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**MAHATMA PHULE KRISHI VIDYAPEETH, RAHURI  
DIST. AHMEDNAGAR (MAHARASHTRA)**

# **ANNUAL REPORT**

**CROP PRODUCTION**

**2016-17**

**Submitted by**

**Prof. D. M. Veer  
Miss.K.B.Patil  
Mr.N.B.Ghodake**

**All India Coordinated Research Project on Sugarcane**

**REGIONAL SUGARCANE AND JAGGERY RESEARCH  
STATION, KOLHAPUR- 416 005**

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## GENERAL INFORMATION

- 1) Title of the project : All India Coordinated Research Project on Sugarcane
- 2) ICAR sanction No. and 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 XII Plan
- 5) Reporting period : 2016-17
- 6) Report No. : XXXXVI
- 7) Location : Regional Sugarcane and Jaggery Research Station, Opp. Shahu Market Yard, Kolhapur-416005(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, Soil scientist and Agril. Chemist, Entomologist, Plant pathologist.
  - 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.

(ii)

## PRESENT STAFF POSITION

Sr. No.	Name of the Posts	No. of posts	Name of the incumbent	Date of Joining	Date of Relieving	Remarks
1.	Breeder	1	Dr.M.S.Kamble	01-11-2015	21-07-2016	Vacant since 22-07-2016
3.	Plant Pathologist	1	Prof. D.M. Veer	01- 04-1996	-	Retirement on Dt. 30/06/2017
4.	Technical Assistant	2	1. Ms. K. B. Patil 2. Mr.N.B.Ghodake	31- 01-2009 31- 08-2013	- -	---
5.	Lab. Assistant	1	1.Mrs.M.R.Pandav	24-09-2012	-	working as Agril Assistant instead of Lab. Assistant
6.	Field man	1	Vacant	-	-	Vacant since X five year plan

### Staff associated with present investigation

Dr. S. M. More,  
Agronomist,  
Regional Sugarcane and Jaggery Research Station, Kolhapur

(iii)

## **Weather Condition during Crop Period (January, 2016 to December, 2016)**

The Regional Sugarcane and Jaggery Research Station, Kolhapur is geographically situated at an elevation of 574 meter above the sea level on 16°.43' North latitude and 74°.13' East longitude. It comes under the Sub-Montane Zone of Maharashtra. The weather parameters during the seasonal crop growth period from January, 2016 to December, 2016 are presented in Table 1 and 2.

The planting of experimental plots of sugarcane was carried out during January and February, 2016. During germination phase of sugarcane the average maximum and minimum temperature was 33.14°C and 17.03°C, respectively with average morning humidity of 67.50 per cent. The high temperature during germination phase and scarcity of irrigation water, hampered germination of the crop.

The tillering phase was started from March, 2016 to April, 2016. During this period the average maximum temperature and minimum temperature 38.60°C and 21.94°C, respectively, while average morning humidity and evening humidity per cent was 64.15 % and 25.45% respectively. The higher temperature during tillering phase and scarcity of irrigation water adversely affected the crop growth.

The rainfall of 180.40 mm was received during early growth period of sugarcane with average maximum temperature 35.22°C and minimum temperature 21.76 °C. During grand growth phase of sugarcane crop, 846.40 mm rainfall with 45 rainy days was received. However, the flood condition during MW 28<sup>th</sup> and 32<sup>nd</sup> was occurred twice i.e., 7 day day period 11/07/16 to 17/07/16 and 6 day period 05/08/2017 to 10/08/2017. The experimental plots were remained submerged during crop growth period, therefore, the yield attributing characters of sugarcane were adversely affected and ultimately resulted in lower cane yield.

The total rainfall of 1067.6 mm was received in 59 rainy days, but the rainfall distribution was uneven. In general, the season was not favorable for sugarcane crop. The rainfall was nearly normal of average rainfall (1015.3 mm with 66 rainy days) of this location based on 40 years' data (1975-2015).

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**Table 1. Week wise weather data recorded at Zonal Agricultural Research Station, Shenda Park farm, Kolhapur for the year 2016.**

M W	Period	Rainfall (mm.)	RD	Mean Temp (°C)		Wind Speed (kmph)	BSS (Hrs)	Relative Humidity (%)		Evap. (mm.)
				Max.	Min.			M	E	
				<b>January 2016</b>						
01.	01/01-07/01	00	0	32.2	17.2	1.9	4.5	49	42	2.0
02.	08/01-14/01	00	0	30.6	15.7	1.5	4.1	60	30	2.2
03.	15/01-21/01	00	0	29.5	16.9	1.0	5.1	60	42	2.2
04.	22/01-28/01	00	0	30.9	15.9	1.6	4.5	67	36	2.2
05.	29/01-04/02	00	0	34.2	16.8	1.3	6.2	68	32	2.4
<b>February 16</b>										
06.	05/02-11/02	00	0	34.1	15.9	1.6	4.9	80	41	3.1
07.	12/02-18/02	00	0	33.2	15.8	2.5	6.9	79	37	3.6
08.	19/02-25/02	00	0	35.9	19.0	2.1	5.8	69	34	3.4
09.	26/02-04/03	00	0	36.0	19.5	2.0	2.2	69	35	3.8
<b>March, 16</b>										
10.	05/03 – 11/03	00	0	37.0	19.7	1.7	5.1	70	32	4.5
11.	12/03 – 18/03	00	0	36.5	19.3	2.0	5.3	83	23	4.9
12.	19/03 – 25/03	00	0	38.8	21.8	2.2	7.8	53	20	5.9
13.	26/03 – 01/04	00	0	38.6	22.6	2.1	6.5	73	28	6.2
<b>April, 16</b>										
14.	02/04 – 08/04	00	0	38.9	22.6	2.3	7.2	66	24	6.0
15.	09/04 – 15/04	00	0	39.8	23.7	2.4	7.3	57	28	6.2
16.	16/04 – 22/04	00	0	40.1	22.7	2.7	6.3	54	25	6.0
17.	23/04 – 29/04	00	0	38.9	22.8	2.4	7.0	58	23	6.6
18.	30/04 – 06/05	00	0	39.6	23.3	2.3	8.4	58	26	6.4
<b>May, 16</b>										
19.	07/05 – 13/05	00.5	0	39.0	23.0	2.4	9.6	61	27	7.0
20.	14/05 – 20/05	00	0	39.7	23.1	3.3	4.3	60	32	5.8
21.	21/05 – 27/05	00	0	37.5	23.7	3.6	8.7	58	37	6.0
22.	28/05 – 03/06	15.1	1	37.2	22.9	3.0	8.6	63	35	6.7
<b>June 16</b>										
23.	04/06 – 10/06	103.2	3	34.6	21.0	1.8	4.7	64	37	3.6
24.	11/06 – 17/06	00	0	31.3	20.7	1.7	2.5	63	53	2.9
25.	18/06 – 24/06	3.1	1	33.1	20.5	1.9	2.6	78	60	2.8
26.	25/06 – 01/07	58.5	6	29.3	19.1	1.1	0.4	74	71	1.1

(v)

M W	Period	Rainfall (mm.)	RD	Mean Temp (°C)		Wind Speed (kmph)	BSS (Hrs)	Relative Humidity (%)		Evap. (mm.)
				Max.	Min.			M	E	
	<b>July 2016</b>									
27.	02/07 – 08/07	88.0	7	29.0	19.1	2.1	0.4	73	68	0.6
28.	09/07 - 15/07	297.5	7	27.9	19.4	1.6	0.4	75	70	0.6
29.	16/07 – 22/07	20.9	3	28.9	20.1	1.2	1.2	76	83	1.0
30.	23/07 – 29/07	20.9	3	29.4	23.1	0.8	1.4	74	77	0.6
31.	30/07 – 05/08	174.4	6	27.4	19.8	0.8	0.1	76	68	0.7
	<b>August 2016</b>									
32.	06/08 – 12/08	141.2	6	27.8	20.1	1.8	2.0	71	79	0.7
33.	13/08 – 19/08	18.7	3	28.9	20.2	1.7	3.3	74	78	0.5
34.	20/08 – 26/08	17.7	2	28.7	20.7	1.0	2.3	76	77	0.7
35.	27/08 – 02/09	1.6	0	29.1	20.7	0.8	1.6	69	75	1.0
	<b>Sept 2016</b>									
36.	03/09 - 09/09	2.2	0	29.0	20.8	1.1	4.9	71	73	1.9
37.	10/09 - 16/09	7.0	1	30.7	21.4	1.3	1.5	70	70	3.2
38.	17/09 - 23/09	47.8	5	28.2	21.0	1.3	0.0	69	81	0.8
39.	24/09- 30/09	8.5	2	29.3	21.3	0.9	3.4	68	74	1.1
	<b>Oct 2016</b>									
40.	01/10 - 07/10	2.5	0	28.6	21.0	0.7	4.1	68	84	7.5
41.	08/10 – 14/10	15.3	2	30.3	21.5	1.3	5.6	69	72	2.7
42.	15/10 – 21/10	00	0	31.8	20.1	1.0	7.6	74	65	4.0
43.	22/10 – 28/10	00	0	32.3	19.1	1.3	7.5	77	62	3.7
	<b>Nov 2016</b>									
44.	29/10 – 04/11	00	0	32.9	19.0	1.8	8.7	71	43	4.4
45.	05/11 – 11/11	00	0	31.7	16.9	1.6	9.8	77	50	6.3
46.	12/11 – 18/11	23.0	1	31.0	18.0	1.9	6.1	72	39	2.4
47.	19/11 – 25/11	00	0	30.5	15.4	1.8	8.7	67	55	3.3
48.	26/11 – 2/12	00	0	30.9	15.4	1.7	9.6	82	34	4.8
	<b>Dec 2016</b>									
49.	3/12 – 9/12	00	0	30.8	21.2	2.8	6.1	73	38	3.1
50.	10/12 – 16/12	00	0	30.9	12.7	1.5	5.7	78	53	2.8
51.	17/12- 23/12	00	0	31.9	15.4	2.5	2.9	62	52	2.8
52.	24/12-31/12	00	0	30.9	13.7	2.2	4.3	63	36	2.7
	<b>TOTAL</b>	<b>1067.6</b>	<b>59</b>							
	<b>Average</b>	<b>1067.6</b>	<b>59</b>	<b>32.79</b>	<b>19.66</b>	<b>1.79</b>	<b>4.92</b>	<b>68.65</b>	<b>49.25</b>	<b>3.30</b>

(vi)

**Table 2: Growth stage wise weather conditions during the year January to December, 2016.**

Growth Stages	Month	Rainfall (mm)	RD	Mean Temp (°C)		Wind Speed (kmph)	BSS (Hrs)	Relative Humidity (%)		Evap. (mm)
				Max.	Min.			M	E	
<b>Germination</b>	Jan-16	0.00	0	31.48	16.50	1.46	4.88	60.80	36.40	2.20
	Feb-16	0.00	0	34.80	17.55	2.05	4.95	74.20	36.70	3.48
	<b>Average</b>	<b>0.00</b>	<b>0</b>	<b>33.14</b>	<b>17.03</b>	<b>1.76</b>	<b>4.92</b>	<b>67.50</b>	<b>36.55</b>	<b>2.84</b>
<b>Tillering</b>	March-16	0.00	0	37.73	20.85	2.00	6.18	69.70	25.70	5.38
	April-16	0.00	0	39.46	23.02	2.42	7.24	58.60	25.20	6.24
	<b>Average</b>	<b>0.00</b>	<b>0</b>	<b>38.60</b>	<b>21.94</b>	<b>2.21</b>	<b>6.71</b>	<b>64.15</b>	<b>25.45</b>	<b>5.81</b>
<b>Early growth</b>	May-16	15.60	1	38.35	23.18	3.08	7.80	60.50	32.70	6.38
	Jun-16	164.80	10	32.08	20.33	1.63	2.55	69.70	55.20	2.60
	<b>Average</b>	<b>180.40</b>	<b>11</b>	<b>35.22</b>	<b>21.76</b>	<b>2.36</b>	<b>5.18</b>	<b>65.10</b>	<b>43.95</b>	<b>4.49</b>
<b>Grand growth</b>	Jul-16	601.70	26	28.52	20.30	1.30	0.70	74.80	73.20	0.70
	Aug-16	179.20	11	28.63	20.43	1.33	2.30	72.50	77.25	0.73
	Sep-16	65.50	8	29.30	21.13	1.15	2.45	69.50	74.50	1.75
	<b>Average</b>	<b>846.40</b>	<b>45</b>	<b>28.82</b>	<b>20.62</b>	<b>1.26</b>	<b>1.82</b>	<b>72.27</b>	<b>74.98</b>	<b>1.06</b>
<b>Flowering and maturity</b>	Oct-16	17.80	2	30.75	20.43	1.08	6.20	72.00	70.75	4.48
	Nov-16	23.00	1	31.40	16.94	1.76	8.58	73.80	44.20	4.24
	Dec-16	0.00	0	31.13	15.75	2.25	4.75	69.00	44.75	2.85
	<b>Average</b>	<b>40.80</b>	<b>3</b>	<b>31.09</b>	<b>17.71</b>	<b>1.70</b>	<b>6.51</b>	<b>71.60</b>	<b>53.23</b>	<b>3.86</b>
Total rainfall during crop season: 1067.60mm (59 Rainy days).										
The average rainfall is 1015.3 mm (66 rainy days) based on 40 years' data (1975-2015).										