

UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD

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No.ARSS/AICRP/ / /2017-18

Date: 29.05.2017

To,

Dr. S.K. Shukla
Project Coordinator (Sugarcane)
AICRP on Sugarcane,
Indian Institute of Sugarcane Research,
Lucknow - 226 002

Sir,

Sub: Submission of AICRP (S) Plant Pathology data reg...

With reference to above I am here with submitting the AICRP (S) Plant Pathology data of trials conducted at ARS, Sankeshwar during 2016-17. This is for your kind information and needful.

Thanking you,

Yours faithfully

(S.G. Raju)
Senior Scientist (Plant Path.)
AICRP on Sugarcane
ARS, Sankeshwar 591 314

Copy Submitted to,

Dr. R. Vishwanathan, Head and P.I. (Pathology), Division of crop Protection, ICAR- Sugarcane Breeding Institute, Coimbatore – 641 007 (TN) for kind information.

**UNIVERSITY OF AGRICULTURAL SCIENCES
DHARWAD**



AGRICULTURAL RESEARCH STATION SANKESHWAR

**ALL INDIA CO-ORDINATED RESEARCH
PROJECT ON SUGARCANE**

**PLANT PATHOLOGY EXPERIMENTAL
DATA 2016-17**

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Meteorological data for the year 2016 at ARS, Sankeshwar

Month	Rainy days	Rainfall (mm)	Average rainfall in 31 years (mm)	Occurrence of pest and diseases
January	-	0.00	1.14	-
February	1	21.4	1.08	Root grub 4% ESB 16%
March	-	0.0	9.59	Thrips 5% Root grub 6% ESB 18% Smut 4-6%
April	3	43.6	56.1	ESB-20%, Smut 5-6% Root grub 16%
May	3	54.4	63.21	ESB 20%, Smut 6-7% Root grub 18%
June	6	51.0	149.2	Rust 5-6 % Root grub 20%
July	19	267.4	148.9	Rust 10-15 %, Root grub 25%
August	12	121.00	132.08	SWA 1-2 grade, Rust 15-16%, Root grub 25-30%
September	7	80.0	125.1	SWA 2-3 grade, White fly 5%, Root grub 25-30%
October	1	4.2	127.5	SWA 2-3 grade, White fly 3%
November	1	15.2	31.52	SWA 2-3 grade,
December	-	0.00	5.27	SWA 2-3 grade,
Total	53	658.2	850.69	

Rainfall received during 2016 was (658.2) 192.49 mm deficit (22.62%) compared to the average rainfall of 31 years (850.69 mm). Though the sugarcane is an irrigated crop, the cane productivity was moderate to low because of delayed onset of monsoon (July) and low to moderate rainfall during January to June. Heavy rains during July and August caused water log stress led to profuse flowering during November –December affecting both cane productivity and crushing season.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to smut
4. Experiment Title. : Initial Varietal Trial – Early
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location. : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2011-12
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties.

1	Co 13002	Checks	
2	Co 13003	1	Co 94008
3	Co 13004	2	CoC 671
4	CoN 13071	3	Co 85004
5	Co 13072	4	Co 8011
6	CoSnk 13101	5	Co 740
7	CoSnk 13102		
8	MS 13081		

- b) Design. : R. B. D.
- c) Replication. : Two
- d) Plot size. : 3.0m Single row
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 05-01-2016

Sl.No.	Entry	Smut (%)	Disease Reaction	Sl.No.	Entry	Smut (%)	Disease Reaction
1	Co 13002	34.91	HS	8	MS 13081	43.33	HS
2	Co 13003	0	R	Checks			
3	CoN 13004	22.5	S	1	Co 94008	41.66	HS
4	CoN 13071	30.00	S	2	CoC 671	36.24	HS
5	CoN 13072	0	R	3	Co 85004	0	R
6	CoSnk 13101	0	R	4	Co 8011	26.66	S
7	CoSnk 13102	0	R	5	Co 740	34.45	HS

Eight entries, Co 13002, CoN 13072 and CoSnk 13101 were graded as R. While CoN 13004 and CoN 13071 were graded as S, two entries Co 13002 and MS 13081 exhibited HS reaction.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
 2. Department. : Plant Pathology
 3. Project Title. : Evaluation of zonal varieties for resistance to smut
 4. Experiment Title. : Initial Varietal Trial – Midlate
 5. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 6. Location. : ARS, Sankeshwar
 7. Experiment. : Continued
 8. Year of start. : 2011-12
 9. Likely year of completion. : 2018-19
 10. Experimental details.

a) Varieties.

1	Co 13005	12	CoN 13073	Checks	
2	Co 13006	13	CoN 13074	1	Co 86032
3	Co 13008	14	CoSNK 13103	2	Co 99004
4	Co 13009	15	Co SNK 13104	3	Co 8011
5	Co 13011	16	CoSNK 13105	4	Co 740
6	Co 13013	17	CoSNK 13106		
7	Co 13014	18	CoT 13366		
8	Co 13016	19	PI 13131		
9	Co 13018	20	PI 13132		
10	Co 13020				
11	CoM 13082				

- b) Design. : R. B. D.
 c) Replication. : Two
 d) Plot size. : 3.0m Single row
 e) Seed rate. : 12 eye buds/m.
 f) Fertilizers. : 250:75:188 NPK Kg/ha.
 g) Date of Planting. : 05-01-2016

Initial Varietal Trial (Midlate)

S. No.	Entry	Smut (%)	Disease reaction	S. No.	Entry	Smut (%)	Disease reaction
1	Co 13005	20.83	S	14	CoSnk 13103	26.66	S
2	Co 13006	23.80	S	15	CoSnk 13104	0	R
3	Co 13008	0	R	16	CoSnk 13105	0	R
4	Co 13009	0	R	17	CoSnk 13106	0	R
5	Co 13011	0	R	18	CoT 13366	0	R
6	Co 13013	32.15	HS	19	PI 13131	0	R
7	Co 13014	0	R	20	PI 13132	0	R
8	Co 13016	0	R	Checks			
9	Co 13018	42.85	HS	1	Co 86032	0	R
10	Co 13020	26.78	S	2	Co 99004	42.91	HS
11	CoM 13082	0	R	3	Co 8011	37.72	HS
12	Co 13073	0	R	4	Co 740	23.47	S
13	CoN 13074	0	R				

Out of 20 entries, 14 namely Co 13008, Co 13009, Co 13011, Co 13014, Co 13016, CoM 13082, Co 13073, CoN 13074, CoSnk 13014, CoSnk 13015, CoSnk 13016, CoT 13366, PI 13131, PI 13132 were rated as R. 4 were rated as S, two entries Co 13013 and Co 13018 were rated as HS.

EARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to smut
4. Experiment Title. : Advanced varietal trial – Early (PC I)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2011-12
9. Likely year of completion. : 2018-19

10. Experimental details.

a) Varieties.

1	Co 11001	Checks	
2	Co 11004	1	Co 94008
3	CoM 11081	2	CoC 671
4	CoM 11082	3	Co 85004
5	CoM 11084	4	Co 8011
		5	Co 740

- b) Design. : R. B. D.
c) Replication. : Two
d) Plot size. : 3.0 m Single row
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting. : 05-01-2016

S. No.	Entry	Smut (%)	Disease reaction
1.	Co 11001	0	R
2.	Co 11004	0	R
3.	CoM 11081	0	R
4.	CoM 11082	0	R
5.	CoM 11084	0	R
Checks			
1.	Co 94008	0	R
2.	CoC 671	11.11	MS
3.	Co 85004	0	R
4.	Co 8011	11.11	MS
5.	Co 740	22.98	S

Eight entries tested, all entries were recorded for R reaction.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
 2. Department. : Plant Pathology
 3. Project Title. : Evaluation of zonal varieties for resistance to smut
 4. Experiment Title. : Advanced varietal trial – Midlate (PC I)
 5. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 6. Location : ARS, Sankeshwar
 7. Experiment. : Continued
 8. Year of start. : 2011-12
 9. Likely year of completion. : 2018-19
 10. Experimental details.

a) Varieties.

1	Co 11005	Checks	
2	Co 11007	1	Co 86032
3	Co 11012	2	Co 99004
4	Co 11019	3	Co 8011
5	CoM 11085	4	Co 740
6	CoM 11086		

- b) Design. : R. B. D.
 c) Replication : Two
 d) Plot size. : 3.0m Single row
 e) Seed rate. : 12 eye buds/m.
 f) Fertilizers. : 250:75:188 NPK Kg/ha.
 g) Date of Planting. : 05-01-2016

S. No.	Entry	Smut (%)	Disease reaction
1	Co 11005	0	R
2	Co 11007	0	R
3	Co 11012	0	R
4	Co 11019	0	R
5	CoM 11085	23.80	S
6	CoM 11086	52.5	HS
Checks			
7	Co 86032	0	R
8	Co 99004	37.5	HS
9	Co 8011	21.13	S
10	Co 740	38.39	HS

Out of 6 entries, Co 11013 showed R reaction, CoM 11085 recorded S and CoM 11086 exhibited for HS reaction.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to smut
4. Experiment Title. : Advanced varietal trial – Early (PC II)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2011-12
9. Likely year of completion. : 2018-19
10. Experimental details.
 - a) Varieties.

1	Co 10004	Checks	
2	Co 10005	1	CoC 671
3	Co 10006	2	Co 85004
4	Co 10024	2	Co 94008
5	Co 10026	3	Co 8011
6	Co 10027	4	Co 740
7	Co 130866		
8	CoT 10367		

- b) Design. : R. B. D.
- c) Replication. : Two
- d) Plot size. : 3.0m Single row
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 05-01-2016

S. No.	Entry	Smut (%)	Disease reaction	S. No.	Entry	Smut (%)	Disease reaction
1.	Co 10004	0	R	8.	CoT 10367	37.91	HS
2.	Co 10005	22.50	S	Checks			
3.	Co 10006	75.00	HS	1.	CoC 671	20.93	S
4.	Co 10024	0	R	2.	Co 85004	0	R
5.	Co 10026	0	R	3.	Co 94008	24.99	S
6.	Co 10027	45.83	HS	4.	Co 8011	31.24	HS
7.	Co 130866	0	R	5.	Co 740	35.08	HS

Out of 8 entries tested, four viz ., Co10004, Co 10024, Co 10026 and Co 130866 were R to smut, Co 10005 rated as S and Co 10006, Co 10027, CoT 10367 were identified as HS.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 B
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to smut
4. Experiment Title. : Advanced varietal trial – Midlate (PC II)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2011-12
9. Likely year of completion. : 2018-19
10. Experimental details.
a) Varieties.

1	Co 9009	Checks	
2	Co 10015	1	Co 86032
3	Co 10017	2	Co 99004
4	Co 10031	3	Co 8011
5	Co 10033	4	Co 740
6	CoM 10083		
7	CoT 10368		
8	CoT 10369		
9	CoVC 10061		
10	PI 10131		
11	PI 10132		

- b) Design. : R. B. D.
c) Replication. : Two
d) Plot size. : 3.0m Single row
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting. : 05-01-2016

Advanced Varietal Trial - Midlate (PC II)

S. No.	Entry	Smut (%)	Disease reaction
1	Co 9009	33.33	HS
2	Co 10015	0	R
3	Co 10017	0	R
4	Co 10031	0	R
5	Co 10033	0	R
6	CoM 10083	0	R
7	CoT 10368	24.28	S
8	CoT 10369	22.50	S
9	CoVC 10061	0	R
10	PI 10131	0	R
11	PI 10132	41.66	HS
Checks			
1	Co 86032	0	R
2	Co 99004	29.37	S
3	Co 8011	31.24	HS
4	Co 740	39.58	HS

Out of 11 entries, Co 10015, Co 10017, Co 10031, Co 10073, CoM 10083, CoVC 10061 and PI 10131 were rated as R, 2 were S and 2 were HS.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to YLD
4. Experiment Title. : Initial Varietal Trial – Early
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2009-10
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties.

1	Co 13002	Checks	
2	Co 13003	1	Co 94008
3	Co 13004	2	CoC 671
4	CoN 13071	3	Co 85004
5	Co 13072	4	Co 8011
6	CoSnk 13101	5	Co 740
7	CoSnk 13102		
8	MS 13081		

- b) Design. : R. B. D.
- c) Replication : Two
- d) Plot size. : 3.0m Single row
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting. : 05-01-2016

Initial Varietal Trial (Early)

SL. No.	Entry	Disease grade	Disease reaction
1	Co 13002	2	MR
2	Co 13003	1	R
3	CoN 13004	1	R
4	CoN 13071	0	R
5	CoN 13072	0	R
6	CoSnk 13101	0	R
7	CoSnk 13102	0	R
8	MS 13081	0	R
Checks			
1	Co 94008	1	R
2	CoC 671	0	R
3	Co 85004	0	R
4	Co 8011	1	R
5	Co 740	0	R

Seven entries viz., Co 13003, CoN 13004, CoN 13071, CoN 13072, CoSnk 130101, CoSnk 13102 and MS 13081 sowed R reaction one entry viz., Co 13002 exhibited MR reaction to YLD.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
 2. Department. : Plant Pathology
 3. Project Title. : Evaluation of zonal varieties for resistance to YLD
 4. Experiment Title. : Initial Varietal Trial – Midlate
 5. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 6. Location : ARS, Sankeshwar
 7. Experiment. : Continued
 8. Year of start. : 2009-10
 9. Likely year of completion. : 2018-19

10. Experimental details.

a) Varieties.

1	Co 13005	12	CoN 13073	Checks	
2	Co 13006	13	CoN 13074	1	Co 86032
3	Co 13008	14	CoSNK 13103	2	Co 99004
4	Co 13009	15	Co SNK 13104	3	Co 8011
5	Co 13011	16	CoSNK 13105	4	Co 740
6	Co 13013	17	CoSNK 13106		
7	Co 13014	18	CoT 13366		
8	Co 13016	19	PI 13131		
9	Co 13018	20	PI 13132		
10	Co 13020				
11	CoM 13082				

- b) Design. : R. B. D.
 c) Replication : Two
 d) Plot size. : 3.0m Single row
 e) Seed rate. : 12 eye buds/m.
 f) Fertilizers. : 250:75:188 NPK Kg/ha.
 g) Date of Planting. : 05-01-2016

Initial Varietal Trial (Midlate)

S. No.	Entry	Disease grade	Disease reaction	S. No.	Entry	Disease grade	Disease reaction
1	Co 13005	0	R	14	CoSnk 13103	0	R
2	Co 13006	1	R	15	CoSnk 13104	1	R
3	Co 13008	1	R	16	CoSnk 13105	1	R
4	Co 13009	0	R	17	CoSnk 13106	0	R
5	Co 13011	1	R	18	CoT 13366	1	R
6	Co 13013	1	R	19	PI 13131	1	R
7	Co 13014	0	R	20	PI 13132	2	MR
8	Co 13016	0	R	Checks			
9	Co 13018	0	R	21	Co 86032	2	MR
10	Co 13020	0	R	22	Co 99004	0	R
11	CoM 13082	0	R	23	Co 8011	1	R
12	Co 13073	0	R	24	Co 740	0	R
13	CoN 13074	0	R				

Out of 20 entries, 19 entries showed R reaction, only one entry viz., PI 131312 displayed MR reaction

EARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to YLD
4. Experiment Title. : Advanced varietal trial – Early (PC I)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2009-10
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties.

1	Co 11001	Checks	
2	Co 11004	1	Co 94008
3	CoM 11081	2	CoC 671
4	CoM 11082	3	Co 85004
5	CoM 11084	4	Co 8011
		5	Co 740

- b) Design. : R. B. D.
- c) Replication : Two
- d) Plot size. : 3.0 m Single row
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting. : 05-01-2016

S. No.	Entry	Disease grade	Disease reaction
1.	Co 11001	0	R
2.	Co 11004	1	R
3.	CoM 11081	0	R
4.	CoM 11082	0	R
5.	CoM 11084	0	R
Checks			
6.	Co 94008	5	HS
7.	CoC 671	0	R
8.	Co 85004	0	R
9.	Co 8011	0	R
10.	Co 740	0	R

A total of entries were screened and all were found R.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to YLD
4. Experiment Title. : Advanced varietal trial – Midlate (PC I)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2009-10
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties.

1	Co 11005	Checks	
2	Co 11007	1	Co 86032
3	Co 11012	2	Co 99004
4	Co 11019	3	Co 8011
5	CoM 11085	4	Co 740
6	CoM 11086		

- b) Design. : R. B. D.
- c) Replication : Two
- d) Plot size. : 3.0m Single row
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Ratooning. : 05-01-2016

S. No.	Entry	Disease grade	Disease reaction
1	Co 11005	0	R
2	Co 11007	0	R
3	Co 11012	0	R
4	Co 11019	0	R
5	CoM 11085	0	R
6	CoM 11086	0	R
Checks			
7	Co 86032	1	R
8	Co 99004	1	R
9	Co 8011	0	R
10	Co 740	0	R

Six entries were observed for their resistance to YLD, all were showed R reaction

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to YLD
4. Experiment Title. : Advanced varietal trial – Early (PC II)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2009-10
9. Likely year of completion. : 2018-19
10. Experimental details.
a) Varieties.

		Checks	
1	Co 10004		
2	Co 10005	1	CoC 671
3	Co 10006	2	Co 85004
4	Co 10024	2	Co 94008
5	Co 10026	3	Co 8011
6	Co 10027	4	Co 740
7	Co 130866		
8	CoT 10367		

- b) Design. : R. B. D.
c) Replication : Two
d) Plot size. : 3.0m Single row
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting. : 05-01-2016

S. No.	Entry	Disease grade	Disease reaction	S. No.	Entry	Disease grade	Disease reaction
1.	Co 10004	1	R		Checks		
2.	Co 10005	0	R	9.	CoC 671	2	MR
3.	Co 10006	0	R	10.	Co 85004	0	R
4.	Co 10024	2	MR	11.	Co 94008	0	R
5.	Co 10026	0	R	12.	Co 8011	0	R
6.	Co 10027	0	R	13.	Co 740	0	R
7.	Co 130866	0	R				
8.	CoT 10367	0	R				

Out of 8 entries, 7 entries showed R reaction, only one Co 10024 displayed MR reaction

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 17 D
2. Department. : Plant Pathology
3. Project Title. : Evaluation of zonal varieties for resistance to YLD
4. Experiment Title. : Advanced varietal trial – Midlate (PC II)
5. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
6. Location : ARS, Sankeshwar
7. Experiment. : Continued
8. Year of start. : 2009-10
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties.

1	Co 9009	9	CoVC 10061
2	Co 10015	10	PI 10131
3	Co 10017	11	PI 10132
4	Co 10031		Checks
5	Co 10033	1	Co 86032
6	CoM 10083	2	Co 99004
7	CoT 10368	3	Co 8011
8	CoT 10369	4	Co 740

- b) Design. : R. B. D.
c) Replication : Two
d) Plot size. : 3.0m Single row
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting. : 05-01-2016

S. No.	Entry	Disease grade	Disease reaction	S. No.	Entry	Disease grade	Disease reaction
1	Co 9009	0	R	9	CoVC 10061	0	R
2	Co 10015	0	R	10	PI 10131	0	R
3	Co 10017	1	R	11	PI 10132	1	R
4	Co 10031	1	R	Checks			
5	Co 10033	1	R	1	Co 86032	0	R
6	CoM 10083	0	R	2	Co 99004	0	R
7	CoT 10368	0	R	3	Co 8011	0	R
8	CoT 10369	0	R	4	Co 740	0	R

11 entries were screened, all were found R reaction

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 22
 2. Department. : Plant Pathology
 3. Project Title. : Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties
 4. Experiment Title. : Advanced varietal trial – Midlate (PC II)
 5. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 6. Location : North Karnataka
 7. Experiment. : Continued
 8. Year of start. : 2009-10
 9. Likely year of completion. : 2018-19

1. Smut (*Ustilago scitaminea*)

Name of area surveyed	Diseases incidence	Varieties affected	Crop stage when observed
Ranebennur Dist: Haveri	8.3	Co 86032,Co 7804,CoC 671	Grand growth stage
Dharwad Dist: Dharwad	9.5	Co 86032,Co 7804,CoC 671	Grand growth stage
Mudhol Dist: Bagalkot	10.6	Co 86032,Co 8011, Co 94012,Co 91010,Co 92005	Grand growth stage
Bilagi,Dist: Bagalkot	11.4	Co 86032,Co 8011, CoC 671,Co 91010	Grand growth stage
Hukkeri ,Dist:Belgaum	10.2	Co 86032,Co 740,Co 8011	Grand growth stage
Khanapur ,Dist:Belgaum	8.5	Co 86032,Co 8011	Grand growth stage
Haliyal , Dist: Uttar Kannada	9.8	Co 86032,Co 740	Grand growth stage

2. Rust (*Puccinia melanocephala*)

Name of area surveyed	Diseases incidence	Varieties affected	Crop stage when observed
Ranebennur Dist: Haveri	14.9	Co 86032,Co 7804,CoC 671	Grand growth stage
Dharwad Dist: Dharwad	15.3	Co 86032,Co 7804,CoC 671	Grand growth stage
Mudhol,Dist: Bagalkot	17.9	Co 86032,Co 91010, CoM 265	Grand growth stage
Bilagi Dist: Bagalkot	16.2	Co 86032,Co 91010, CoM 0265 , CoC 671	Grand growth stage
Hukkeri Dist:Belgaum	11.8	Co 86032,CoC 671	Grand growth stage
Khanapur Dist:Belgaum	15.7	Co 86032,Co 8011	Grand growth stage
Haliyal Dist: Uttar Kannada	13.3	Co 86032, CoM 0265	Grand growth stage

3. Brown leaf spot

Name of area surveyed	Diseases incidence	Varieties affected	Crop stage when observed
Ranebennur Dist: Haveri	17-2	Co 94012, CoC 671,Co 7804	Grand growth stage
Dharwad Dist: Dharwad	22.3	Co 86032, CoC 671,Co 7804	Grand growth stage
Mudhol Dist: Bagalkot	15.1	Co 94012, CoC 671,Co 91010	Grand growth stage
Bilagi Dist: Bagalkot	13-4	Co 94012, Co 86032,Co 91010, Co 671	Grand growth stage
Hukkeri Dist:Belgaum	24-6	Co 86032,Co 671	Grand growth stage
Khanapur Dist:Belgaum	24-7	Co 86032,Co 94012	Grand growth stage
Haliyal Dist: Uttar Kannada	17-9	Co 86032	Grand growth stage

4. GSD (*Mycoplasma* like organisms)

Name of area surveyed	Diseases incidence	Varieties affected	Crop stage when observed
Ranebennur,Dist: Haveri	7.3	Co 94012, CoC 671	Grand growth stage
Hangal,Dist: Haveri	9.9	Co 86032, CoC 671,Co 7804	Grand growth stage
Mudhol,Dist: Bagalkot	15.4	Co 94012, Co 91010, Co 86032,CoM 265	Grand growth stage
Bilagi,Dist: Bagalkot	18.6	CoM 265,Co 91010,CoC 671	Grand growth stage
Dharwad,Dist: Dharwad	99.8	Co 86032,Co 671,Co 94012	Grand growth stage
Hukkeri,Dist:Belgaum	15.7	CoM 265	Grand growth stage
Chikkodi,Dist:Belgaum	17..6	CoC 671,Co 94012,CoM 265	Grand growth stage
Riabag,Dist:Belgaum	13.1	Co 8011, Co 740,CoM 265	Grand growth stage
Athani,Dist:Belgaum	18.5	CoM 265	Grand growth stage
Gokak,Dist:Belgaum	12.3	CoM 265	Grand growth stage

5. YLD

Name of area surveyed	severity grade	Varieties affected	Crop stage when observed
Ranbennur,Dist: Haveri	2	Co 86032,Co 7804,CoC 671	Grand growth stage
Mudhol,Dist: Bagalkot	3	Co 92005,Co 2000-15 Co 86032,Co 91010	Grand growth and maturity stage
Jamkhandi,Dist:Bagalkot	4	Co 2000-15,Co 86032 Co 91010	Grand growth and maturity stage
Dharwad,Dist: Dharwad	2	Co 86032,CoC 671	Grand growth and maturity stage
Hukkeri,Dist:Belgaum	3	Co 86032,Co 2000-15	Grand growth stage

6. Pokkah Boeng (*Fusarium moniliforme*)

Name of area surveyed	Diseases incidence	Varieties affected	Crop stage when observed
Dharwad Dist: Dharwad	3.5 2.3	Co 86032, Co 94012	Grand growth stage and maturity
Hukkeri Dist:Belgaum	2.7 5.5 8.4	Co 8011 Co 86032 CoM 0265	Grand growth stage and maturity
Khanapur Dist:Belgaum	12.3 11.6	Co 8011 Co 86032	Grand growth stage and maturity
Chikkodi Dist: Belgaum	3.9 4.6	Co 86032 CoM 0265	Grand growth stage and maturity
Athani Dist: Belgaum	7.7 5.8 5.3	Co 8011 Co 86032 CoM 0265	Grand growth stage and maturity

Surveys were undertaken in sugarcane areas of North Karnataka region. The survey indicated that smut, rust, brown spot and grassy shoot were the major diseases in region. Maximum incidence of smut was observed Co 86032 and Co 8011, CoC 671 and Co 91010 and it was to the tune of 11.4%. 10-17% rust incidence was observed in some areas after 2-3 months of planting. Brown spot was a major Problem observed predominantly in Dharwad and Belgaum districts because of frequent rains and high humidity during rainy season. The Pokkah boeng disease was noticed on all sugarcane varieties after receiving pre monsoon shower in May. YLD was observed in some varieties in severe form.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 28 (b)
 2. Department. : Plant Pathology
 3. Project Title. : Methodology for screening sugarcane genotypes for resistant to Brown rust (*Puccinia melanocephala*)
 4. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 5. Location : ARS, Sankeshwar
 6. Experiment. : Continued
 7. Year of start. : 2013-14
 8. Likely year of completion. : 2018-19
 9. Experimental details.

a) Treatments

Sr. No.	Inoculation Methodology
1	Clip Inoculation in Leaf Whorl
2	Leaf Whorl Inoculation

- b) Design. : -
 c) Replication : Non Replicated
 d) Plot size. : 15mX7.2m (Two blocks)
 e) Seed rate. : 12 eye buds/m.
 f) Fertilizers. : 250:75:188 NPK Kg/ha.
 g) Date of Planting : 05-01-2016

Sr. No	Inoculation Methodology	Average no. of rust pustules/inch ²	No. of leaves bearing rust pustules
1.	Clip Inoculation in Leaf Whorl	24.31	9.9
2.	Leaf Whorl Inoculation	36.54	9.4

Observations indicated that, out of 2 methods, number of rust pustules (36.54 / Sq.inch²) on inoculated were higher under leaf whorl method. In clip inoculation, the average number of rust pustules per square inch was 24.31. Therefore leaf whorl inoculation method superior over clip inoculation

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 31
 2. Department. : Plant Pathology
 3. Project Title. : Management of Pokkah boeng in sugarcane
 4. Project Leader. : Dr. S. G. Raju
 Senior Scientist (Plant Pathology)
 5. Location : ARS, Sankeshwar
 6. Experiment. : Continued
 7. Year of start. : 2015-16
 8. Likely year of completion. : 2018-19
 9. Experimental details.

a) Treatments.

Sl.No.	Treatment
1	Sett treatment- Overnight soaking with Carbendaizim-0.1%
2	Foliar spray- Carbendaizim -0.05% (3 sprays at 15 days interval from May 15 th)
3	Sett treatment (T1) + Foliar spray- Carbendaizim -0.05% (T2)
4	Control

- b) Design. : R. B. D.
 c) Replication : Five
 d) Plot size. : 6.0m X 7.2 m
 e) Seed rate. : 12 eye buds/m.
 f) Fertilizers. : 250:75:188 NPK Kg/ha.
 g) Date of Planting : 05-01-2016

Sl.No.	Treatment	Germination (%)	Disease incidence
1	Sett treatment- Overnight soaking with Carbendaizim- 0.1%	77.34	8.38
2	Foliar spray- Carbendaizim -0.05% (3 sprays at 15 days interval from May 15 th)	81.74	12.86
3	Sett treatment (T1) + Foliar spray- Carbendaizim -0.05% (T2)	88.32	6.38
4	Control	68.68	29.94
	SE+	0.52	0.45
	CD at 5 %	1.31	1.39

Results of fungicide efficacy revealed that set treatment + foliar spray Carbendazim 0.05% showed the highest per cent germination and also low disease incidence respectively) compared to other treatment.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 32
2. Department. : Plant Pathology
3. Project Title. : Management of brown spot disease of sugarcane
4. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
5. Location : ARS, Sankeshwar
6. Experiment. : Continued
7. Year of start. : 2015-16
8. Likely year of completion. : 2018-19
9. Experimental details.

a) Treatments.

Treatments	Fungicides	Dosage
T1	Propiconazole	0.1%
T2	Hexaconazole	0.1%
T3	Tridemefon	0.1%
T4	Mancozeb	0.3%
T5	Carbendazim	0.1%
T6	Cotrol (Untreated)	-

- b) Design. : R. B. D.
c) Replication : Three
d) Plot size. : 6.0m X 7.2 m
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting : 05-01-2016

In the chemical management of brown spot of sugarcane experimental trial Vitiated due to least incidence of brown spot in experimental plot.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : PP 33
2. Department. : Plant Pathology
3. Project Title. : Management of yellow leaf disease through meristem culture
4. Project Leader. : Dr. S. G. Raju
Senior Scientist (Plant Pathology)
5. Location : ARS, Sankeshwar
6. Experiment. : Continued
7. Year of start. : 2016-17
8. Likely year of completion. : 2018-19
9. Experimental details.
a) Varieties.

1	Co Snk 7680
2	Co 86032
3	Co Snk 7337
4	CoC 671

- b) Design. : -
c) Replication : -
d) Plot size. : 15mX7.2m (For each variety)
e) Seed rate. : 12 eye buds/m.
f) Fertilizers. : 250:75:188 NPK Kg/ha.
g) Date of Planting : 10-03-2016

Sl.No.	Varieties	Disease severity grade
1	Co Snk 7680	1
2	Co 86032	1
3	Co Snk 7337	1
4	CoC 671	1

Four genotypes, Co Snk7680, Co86032, CoSnk 7337 and CoC671 tested under field condition to know the YLD reaction through meristem culture. It is clear that all genotypes were found least (<1 %) disease incidence.



Pokkah boeng



Smut

