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ALL INDIA CO-ORDINATED RESEARCH PROJECT
ON
SUGARCANE, KOLHAPUR.

ANNUAL REPORT

2011 - 2012

Sponsored by

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DEHLI – 110 010.

Submitted by

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Miss.K.B.Patil

PLANT PATHOLOGY
REGIONAL SUGARCANE AND JAGGERY RESEARCH STATION,
KOLHAPUR - 416 005.

MAHATMA PHULE KRISHI VIDYAPEETH, RAHURI
(MAHARASHTRA)

CONTENTS

1.TECHNICAL PROGRAMME

2011-2012

Sr.No.	Name of experiments
1.	PP 17 : Evaluation of pre-zonal/zonal varieties /genotypes for resistance to red rot, smut and wilt.
2.	PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties.

2.GENERAL INFORMATION

1. Title of the project	:	**All India Co-ordinated project on Sugarcane .**
2. ICAR Sanction No. & Date	:	No.39-12/70 Fin II/CPH-II, Dated, 9 -11-1971.
3. Date of commencement	:	13-12-1971.
4. Likely date of completion	:	The project is to be continued during X^{th} plan period.
5. Reporting period	:	2010-2011
6. Report No.	:	XXXXI
7. Location	:	Regional Sugarcane and Jaggery Research Station, opp. Shahu Market yard, Kolhapur-416 005. (Maharashtra)

8. Objectives :

1) To carry out effective sugarcane improvement programme through co-ordination of multidiscipline research by a team of scientists including Agronomist, Plant breeder, Entomologist, Plant pathologist, Soil scientist and Agril. chemist.

2) To facilitate free exchange of information and the seedlings for the purpose and to conduct varietal trials on zonal and national level.

3) Evaluation of high yielding, early maturing, non flowering varieties with high brix and sucrose.

4) To control the disease and pests (including scale insects and borers) by development of objectives fungicidal and insecticidal schedules.

5) To organize a training programme for the scientists and technical persons engaged in the sugarcane improvement project.

6) To maintain disease free nucleus seed material for distribution to the co-operative organizations.

3. STAFF POSITION:

Sr. No.	Name of the Sanctioned Posts	No. of posts sanct-ioned	Name of the incumbent	Date of Joining	Date of Relie-ving	Remar ks
1.	Plant Pathologist	1	Prof. D.M. Veer	1-4-96	-	-
2.	Asstt.Breeder	1	__	__	_	Vacant
3.	Technical Assistant	2	1. Miss. K.B.Patil 2. -	31-1-09 -	- -	- Vacant
4.	Lab. Assistant	1	Shri J.S. Patil	1-4-97	-	-
5.	Field man	1	Vacant	-	-	Vacant

4. Sanctioned grants for the year 2011-2012.

Sr. No.	Major/ minor Head Accounts	Sanctioned grants (Rs.in lakh)	Actual head wise expenditure statement (Rs.)
1.	Recurring 1) Pay and Allowances	13.93	20,82,362/-
	2) T.A.	0.5	26,716/-
	3) Recurring Contingencies	1.8	1,79,960
	Total	**16.23**	**22,89,038/-**
2.	Non- recurring 1) Equipments	---	---
	2) Works	---	---
	3) Others	---	---
	Total	**----**	**----**
	Grant Total (1+ 2)	**16.23**	**22,89,038/-**
	ICAR share	**12.17**	**17,16,779/-**
	State share	**4.06**	**5,72,259/-**

5. Weather Condition during the year 2011-12

The Regional Sugarcane and Jaggery Research Station, Kolhapur is geographically situated at an elevation of 574 meter above the sea level on 16º.43' North latitude and 74º.13' East longitude. It comes under the Sub-Montane Zone of Maharashtra. The weather parameters during the seasonal crop growth period from December, 2009 to February, 2011 are presented in Table 1 and 2.

The planting of seasonal sugarcane was completed in second fortnight of December 2009 to January 2010. During germination phase of sugarcane the maximum and minimum temperature was 30.1ºC and 14.5 ºC respectively with average humidity 85.5 %. This was quite favorable condition for good germination. The tillering phase was completed in the month of February 2010 to April 2010. The maximum temperature 38.3 ºC and minimum 16.5 ºC with highest humidity 78 % which was solicited for tillering phase.

There was pre-monsoon showers (49.2 mm) in the month of June (23-26 MW) are quite favorable for early growth phase of sugarcane. The rainfall received during the month of June, 10 (196.7 mm in 11 rainy days) which was less as compared to average rainfall of last five years (302.1mm in 12 rainy days). Therefore, the crop was irrigated for desirable crop growth.

During tillering stage (14 to 18 MW), the amount of rainfall 20.0 mm received in 2 rainy days with low sunshine hours (7.9 hrs.). Besides that, about 50% of yearly rainfall was received in the month of July, 2010. Therefore the crop was under water logged condition. The situation of flood was occurred from 24. 07.2010 to 04. 08. 2010 for 12 days. The average lowest sunshine hours (2.8 hrs.) was recorded in MW 27 to 36, particularly during grand growth period. Therefore, the enhancement of crop growth was affected.

The maturity phase of crop was started from 40 MW of 2010 to 09 MW of 2011.
During this phase, the rainfall of 168.4 mm recorded in 10 rainy days. The average maximum temperature 30.0 ºC and minimum temperature 16.8ºC, coupled with 86 % highest humidity were observed. This situation created the early emergence of flowering in almost all genotypes of Sugarcane, particularly during this year.

The incidence of early shoot borer was observed during tillering phase of sugarcane. Whereas the incidence of white wooly aphid noticed in monsoon months of June- July which was very less as compared to last 7 years, while the low incidence of Pokha boeng disease was also noticed. The incidence of white fly was observed in the months of September- October with more intensity. The intensity of rust was increased from 27 MW to 39 MW particularly on sugarcane varieties CoC 671, Co9412 and Co 7527 at grand growth stage.

The total rainfall of 1089.6 mm in 65 rainy days received during this year 2010, which was 7.22 percent higher than normal rainfall (1011.00 mm).

In general, the overall sugarcane crop growth and productivity during this year was normal.

Table 1: Weather conditions during the year December 2009 to February 2011: Regional Sugarcane and Jaggery Research Station, Kolhapur.

Growth Stages	Month	Met. Week	Temperature (°C)		Humidity (%)		Sunshine (Hrs)	Rainfall (mm)	Rainy Days (Nos.)
			Maxi.	Mini.	Morn.	Even.			
Germination	Dec.,09	49-52	30.4	14.5	89	45	7.9	-	-
	Jan. 10	1-5	31.1	16.1	82	47	3.9	-	-
	Average	-	30.3	15.3	85.5	46	11.8	-	-
Tillering	Feb. 10	6-9	34.6	16.5	81	41	8.1	-	-
	Mar.10	10-13	36.9	20.1	70	25	5.9	-	-
	April10	14-18	38.3	22.1	83	31	7.9	20.0	2
	Average	--	36.6	19.6	78.0	32.3	7.3	20.0*	2*
Early Growth	May.10	19-22	36.8	23.5	85	38	8.7	-	-
	June,10	23-26	30.0	21.9	93	69	4.1	196.7	11
	Average	--	33.4	22.7	89.00	53.5	6.4	196.7*	11*
Grand Growth	July 10	27-31	26.9	21.0	95	82	1.5	463.2	22
	Aug.10	32-35	27.0	20.9	94	77	2.1	86.9	10
	Sept.10	36-39	29.0	20.6	94	71	3.5	154.9	10
	Average	--	27.6	20.8	94.3	76.7	2.4	704.5*	42*
Flowering & maturity	Oct.10	40-44	30.2	20.3	92	63	5.5	127.8	6
	Nov.10	45-48	29.2	18.8	92	64	5.5	40.6	4
	Dec.10	49-52	28.4	14.9	86	44	4.0	-	-
	Jan.11	01-05	30.1	14.0	80	36	8.8	-	-
	Feb.11	06-09	32.2	15.9	79.8	33	8.6	-	-
	Average	--	31.8	19.0	87.8	45.5	6.0	168.4*	10*
	Total rainfall (mm)							1089.6	65
	Average rainfall (mm)							1011.0	67

* = Total

Table 2: Week wise weather data recorded for the year 2009-10- 11 Regional Sugarcane and Jaggery Research Station, Kolhapur.

Met Wk No.	Period	Rain mm.	Rainy Day	Mean Temp ^{0}C		Wind Speed km./hr.	Sun--shine hours	Mean Relative humidity		Evap. in 24 hrs. mm.
				Max.	Min.			M.	E.	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
	Dec. 09									
49	03 – 09	-	-	30.8	14.4	1.2	7.9	89	41	3.5
50	10 – 16	-	-	30.5	14.4	3.5	8.3	91	42	5.6
51	17 – 23	-	-	30.2	15.9	4.2	8.7	91	54	3.2
52	24 – 31	-	-	30.2	13.2	2.7	6.8	83	44	5.4
	January, 10									
1	01 – 07	-	-	30.2	17.5	3.4	6.7	83	43	4.0
2	08 – 14	-	-	30.0	17.9	3.5	3.8	86	52	3.8
3	15 – 21	-	-	29.9	15.9	3.6	5.9	79	58	3.4
4	22 – 28	-	-	29.7	13.5	2.8	8.7	74	42	3.9
5	29 – 04	-	-	30.5	15.8	2.9	5.2	90	39	4.2
	February, 10									
6	05 – 11	-	-	32.0	15.4	3.8	8.1	82	41	4.1
7	12 – 18	-	-	34.4	17.3	2.9	7.0	81	45	4.1
8	19 – 25	-	-	36.2	17.6	3.1	8.7	79	36	6.4
9	26 – 04	-	-	35.9	15.6	3.8	8.5	83	41	7.0
	March, 10									
10	05 – 11	-	-	36.4	19.9	3.7	7.3	59	24	5.1
11	12 – 18	-	-	36.4	20.2	3.1	2.2	66	24	5.5
12	19 – 25	-	-	37.9	20.3	3.9	6.2	76	20	7.0
13	26 – 01	-	-	36.8	20.1	5.0	7.9	79	32	7.7
	April, 10									
14	02 – 08	--	--	39.3	21.3	3.9	9.8	67	23	7.9
15	09 – 15	--	--	38.5	22.6	4.9	5.3	86	29	7.3
16	16 – 22	11.0	1	37.7	21.5	5.6	8.6	87	35	7.7
17	23 – 29	--	--	39.5	23.6	4.8	9.2	88	34	8.4
18	30 – 06	9.0	1	36.6	21.7	4.4	6.8	86	36	6.4
	May, 10									
19	07 – 13	--	--	39.0	23.7	5.4	8.1	82	30	8.6
20	14 – 20	--	--	37.0	23.5	5.0	9.4	88	39	8.5
21	21 – 27	--	--	35.3	23.9	10.0	6.6	85	43	6.5
22	28 – 03	--	--	35.9	23.0	7.6	10.6	86	41	8.8
	June 10									
23	04 – 10	0.6	--	34.8	22.4	6.9	9.4	90	45	7.1
24	11 – 17	159.3	7	28.3	21.8	5.0	2.4	96	80	3.0
25	18 – 24	20.7	1	28.6	21.7	6.3	2.8	93	77	3.3
26	25 – 01	16.1	3	28.4	21.5	5.7	1.6	91	75	3.0

1	2	3	4	5	6	7	8	9	10	11
	July 10									
27	02 – 08	18.5	4	27.1	20.9	5.8	1.7	92	85	3.1
28	09 – 15	12.5	2	29.5	21.4	5.7	3.1	94	64	3.9
29	16 – 22	49.7	3	27.3	21.1	4.6	2.0	96	80	2.3
30	23 – 29	324.8	7	24.3	20.8	6.8	0.0	98	94	2.0
31	30 – 05	57.7	6	26.3	21.0	7.3	0.9	94	86	1.6
	August 10									
32	06 – 12	7.8	2	28.3	20.7	5.4	3.2	95	80	3.4
33	13 – 19	0	0	24.9	21.1	3.9	1.4	92	72	3.9
34	20 – 26	21.6	2	28.5	21.1	3.2	2.3	95	75	3.9
35	27 – 02	57.0	6	26.4	20.7	4.9	1.6	95	80	2.0
	September 10									
36	03 – 09	24.6	5	26.7	20.9	5.1	1.7	95	79	2.6
37	10 – 16	1.6	0	28.4	20.5	3.5	1.6	91	75	2.7
38	17 – 23	0.5	0	29.8	20.5	3.2	3.6	94	61	3.4
39	24 – 30	128.2	5	31.0	20.5	2.7	7.0	95	68	4.7
	October 10									
40	01 – 07	69.4	3	30.7	20.7	2.9	6.7	90	58	4.3
41	08 – 14	1.0	0	31.3	19.8	2.8	6.6	93	52	4.9
42	15 – 21	28.6	1	29.2	21.2	3.5	2.2	91	70	3.4
43	22 – 28	26.2	1	30.0	20.0	2.2	5.1	95	67	4.6
44	29 – 04	2.6	1	29.7	19.9	3.2	7.0	92	68	4.6
	November 10									
45	05 – 11	31.1	3	28.9	18.6	4.5	3.0	93	69	3.1
46	12 – 18	9.1	1	28.0	19.6	2.0	6.0	93	69	1.9
47	19 – 25	0.4	-	30.2	18.4	2.5	6.2	95	65	2.5
48	26 – 02	--	-	29.5	18.6	3.5	6.6	88	52	3.6
	December 10									
49	03 –09	--	-	29.1	17.7	3.2	2.0	87	49	3.3
50	10 – 16	--	-	27.3	15.0	2.2	2.5	88	46	2.5
51	17 – 23	--	-	28.4	12.4	2.9	2.7	78	29	3.1
52	24 – 31	--	-	28.7	14.6	2.7	7.8	91	52	3.0
	January, 11									
1	01 – 07	--	-	28.0	15.0	0.2	6.2	78	45	4.2
2	08 – 14	--	-	29.2	11.9	1.5	9.1	75	33	3.8
3	15 – 21	--	-	31.3	13.7	1.1	9.5	82	28	3.5
4	22 – 28	--	-	31.0	14.3	1.3	9.7	85	42	4.1
5	29 – 04			31.2	15.0	1.0	9.3	82	31	3.2
	February, 11									
6	05 – 11	--	-	31.5	14.7	2.1	9.6	81	35	4.3
7	12 – 18	--	-	31.4	15.1	1.9	9.1	79	26	4.5
8	19 – 25	--	-	32.1	15.2	2.1	8.5	76	27	6.6
9	26 – 04	--	-	33.6	18.6	1.9	7.6	83	45	7.2
	Total Rainfall	**1089.6**	**65**	--	--	--	--	--	--	--
	Mean			**31.8**	**19.0**	**3.4**	**6.0**	**87.8**	**45.5**	**4.2**