Tall bulk C1
A.8313	.NO.13	US/R-C4 X WAE C3 Paired crosses M.Tall bulk C1
A.8314	.NO.14	US/R-C4 X WAE C3 Paired crosses Medium bulk C1
A.8315	.NO.15	US/R-C4 X US/R-C4 FS V.Tall bulk C2
A.8316	.NO.16	US/R-C4 X US/R-C4 FS M.Tall bulk C2
A.8317	.NO.17	US/R-C4 X US/R-C4 FS Medium bulk C2
A.8318	.NO.18	US/R-C4 X WAE C3 Paired crosses V.Tall bulk C2
A.8319	.NO.19	US/R-C4 X WAE C3 Paired crosses M.Tall bulk C2
A.8320	.NO.20	US/R-C4 X WAE C3 Paired crosses Medium bulk C2
	.NO.21	CSH-11 (SPH-221)
	E.NO.22	CSH-6
	E.NO.23	SPV-351
	E.NO.24	SPV-386
	E.NO.25	SPV-475
	E.NO.26	CSH-6 + CSH-9 (0:4)
	E.NO.27	CSH-6 + CSH-9 (1:3)
	E.NO.28	CSH-6 + CSH-9 (2:2)
	E.NO.29	CSH-6 + CSH-9 (3:1)
	E.NO.30	SPV-351 + SPV-475 (1:3)
	E.NO.31	SPV-351 + SPV-475 (2:2)
	E.NO.32	SPV-351 + SPV-475 (3:1)
	E.NO.33	CS-3541
	E.NO.34	SPH-263
	E.NO.35	SPH-280
	E.NO.36	CSH-5

1. **Experiment title** : **Screening of selected sorghums for terminal-drought resistance.**
2. **Experiment number** : **ANA-4**
3. **Project a. Title** : **Sorghum productivity under terminal stress.**
  - b. **Number** : **S-109(85)IC**
4. **a. Name of the Scientist** : **N. Seetharama**
  - b. **Cooperating Scientist** :
5. **Objectives** : **Evaluation for terminal-drought resistance, and relating performance under drought with phenology (and if possible, with potential yield within related material, if an irrigated 'control' treatment is possible.**
6. **Location(s)** : **Anantapur**
7. **Experimental details** :
  - a. **Treatments** : **Terminal stress treatments in a dry and an 'irrigated control', 'VET' -. 2 trials planted side by side.**
  - b. **Design** : **Lattice (10x10).**
  - c. **Plot size** : **5m x 2m = 10 m<sup>2</sup> (60 cm rows)**
  - d. **No. of entries** : **100 (see list)**
  - e. **No. of rows/entry** : **2 rows (60 cm apart)**
  - f. **No. of replications** : **2**
  - g. **Date of sowing** : **2nd September 1986**
  - h. **Fertilizer** : **28:28:0 @ 150 kg ha<sup>-1</sup> before planting, and 100 kg ha<sup>-1</sup> urea after planting**
  - j. **Area covered** : **0.2 ha**
  - k. **Data to be recorded** : **Anthesis dates  
Panicle emergence score, if needed  
Seed set-score, if needed  
Lodging count/non-senescence score  
Physiological maturity  
Plant height**

Plant number  
Grain and stover yield  
Others, as needed

1. Other relevant  
information

- 1) Lines will also be tested based on information again at Anantapur during 1987, and during rabi on stored moisture.
- 2) Measurement of yield in 'VET' trial (irrigated control) is very useful.
- 3) Irrigation till flowering in 'DRY' trial to avoid postponement of flowering due to stress.
- 4) Planting date adjusted to ensure stress during grain filling, avoiding as much of irrigation before flowering, as possible.
- 5) Head pests may be a problem in late-sown crop. Prophylactic sprays are needed.

**Project: S 109(85)IC; Expt.: ANA-4; Seed list  
SELECTED ENTRIES FOR DROUGHT SCREENING:**

**I. ENTRIES FROM AICSIP: (Sent by Dr R.Vidyabhusanan)**

- 1 SPV-462
- 2 SPV-475
- 3 SPV-544
- 4 SPV-678
- 5 SPV-690
- 6 SPV-736
- 7 SPV-756
- 8 SPV-772
- 9 SPV-775
- 10 CSV-10 (SPV-246)
- 11 CSV-11 (SPV-351)

**II. ENTRIES FROM GS2 STRESS STUDY, BASED ON OBSERVATION AT ICRISAT  
CENTER DURING SUMMER AND AT ANANTAPUR DURING RAINY SEASON  
(J.N.Peacock)**

- (Resistant)**
- 12 IS-13441
  - 13 IS-1347
  - 14 IS-20969

- (Susceptible)**
- 15 IS-7720
  - 16 IS-17605
  - 17 IS-12738
  - 18 IS-12739
  - 19 IS-12740

**III. 1985 GERMPLASH SCREENING AT ANATAPUR**

**DROUGHT TRIAL I**

- 20 IS-23687
- 21 IS-7305
- 22 IS-22064
- 23 B-1734
- 24 IS-22312
- 25 IS-22291
- 26 IS-21479
- 27 IS-2874
- 28 IS-22253
- 29 IS-21436
- 30 IS-22070
- 31 IS-121
- 32 IS-13437
- 33 IS-13448
- 34 IS-22380

**DROUGHT TRIAL II**

- 35 IS-22314

- 36 IS-22315
- 37 IS-22426
- 38 IS-22474
- 39 IS-22307

**IV MULTILOCATIONAL TRIALS: (Germplasm screened:  
1977-1982; BVSR + NS)**

- 40 IS-8662
- 41 IS-8344
- 42 IS-2311
- 43 IS-4760
- 44 IS-6928
- 45 IS-18451
- 46 IS-12611

**V 1983 TRIAL AT ANANTAPUR**

**(Germplasm)**

- 47 IS-22270
- 48 IS-22299
- 49 IS-22308
- 50 IS-2312
- 51 IS-5642
- 52 IS-8315

**VI 1985 TRIALS OF ICRISAT BREEDING MATERIAL (ANANTAPUR;1985K)  
Fev included based on multilocation data**

**AVT (>1000 Kg ha-1)**

- 53 ICSV-213
- 54 ICSV-221
- 55 ICSV-112
- 56 ICSV-225
- 57 ICSV-210
- 58 ICSV-224

**(Susceptible of 1985 evaluation)**

- 59 ICSV-218
- 60 ICSV-216
- 61 ICSV-226

**AET (>2257 Kg ha-1)**

- 62 ICSH-205
- 63 ICSH-164
- 64 ICSH-138
- 65 ICSH-110
- 66 ICSH-109
- 67 ICSH-153
- 68 ICSH-199

**(Susceptible)**

- 69 ICSH-191

**ISVAT (>1200 Kg ha-1)**

70 ICSV-111  
 71 ICSV-161  
 72 ICSV-145  
 73 ICSV-194

**(Susceptible)**

74 ICSV-188  
 75 ICSV-120  
 76 ICSV-110

**ISHAT (>1200 Kg ha-1)**

77 ICSH-134  
 78 ICSH-145  
 79 ICSH-142  
 80 ICSH-133  
 81 ICSH-156

**(Susceptible)**

82 ICSH-168  
 83 ICSH-178

**VII. SELECTIONS FROM B.V.S.REDDY (Selection during early generations at Anantapur and at ICRISAT Center)**

84 DKV-1  
 85 DKV-2  
 86 DKV-3  
 87 DKV-17  
 88 DKV-43  
 89 DKV-44  
 90 DKV-73  
 91 DKV-74

**VIII. CHECKS**

92 Hageen Durra  
 93 SPH-263  
 94 SPH-225  
 95 DJ-1195  
 96 V-302  
 97 CSV-5  
 98 CSH-5  
 99 CSH-9  
 100 Anantapur local



1. Experiment title : Multilocational evaluation of non-senescent sorghums under terminal water stress
2. Experiment number : ANA-5
3. Project
  - a. Title : Biology and epidemiology of sorghum root and stalk rot complex
  - b. Number : S-113(85)IC
4.
  - a. Name of the Scientist : S. Pande
  - b. Cooperative Scientist : N. Seetharama
5. Objectives : To evaluate and select sorghum germplasm under terminal drought for high yield and freedom from lodging.
6. Location(s) : Anantapur
7. Experimental detail :
  - a. Treatments : Dry and wet trials side by side
  - b. Design : unreplicated with repeated checks
  - c. Plot size : 2.4 m<sup>2</sup>
  - d. No. of entries : 36 (see list)
  - e. No. of rows/entry : one
  - f. No of replications with systematic check : 1 with checks repeated
  - g. Date of sowing : 2 September 1986
  - h. Fertilizer : 60 Kg N 26 Kg P ha<sup>-1</sup> before planting
  - i. Plant protection : Intensive; Carbofuran at planting and in whorls
  - j. Area to be covered : 0.03 ha
  - k. Data to be recorded :
    - Anthesis data
    - Agronomic score
    - 50% flower
    - Plant height
    - Plant diameter at physiological maturity
    - Tillering
    - No. of green leaves periodically

- counted from 50% flowering to physiological maturity
- Basal stalk and peduncle stay-green rating from 50% flowering to physiological maturity
  - Stem juiciness at physiological maturity
  - Sugar content (refractometer readings) at selected growth stages, after 50% flowering
  - Lodging from initiation upto physiological maturity
  - Seven days after physiological maturity lodged and non-lodged plants will be uprooted and split open to confirm stalk rot development, by measuring:
    - a. Soft stalks
    - b. Number of nodes crossed
    - c. Root infection
  - % green leaf area from flowering to maturity (if possible)
  - Plot yield, grain wt., and dry matter content
  - Growth analysis (5 plants/plot) at flowering and phy.maturity, if possible

**LIST OF ENTRIES: EXPT:5 NONSENSE LINES AND CHECKS**

1. Q-101
2. Q-102
3. Q-103
4. Q-104
5. IS-176
6. IS-181
7. IS-2404
8. IS-2954
9. IS-9377
10. IS-12675
11. IS-18696
12. IS-18739
13. E-36-1
14. M-35-1
15. BJ-111
16. BJ-112
17. ANNIGERI-1
18. SPV-86
19. PQ-51
20. PQ-54
21. PQ-56
22. PQ-58
23. PQ-60-2
24. PQ-61
25. PQ-66
26. PQ-70
27. PQ-73
28. PQ-74-1
29. PQ-74-2
30. PQ-76
31. CSH-6
32. E-36-1 (repeated)
33. M-35-1 (repeated)
34. CSH-9
35. SPH-280
36. SPV-86 (repeated)

**X X X**

## GROUNDNUT BREEDING YIELD TRIALS AT ANANTAPUR, 1986 RAINY SEASON

At ICRI SAT Center several high yielding breeding lines with resistance to rust, late leafspot, *Aspergillus flavus*, thrips and jassids have been developed. In addition early maturity cultivars which can mature within 100 days with high yield potential have been bred. With the objective of knowing the adaptability of these lines under Anantapur conditions a total of 11 yield trials are being conducted during 1986 rainy season. These include: four foliar diseases (rust and late leafspot) resistant lines trials, one *A. flavus* resistant lines trial, one pest resistant lines trial, three early maturity lines trials and two high yield and quality lines trials. Observations on yield and other agronomic characters will be made in all these trials. The details of the trials are given in Table 1.

In addition to these trials, 10 F<sub>2</sub> populations of drought resistance crosses have been planted for pedigree selection.

### Compiler's note:

If you need more details please see the 'handout':

### Groundnut Breeding

LEGUME PROGRAM  
Groundnut Breeding  
 FIELD MAPS  
 Rainy season 1986.,

a copy of which can be had from Dr. L.J. Reddy.

GROUNDNUT





Table 1. List of Groundnut Breeding Yield Trials planted at Anantapur, 1986 Kharif season

Project No.	Trial name	Description	No. of entries	Design	No. of Reps.
G-101(85)	MLYT-1	Foliar Diseases Resistant lines	36	6x6 TL	3
	MLYT-2	-do-	49	7x7 TL	3
	MLYT-3	-do-	25	5x5 TL	3
	MLYT-4	-do-	18	RBD	3
G-102(85)	Trial-78	A <sub>2</sub> flagY <sub>2</sub> resistant lines	25	5x5 TL	3
G-103(85)	Trial-71	Early maturity lines	36	6x6 TL	3
	Trial-72	-do-	36	6x6 TL	3
	Trial-73	-do-	36	6x6 TL	3
	MLT 86-4	High Yield & Quality lines	64	8x8 TL	3
	MLT 86-5	-do-	42	6x7 RI	3
G-109(85)	PMLYT 86-4	Pest resistant lines	81	9x9 TL	3

1. **Experiment title** : **Evaluation of selected groundnut cultivars for drought tolerance under rainfall conditions.**
2. **Experiment Number** : **8815**
3. **Project a. Title** : **Water stress effects on groundnuts**
- b. **Number** : **G-108(85)IC**
4. **a. Name of the Scientist** : **R.C. NAGESWARA RAO**
- b. **Cooperating Scientist** :
5. **Objectives** : **Field testing of selected groundnut cultivars under rainfed condition.**
6. **Locations** : **Agricultural Research Station, Dryland Farming, Bekalakunta, Anantapur, (Field 15N)**
7. **Experimental details** :
  - a. **Treatments** :
  - b. **Design** : **7 x 7 lattice**
  - c. **Plot Size** : **4 x 1.2 m**
  - d. **No. of entries** : **49**
  - e. **No. of rows/entry** : **4**
  - f. **No. of replications** : **Six**
  - g. **Date of sowing** : **11-08-1986**
  - h. **Fertilizer** : **150 kg/ha Single Super Phosphate**
  - i. **Plant Protection** : **Prophylactic**
  - j. **Area to be covered** :
  - k. **Data to be covered** : **Visual observation on drought tolerance, vegetative weight, pod weight, shelling percentage.**
- l. **Other relevant information** :



1. **Experiment title** : International Drought screening trial on groundnut.
2. **Experiment Number** : 8616
3. **Project a. Title** : Water stress effects on groundnuts.  
**b. Number** : G-106(85) IC
4. **a. Name of the Scientist** : R.C. NAGESWARA RAO  
**b. Cooperating Scientist** :
5. **Objectives** :
6. **Locations** : Agricultural Research Station, Dryland Farming, Rekalakunta, Anantapur (Field 15N)
7. **Experimental details** :
  - a. **Treatments**
  - b. **Design** : Randomized Block Design
  - c. **Plot Size** : 5 m x 1 2 m
  - d. **No. of entries** : 18
  - e. **No. of rows/entry** : 4
  - f. **No. of replications** : Six
  - g. **Date of sowing** : 10-08-1988
  - h. **Fertilizer** : 150 kg/Ha Single Super Phospate
  - i. **Plant Protection** : Prophylactic
  - j. **Area to be covered** :
  - k. **Data to be covered** : Visual observation on drought tolerane, vegetative weight, pod weight, shelling percentage.
1. **Other relevant information** :

1. **Experiment title** : **Mixed Crop of groundnut varieties with varying maturity periods.**
2. **Experiment Number** : **8617**
3. **Project** a. **Title** : **Water stress effects on groundnut**  
b. **Number** : **G-106(85)IC**
4. a. **Name of the Scientist** : **R. C. NAGESWARA RAO**  
b. **Cooperating Scientist** :
5. **Objectives** : **To examine the possibility to manage and ;season droughts by mixed cropping late and early maturing groundnuts.**
6. **Locations** : **Agricultural Research Station, Dryland ;Farming, Bekalakunta, Anantapur (Field 15N)**
7. **Experimental details** :
- a. **Treatments** :
1. **Kadiri 71-1 (sole)**
  2. **TMV-2 (sole)**
  3. **ICGS (E) 22 (sole)**
  4. **ICGS (E) 27 (sole)**
  5. **Kadiri 71-1 + TMV-2**
  6. **Kadiri 71-1 + ICGS (E) 22**
  7. **Kadiri 71-1 + ICGS (E) 27**
- b. **Design** : **Randomized Block Design**
- c. **Plot Size** : **8.5 x 2.4 m**
- d. **No. of entries** :
- e. **No. of rows/entry** : **Eight**
- f. **No. of replications** : **Four**
- g. **Date of sowing** : **12-08-1986**
- h. **Fertiliser** : **150 kg/Ha Single Super Phosphate**
- i. **Plant Protection** : **Prophylactic**
- j. **Area to be covered** :
- k. **Data to be covered** : **Visual observation on drought tolerance, vegetative weight, pod weight, shelling percentage.**
- l. **Other relevant information** :

**SCREENING OF SELECTED GENOTYPES FOR RESISTANCE TO SEED INFECTION BY ASPERGILLUS FLAVUS AND AFLATOXIN CONTAMINATION : ADVANCED SCREENING TRIALS-1**

- 1. Experiment title : Screening of selected groundnut genotypes for resistance to seed infection by Aspergillus flavus and aflatoxin contamination.
- 2. Experiment number : 3
- 3. Project a. Title : Biology and Management of Aflatoxin contamination by Groundnut.
  - b. Number : G 102 (85) 1C
- 4. a. Name of the scientist : V.K.Mehan
  - b. Cooperating scientist :
- 5. Objectives : To test selected groundnut genotypes for resistance to seed infection by A.flavus and aflatoxin contamination under different agroecological conditions
- 6. Location(s) : 1. ICRISAT Center Farm, Field RCE 23  
2. ICRISAT Dry Farming Research Station, Anantapur
- 7. Experimental details :
  - a. Treatments : Genotypes : 9
    - A. J 11
    - B. NC Ac 17090
    - C. U 4-47-7
    - D. Exotic-6
    - E. Ah 7223
    - F. C 55-437
    - G. PI 337394 F
    - H. UP 71513
    - I. JL 24
  - b. Design : Randomised Block Design
  - c. Plot size : 9 m X 10 rows (rows 30 cm apart)
  - d. No. of entries : 9
  - e. No. of rows/entry : 10 X 9 m
  - f. No. of replication : 4

- g. Date of sowing : 12th Aug 1986
- h. Fertilizer : 20Kg P2O5/ha (applied at the time of land preparation)
- i. Plant Protection : Insecticides to give research protection
- j. Data to be recorded : 1. Seed infection by *A. flavus* and other fungi
2. Check for occurrence of aflatoxin in seeds of groundnut genotypes .
- k. Other relevant information : Rainfall and temperatures in the season

1. Experiment title : Interaction between Groundnut plant population P dosage and mycorrhizal inoculation under field conditions
2. Experiment number : 1
3. Project a. Title : Groundnut Nutrient Stress  
b. Number : G 107 (85) IC
4. a. Name of the scientist : K.R. Krishna/J.H. Williams  
b. Cooperating scientist :
5. Objectives : To study the nature of mycorrhizal symbiosis under varied plant population and phosphate fertilizer levels
6. Location(s) : Ananthapur
7. Experimental details
- a. Treatments : 1. Unamended and 20 Kg  $P_2O_5$  added.  
2. Full population and Half population  
3. Inoculated and non-inoculated
- b. Design : RBD
- c. Plot size : 12 Sq.M.
- d. No. of entries : 1 (TMV 2)
- e. No. of rows/entry : 8 and 4 depending the treatment spacing
- f. No. of replications : 4
- g. Date of sowing : 13.8.1988
- h. Fertilizer : 1) 20 kg N/ha (urea) Basal
- i. Plant protection : Insecticides
- j. Area to be covered : 0.04 ha

**k. Data to be recorded :**

- 1) Percentage mycorrhizal root colonization**
- 2) Leaf area**
- 3) Shoot dry weight**
- 4) Pod yield**
- 5) Shoot P uptake**

1. Experiment title : Screening of Groundnut genotypes for mycorrhizal root colonization
2. Experiment number
3. Project a. Title : Groundnut Nutrient Stress  
b. Number : G 107 (85)
4. of the scientist : K. R. Krishna  
b. Cooperating scientist : -
5. Objectives : To reconfirm genotype dependent differences in VAM colonization
6. Location(s) : Anantapur, ICRISAT
7. Experimental details :  
a. Treatments : 45 Groundnut genotypes  
b. Design : RBD  
c. Plot size : 4.8 Sq.m  
d. No. of entries : 45

- |               |                     |
|---------------|---------------------|
| 1. ICG.221    | 24. ICG.3047        |
| 2. ICG.1101   | 25. ICG.3064        |
| 3. ICG.1164   | 26. ICG.3833        |
| 4. ICG.1506   | 27. ICG.4224        |
| 5. ICG.1521   | 28. ICG.4445        |
| 6. ICG.1773   | 29. ICG.4507        |
| 7. ICG.5305   | 30. R-33-1          |
| 8. ICG.7827   | 31. ICG.156         |
| 9. ICG.10505  | 32. ICG.2807        |
| 10. ICG.10525 | 33. ICG.3948        |
| 11. ICG.1629  | 34. ICG.4149        |
| 12. ICG.1697  | 35. ICG.4159        |
| 13. ICG.1707  | 36. ICG.4344        |
| 14. ICG.1908  | 37. ICG.5139        |
| 15. ICG.2738  | 38. ICG.5302        |
| 16. ICG.7886  | 39. ICG.5363        |
| 17. ICG.4790  | 40. ICG.5622        |
| 18. ICG.10470 | 41. TMV2*NCAC*17142 |
| 19. ICG.10509 | 42. ICG.2151        |
| 20. ICG.10974 | 43. ICG.3222        |
| 21. ICG.2490  | 44. ICG.4888        |
| 22. ICG.2671  | 45. 98-233          |
| 23. ICG.3030  |                     |

- e. No. of rows/entry : 2
- f. No. of replications : 3
- g. Date of sowing : 13.8.1988
- h. Fertilizer : 1) 20 kg N/ha (Urea) Basal  
2) 20 kg N/ha (Urea) Top  
dressing
- i. Plant protection : Insecticides
- j. Area to be covered : 0.08 ha
- k. Data to be recorded : 1) Percentage mycorrhizal root  
colonization  
2) Leaf area  
3) Shoot Dry Weight  
4) Shoot P uptake



1. Experiment title : Groundnut genotype reaction to native and inoculated mycorrhiza
2. Experiment number : 3
3. Project a. Title : Groundnut Nutrient Stress  
b. Number : 8 107 (85)
4. a. Name of the scientist : K.R. Krishna  
b. Cooperating scientist : -
5. Objectives : To study the genotype dependent differences in VAM colonization and response.
6. Location(s) : Anantapur, ICRISAT
7. Experimental details
- a. Treatments : 1) 20 Groundnut genotypes  
2) Inoculation and no inoculation
- b. Design : Split plot
- c. Plot size : 4.8 Sq.M.
- d. No. of entries : 20
1. ICB.221
  2. ICB.1101
  3. ICB.1506
  4. ICB.1521
  5. ICB.10505
  6. ICB.1629
  7. ICB.7885
  8. ICB.10470
  9. ICB.10509
  10. ICB.10874
  11. ICB.2480
  12. ICB.3047
  13. ICB.4224
  14. ICB.4445
  15. R-33-1
  16. ICB.156
  17. ICB.3948
  18. ICB.4148
  19. ICB.4344
  20. ICB.5622

- e. No. of rows/entry : 2
- f. No. of replications : 3
- g. Date of sowing : 19.8.1998
- h. Fertilizer : 1) 20 kg N/ha (area) basal  
2) 20 kg N/ha (area) top dressing
- i. Plant protection : Insecticides
- j. Area to be covered : 0.67 Ha
- k. Data to be recorded : 1) Percentage mycorrhizal root  
colonization  
2) Leaf area  
3) Shoot dry weight  
4) Pod yield  
5) Shoot P uptake

1. Experiment title : STUDIES ON CROP-WEATHER MODELING OF GROUNDNUT
2. Experiment number : 1
3. Project
  - a. Title : Studies on crop-weather modeling of groundnut
  - b. Number : FS - 102
4. a. Name of the scientists : A.K.S. Huda, R.C. Nageshwar Rao, Piara Singh and A. Yogeswar Rao
5. Objectives : To collect growth and yield data of groundnut to develop and validate groundnut model.
6. Location(s) : ARS, Dryland Farming, Rekalakunta, Anantapur (Field 15N)
7. Experimental details :
  - a. Treatments : Two cultivars (Robut 33-1 -- TMV 2)
  - b. Design : RBD
  - c. Plot size : 12 x 8 m
  - d. No. of entries : 2
  - e. No. of rows/entry : --
  - f. No. of replications : 3
  - g. Date of sowing : 10 August 1986
  - h. Fertilizer : Single super phosphate (150 kg/ha)
  - i. Plant protection : Adequate
  - j. Area to be covered :
  - k. Data to be recorded : Environmental data, Phenology, Leaf area, Light interception, Dry matter accumulation, Pod yield.
  - l. Other relevant information :

1. Experiment title : Pearl Millet Genotype reaction to native and inoculated mycorrhiza

2. Experiment number : 4

3. Project a. Title : Pearl millet - mycorrhiza  
b. Number : M 131 (85)

4. a. Name of the scientist : K.R. Krishna  
b. Cooperating scientist : -

5. Objectives : To study the response of millet genotypes to VAM inoculation under field condition

6. Location(s) : Ananthapur, Bhevenisagar and ICRISAT

7. Experimental details :

a. Treatments : 1) 10 millet genotypes  
2) Inoculation and no inoculation

b. Design : Split plot

c. Plot size : 9.6 Sq.M.

d. No. of entries : 10

1. WC C75
2. MBH 110
3. IP 3120
4. IP 3840
5. IP 4382
6. IP 5420
7. IP 5692
8. IP 4937
9. IP 5921
10. ZAN

e. No. of rows/entry : 4

f. No. of replications : 5

g. Date of sowing : 12.8.1986

# PEARL MILLET





- h. Fertilizer : 1) 80 Kg N/ha (urea) basal  
2) 80 kg N/ha (urea) top dressing
- i. Plant protection : Insecticides
- j. Area to be covered : 0.12 ha
- k. Data to be recorded : 1) Shoot dry weight  
2) Panicle dry weight  
3) Grain weight  
4) 1000 grain weight  
5) Shoot P uptake

1. Experiment title : **Repeatability trial**
2. Experiment Number : **1**
3. Project a. Title : **Repeatability and applicability of drought nursery results (Joint project with AICRIP)**  
b. Number : **M-121(85)IC**
4. a. Name of the scientist : **Dr. V. Mahalakshmi**  
b. Cooperating scientist : **Drs. B.S. Talukdar and B. Gilliver**
5. Objectives : **To assess the validity and repeatability of drought screening at ICRISAT Center during summer**
6. Location(s) : **1. Anantapur field 18A for date-I  
2. Anantapur field 17W for date-II  
3. Others (Patancheru - Summer, Kharif x 3 years)**
7. Experimental details :
  - a. Treatments : **RBD**
  - b. Design : **RBD**
  - c. Plot size : **6 rows x 4 m x 0.6 m (14.4 sq. m)**
  - d. No. of entries : **25**
  - e. No. of rows/entry : **6**
  - f. No. of replications : **4**
  - g. Date of sowing : **14th Aug. 1986 - Date-I; and 3rd Sept. 1986 - Date-II**
  - h. Fertilizer : **28:28:0 150 kg per hectare - Basal dressing  
Top dressing - 100 kg. urea per hectare**
  - i. Plant protection :
  - j. Area to be covered :
  - k. Data to be recorded :
  - l. Other relevant information :



**Repeatability Trial - Amantapur Kharif 1986**

1. NELC 88103
2. SRCH 8101
3. IVC A75
4. ICTP 8203
5. NELC C4 Bulk
6. IVC C5 Bulk
7. EC C5 Bulk
8. ICMS 7918
9. ICMS 7835
10. ICMS 8015
11. ANK DR SYN
12. EXB DR SYB
13. IP 3284
14. IP 9401
15. MDS 6
16. 68A x WC C 75
17. EICH 8306
18. ICH 451
19. ICH 423
20. ICMS 7909
21. MBH 110
22. ICMS 7704
23. ICMS 7703
24. WC C 75
25. BD 763

1. Experiment title : International Pearl Millet Adaptation Trial (IPMAT II)
2. Experiment Number : 2
3. Project a. Title : IPMAT applicability of drought nursery results (Joint project with AICMIP)
  - b. Number : M-121(85)IC
4. a. Name of the scientist : Dr. V. Mahalakshmi
  - b. Cooperating scientist :
5. Objectives : Adaptation of advanced pearl millet genotypes (program trial)
6. Location(s) :
  1. Anantapur field 16A for date-I
  2. Anantapur field 17W for date-II
7. Experimental details :
  - a. Treatments :
  - b. Design : 4 x 5 lattice
  - c. Plot size : 6 rows x 4 m x 0.6 m (14.4 sq. m)
  - d. No. of entries : 20
  - e. No. of rows/entry : 6
  - f. No. of replications : 4
  - g. Date of sowing : 14th Aug. 1986 - Date-I and 3rd Sept. 1986 - Date-II
  - h. Fertiliser : 28:28:0 per hectare - Basal dressing  
100 kg. urea per hectare - Top dressing
  - i. Plant protection :
  - j. Area to be covered :
  - k. Data to be recorded :
  - l. Other relevant information :

## IPMAT II Anantapur Kharif 1986

1. ICMV F 84108
2. ICMV E 84423
3. ICMV E 84425
4. ICMV H 84409
5. ICMV D 85404
6. ICMS 8323
7. ICMS 8359
8. BD 763
9. ICMH 851009
10. ICMH 82205
11. ICMH 83506
12. RHR BH 8601
13. RHR BH 8602
14. BK 560
15. MBH 147
16. M 78
17. PBS 1
18. ICMS 7704
19. WCC 75
20. MBH 110

1. Experiment title Pearl Millet Multilocation Drought Trial (PMMDT)
2. Experiment Number 3
3. Project
  - a. Title Identification and assessment of drought resistance
  - b. Number M-122(85)IC
4. a. Name of the scientist S. Mahalakshmi
- b. Cooperating scientist
5. Objectives To evaluate selected pearl millet genotypes for adaptation to naturally occurring droughts
6. Location(s)
  1. Anantapur field 18B for date-I
  2. Anantapur field 17W for date-II
7. Experimental details
  - a. Treatments
  - b. Design 4 x 5 lattice
  - c. Plot size 5 rows x 4 m x 0.6 m (14.4 sq. m)
  - d. No. of entries 20 and 22 (Date-II)
  - e. No. of rows/entry
  - f. No. of replications 4
  - g. Date of sowing 14th Aug. 1986 - Date-I; and 3rd Sept. 1986 - Date-II
  - h. Fertilizer 28:28:0 per hectare - Basal dressing  
100 kg. urea per hectare - Top dressing
  - i. Plant protection
  - j. Area to be covered
  - k. Data to be recorded
  - l. Other relevant information

**FREEDT (Long Season Date I) Anantapur Kharif 1986**

1. EICH 8301
2. ICTP 8202
3. ICTP 8203
4. EGP C0
5. ICMV 83117
6. ICMV 83118
7. ICMV 82113
8. ICMS 7703
9. WCC 75
10. BK 560
11. MDS 19
12. MDS 25
13. MDS 26
14. MDS 27
15. MDS 29
16. EC C5
17. DC 11 C1
18. ICMS 7704
19. ICMH 82205
20. ICH 451

**PMMDT Anantapur Kharif 1986**  
**(Short Season Date II)**

1. ITCB 8301
2. ITCB 8302
3. ITCB 8303
4. ITCB 8304
5. ITCB 8305
6. ITCB 8306
7. ITCB 8307
8. ITCB 8308
9. ITCB 8309
10. ITCB 8310
11. ITCB 8311
12. ITCB 8312
13. ITCB 8313
14. ITCB 8314
15. ITCB 8315
16. ITCB 8316
17. ITCB 8317
18. ITCB 8318
19. ITCB 8319
20. ITCB 8320
21. ITCB 8321
22. ITCB 8322
23. ITCB 8323
24. ITCB 8324
25. ITCB 8325
26. ITCB 8326
27. ITCB 8327
28. ITCB 8328
29. ITCB 8329
30. ITCB 8330
31. ITCB 8331
32. ITCB 8332
33. ITCB 8333
34. ITCB 8334
35. ITCB 8335
36. ITCB 8336
37. ITCB 8337
38. ITCB 8338
39. ITCB 8339
40. ITCB 8340
41. ITCB 8341
42. ITCB 8342
43. ITCB 8343
44. ITCB 8344
45. ITCB 8345
46. ITCB 8346
47. ITCB 8347
48. ITCB 8348
49. ITCB 8349
50. ITCB 8350
51. ITCB 8351
52. ITCB 8352
53. ITCB 8353
54. ITCB 8354
55. ITCB 8355
56. ITCB 8356
57. ITCB 8357
58. ITCB 8358
59. ITCB 8359
60. ITCB 8360
61. ITCB 8361
62. ITCB 8362
63. ITCB 8363
64. ITCB 8364
65. ITCB 8365
66. ITCB 8366
67. ITCB 8367
68. ITCB 8368
69. ITCB 8369
70. ITCB 8370
71. ITCB 8371
72. ITCB 8372
73. ITCB 8373
74. ITCB 8374
75. ITCB 8375
76. ITCB 8376
77. ITCB 8377
78. ITCB 8378
79. ITCB 8379
80. ITCB 8380
81. ITCB 8381
82. ITCB 8382
83. ITCB 8383
84. ITCB 8384
85. ITCB 8385
86. ITCB 8386
87. ITCB 8387
88. ITCB 8388
89. ITCB 8389
90. ITCB 8390
91. ITCB 8391
92. ITCB 8392
93. ITCB 8393
94. ITCB 8394
95. ITCB 8395
96. ITCB 8396
97. ITCB 8397
98. ITCB 8398
99. ITCB 8399
100. ITCB 8400

1. Experiment title : Pearl Millet Advanced Drought Trial (PMADT)
2. Experiment Number : 4
3. Project a. Title : Identification and assessment of drought resistance
  - b. Number : M-122(85)IC
4. a. Name of the scientist : Dr. V. Mahalakshmi
  - b. Cooperating scientist :
5. Objectives : To evaluate pearl millet genotypes selected in drought nursery for adaptation to naturally occurring drought
6. Location(s) :
  1. Anantapur field 18B for date-I
  2. Anantapur field 17W for date-II
7. Experimental details :
  - a. Treatments :
  - b. Design : 5 x 5 lattice
  - c. Plot size : 6 rows x 4 m x 0.6 m (14.4 sq. m)
  - d. No. of entries : 25
  - e. No. of rows/entry : 6
  - f. No. of replications : 4
  - g. Date of sowing : 14th Aug. 1986 - Date-I; and 3rd Sept. 1986 - Date-II
  - h. Fertilizer : 28:28:0 per hectare - Basal dressing  
100 kg. urea per hectare - Top dressing
  - i. Plant protection :
  - j. Area to be covered :
  - k. Data to be recorded :
  - l. Other relevant information :

## PNUDT Trial 101 Acceptance Chart 1986

1. MDS 37
2. MDS 36
3. MDS 35
4. MDS 34
5. MDS 31
6. MDS 30
7. MDS 28
8. MDS 22
9. MDS 16
10. MDS 6
11. ICNV 81111
12. ICNV 84400
13. ICMS 7818
14. EICH 8301
15. ICNH 84122
16. ICNH 84913
17. ICNH 83506
18. ICNH 8
19. ICNH 501
20. ICNH 451
21. NBH 110
22. BK 560
23. ICMS 7704
24. ICMS 7703
25. MCC 75