10. Pest and disease surveillance of AICSIP centres

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Contents

I. Pest survey and surveillance from AICSIP centres 1

At a glance 1
Summary 2
Detailed report 2

II. Disease survey and surveillance from AICSIP centres 7

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I. Pest survey and surveillance from AICSIP centres

At a glance

The survey on pest surveillance was conducted for 25 times by each AICSIP centres during Kharif 2007; in Zone-I (Coimbatore, Palem), Zone-II (Dharwad, Parbhani, Akola, Indore, Surat) and Zone-III (Deesa, Udaipur).

1) **Zone I** :
   a) **Tamil Nadu**: Low infestation (< 15%) of shoot fly was observed. Stem borer infestation (20-25%) was moderate. This year the shoot fly incidence was higher than 2006-07. Midge incidence was low in Coimbatore district.
   b) **Andhra Pradesh**: No dry spell was experienced as observed in Andhra Pradesh in last year. In Mahboobnagar (AP) district, about 50% deadhearts due to shoot fly observed in Kothakota and Kummera villages. Whereas, stem borer in Itikyala village was highest (40%) of Mahboobnagar district.

2) **Zone-II**
   a) **Karnataka**: Stem borer incidence was negligible. Army worm (15%) noticed in the different farmers fields. In Bijapur districts, shoot fly incidence was moderate but severe
   b) **Maharashtra**: Shoot fly incidence was moderate (40%) but severe in late sown crop. In Tapangiri village of Parbhani 38% shoot fly deadhearts were recorded where CSH 9 was intercropped with pigeon pea.
   c) **Madhya Pradesh**: Early sown crop was attacked less (5%) due to shoot fly, but crop showed moderate incidence of stem borer (15-25%). The late sown crop in Shajapur and Jhabua districts suffered moderate damage due to shoot fly (40-50%).
   d) **Gujarat:** In Surat district, moderate to higher level of shoot fly incidence in local cultivar (57 % DH) was recorded. The stem borer infestation was moderate (> 38% DH).

3) Zone-III
   a) **Gujarat:** Moderate incidence of shoot fly (30-50 %) and low incidence of stem borer (<15%) was recorded in the farmer's field in Deesa district
   b) **Rajasthan:**. In general, 10-20 % shoot fly deadhearts were recorded. Low incidence of stem borer was recorded (<10% DH). There was low incidence of shoot bug (3-7% damaged plants) and moderate damage by head bugs to panicles (5- 7 on scale of 1-9).

Summary

State	Status
Tamil Nadu	1. Low infestation (< 15%) of shoot fly was observed. Stem borer infestation (20-25%) was moderate. 2. The late sown crop of improved varieties in Coimbatore, Salem, Namakal and Dharmapuri districts suffered moisture stress. 3. Midge incidence in Coimbatore (< 5%) was observed.
Andhra Pradesh	1. The shoot fly infestation was moderate (26.4%). 2. In Kothakota and Kummera highest deadhearts due to shoot fly was recorded (50%) in Maboobnagar district. 3. The highest stem borer deadhearts was noticed in Itikyala village (40%) in Mahboobnagar district. 4. There was low to moderate incidence of head bugs (18.1 bugs/5 panicles), the damage intensity ranged from 10 – 28 bugs/ 5 plants.
Karnataka	1. Stem borer incidence was negligible. 2. Army worm (15%) noticed in the different farmers fields. 3. In Bijapur districts, shoot fly incidence was moderate but severe in late sown sorghum.
Maharashtra	1. Highest shoot fly deadhearts was noticed (40%) at Zari village of Parbhani district. 2. However, 38% shoot fly deadhearts were recorded where CSH 9 was intercropped with pigeon pea in one of the field of Tapangiri village. 3. There was low infestation of sugarcane aphids and medium incidences of army worms. 4. Low infestation of Stem borer in *Jowar* is reported in Kolhapur District of Maharashtra.
Madhya Pradesh	1. It observed that the early sown crop was attacked less (5%) due to shoot fly, but crop showed moderate incidence of stem borer (15-25%). 2. The late sown in Shajapur and Jhabua districts suffered moderate damage due to shoot fly (40-50%). 3. Shoot fly damage was recorded (< 30% deadhearts) and stem borer was very low (5%) in Indore region.
Gujarat	1. Moderate incidences of shoot fly (30-50 %) and low incidence of stem borer (<15%) was recorded in the farmer's field in Deesa district. 2. In Surat district, however, in some of the farms moderate to higher level of shoot fly incidence in local cultivar (33.3 to 56.9 % deadhearts) was recorded. 3. The infestation due to stem borer was moderate (21.7 to 37.8 % DH). 4. There was low incidences of midge, head bug and shoot bug.
Rajasthan	1. In village Jeetaval, the incidence of shoot fly (10-15% DH), stem borer (7-8 %DH) and head bug (5%) was recorded. 2. In Changedi village, variety: CSH 18, SPV 1616 were grown. The incidence of shoot fly (5-18%), stem borer (8-10 %) and shoot bug (6-7 %) was observed. 3. In general, 10-20 % shoot fly deadhearts were recorded. 4. Low incidence of stem borer was recorded (5-10% DH). 5. There was low incidence of shoot bug (3-7% damaged plants) and moderate damage by head bugs to panicles (5- 7 on scale of 1-9.) 6. There were sporadic attcak of army worm, hairy caterpillar and grasshopper.

Detailed report

The survey on pest surveillance were conducted for 2-5 times by each AICSIP centres during cropping season- Kharif 2007; in Zone-I (Coimbatore, Palem), Zone-II (Dharwad, Parbhani, Akola, Indore, Surat) and Zone-III (Deesa, Udaipur). The details report is given below.

1. **Tamil Nadu:** Low infestation (< 15%) of shoot fly was observed. Stem borer infestation (20-25%) was moderate. The late sown crop of improved varieties in Coimbatore, Salem, Namakal and Dharmapuri districts suffered moisture stress. The long duration Kharif sorghum sown during July-August has shown yellowing symptoms top dressing of nitrogen @ 40 kg /ha is recommended before the onset of north east monsoon. Midge incidence (< 5%) was low in Coimbatore district.

2. **Andhra Pradesh:** The survey for sorghum pests was carried out at 14 locations (Boyapur, Karkonda, Desi Itikyala, Sandhuvatla, Mahadevpet, Mamaipally, Buddharam, Sainpally, Pedda, Moddhunnur Gudlanerva Kothakota Kummera and Gorita) in Mehboobnagar district. Observations were taken on shoot fly deadhearts of shoot fly and stem borer. The incidence of head bugs was also recorded. The shoot fly eggs were highest in Sainipally (28 eggs/5 plants). The shoot fly infestation was moderate (26.4%) and damage ranged from 10-50%. In Kothakota and Kummera highest dead hearts % due to shoot fly was recorded (50%). There was moderate infestation of stem borer (16.4%), the damage range was from 10-40%. The highest stem borer dead hearts was noticed in Itikyala village (40%). There was low to moderate incidence of head bugs (18.1 bugs/5 panicles), the damage ranged from 10 – 28 bugs/ 5 plants.

3. **Karnataka:** Good rains were received throughout Karnataka. In Dharwad region about 714.1 mm rainfall was received till August, 2007. The hybrids/varieties grown in Dharwad region were CSH 14, 16, MSH 51, AM 251, BIO 504, PRO 8384, JKSH 22, MLSH 296, and NSH 27. Stem borer incidence is negligible. Army worm (15%) noticed in the different farmers fields Downy mildew incidence is negligible. Crops were affected by heavy rains and floods at different levels. The incidence of other pests (aphids, shoot bugs and army worms, midge etc) occurred in a sporadic manner Due to heavy rains in some parts of north Karnataka Kharif sowings were delayed. Under the circumstances the soaking of seeds in endosulfan @ 2ml/litre of water (soaking in water for 8-10 hours followed by shade drying before sowing) was recommended for better germination and prophylactic measures against the shoot fly infestations. Usually the popular hybrids are CSH14, CSH18, Mahyco, Ganga Kaveri, Proagro and other Pvt. Company hybrids are grown Usually the popular hybrids are CSH14, CSH18, Mahyco, Ganga kaveri , Proagro and other Pvt Company hybrids have been sown wherever protective irrigation is available. In Bijapur districts, shoot fly was moderate and severe in late sown sorghum. There was heavy attack of shoot bug in Rabi sorghum and as a result severe incidence of stripe virus was observed.

4. **Maharashtra:** Fifteen farmer fields in twelve villages (Dharmpuri, Takali, Zari, Kok, Bori, Nandapur, Chandaj, Khofi, Daithna, Tapangari, Brahimingao and Taroda) in Parbhani district were surveyed for pest incidence. The varieties/hybrids (JK 22, Mahyco, CSH 16, PVK 809, Mahindra, CHS 9 and Meh 53) were mostly found in cultivations in the farmers fields that surveyed. The sowing was done during second to third week of June. The data was recorded on shoot fly, stem borer; head bug and shoot bug at 35-40 DAE. There was moderate incidence of shoot fly (30% DH) in range of 21–40% DH. Highest shoot fly deadhearts % was noticed (40%) at Zari village. However, 38% shoot fly deadhearts were recorded where CSH 9 was intercropped with pigeonpea in one of the field of Tapangiri village. Low incidences of stem borer (3.4%) shoot bug (1.7% damage) and head bug (1.5 on scale of 1-9) was noticed. There was low infestation of sugarcane aphids and medium incidences of army worms. Other pests did not show remarkable incidence. One spray of endosulfan was applied in the field of Nadnapur village where 26% and 4% deadhearts due to shoot fly and stem borer was recorded. In Akola district, 749.3 mm rainfall was received till September end. Mainly, CSH 14, 296, CSH 16, SPV 669 and CSV 15 sorghum hybrids and varieties were grown.

5. **Madhya Pradesh**: The survey was carried out in sorghum growing area of Shajapur, Dewas, Jhabua, Dhar, Mandav and Ujjain. It observed that the early sown crop was less attacked (5%) from the shoot fly, but it was moderate attacked by stem borer (15-25%). The late sown in Shajapur and Jhabua districts suffered moderate damage due to shoot fly (40-50%). In other areas i.e. Ujjain, Mandav and Dewas crop received moderate infestation of both pests about 20-30%. The bugs and worms were also observed in early sown crops in the number of 2-3/ plant, but in case late sown crop, it was negligib le. In Indore, rainfall recorded 800 mm till September 2007. Shoot fly damage was recorded (< 30% deadhearts) and stem borer was very low (5%). Other pests were at minimum level.

6. **Gujarat:** In Deesa district, total rainfall was recorded 682.7 mm till August In September there was no rain. Moderate incidences of shoot fly (30-50 %) and low incidence of stem borer (>15%) was recorded in the farmer's field. In Surat, this year also, there was heavy rainfall and most of the crop has been damaged due to heavy rains. The rainfall in month of July was recorded highest 635.6 mm and 495.2 mm in August. However, in some of the farms have shown moderate shoot fly incidence in local cultivar (33.33 to 56.87 % deadhearts). The infestation due to stem borer was medium (21.72 to 37.81 % DH). There was low incidences of midge, head bug and shoot bug.

7. **Rajasthan:** Survey for sorghum pest incidence was carried out at three locations in two districts (Jeetaval in Chittorgarh, Changedi and Nawania in Udaipur district). Two varieties: SPV 1616, SPV 1685 was planted in village Jeetaval. The pest incidence was recorded at 21, 45, 60, 90 DAE The incidence of shoot fly (10-15% DH), stem borer (7-8 %DH) and head bug (5%) was recorded. In Changedi village, variety: CSH 18, SPV 1616 was grown. The incidence of shoot fly (5-18%), stem borer (8-10 %) and shoot bug (6-7 %) was observed. Whereas, two varieties (SPV 1616 and CSV 15) was sown in village in Nawania, where moderate attack of shoot fly (20%), and lower incidence of stem borer (7 %). All the crops were grown in sole conditions. In general, 10-20 % shoot fly deadhearts were recorded and moderate damage ranged from 10–20%DH. Low incidence of stem borer was recorded (5-10%DH). There was low incidence of shoot bug (3-7% damaged plants). There was moderate damage by head bugs to panicles (5-7 on scale of 1-9. There were sporadic incidences of army worm, hairy caterpillar and grasshopper. No plant protection measures were undertaken except at Jeevtal where 2 % methyl parathion dust was used at 45 DAE against pests.

Trial 1: AICSIP Entomology data on pest surveillance in sorghum recorded at Jeetaval, Chittorgarh (Rajasthan)

Sample/ Field No. (Visit)	Meteorological std week No.	Location	District	Name of cultivar/Hybrid	Date of survey	Date of sowing	Age of crop & crop stage	Season	Cropping pattern (Sole, inter, relay etc)	Shoot fly (DH%)	Stem borer (%DH)	Midge Spikelet damage (%)	Head bug panicle damage rating (1-9)	Shoot bug damage (%)	Pyrilla damage rating (1-9)	Other pests if any	Soil type, previous crop, irrigated, Rain fed	Plant protection measures taken	Remark
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	30	Jeetaval	Chittorgarh	SPV 1616, SPV 1685	27/7/07	5/7/07	3 weeks / vegetative	Kharif	Sole	10-12	N/A	N/A	N/A	N/A	N/A	-	light/ gram/ irrigated	Nil	-
2	34	"	"	"	20/8/07	"	45 days old/ vegetative	"	"	15	7-8	N/A	N/A	5	-	Army worm	"	methyl parathion 2% dust	-
3	37	"	"	"	10/9/07	"	2 Months/ reproductive	"		-	-	-	N/A	-	-	-	-	-	-
4	40	"	"	"	1/10/07	"	3 Months/ Physiologic al maturity	"		-	-	-	5	N/A	-	-	-	-	-

Trial 2: AICSIP Entomology data on pest surveillance in sorghum recorded at Changedi, Udaipur (Rajasthan)

Sample/ Field No. (Visit)	Meteorological std week No.	Location	District	Name of cultivar/Hybrid	Date of survey	Date ofsowing	Age of crop & crop stage	Season	Cropping pattern (Sole, inter, relay etc)	Shoot fly (DH%)	Stem borer (%DH)	Midge Spikelet damage (%)	Head bug panicle damage rating (1-9)	Shoot bug damage (%)	Pyrilla damage rating (1-9)	Other pests if any	Soil type, previous crop, irrigated, Rain fed	Plant protection measures taken	Remark
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	30	Changedi	Udaipur	CSH 18, SPV 1616	27/7/07	5/7/07	3 weeks / vegetative	Kharif	Sole	15-18	N/A	N/A	N/A	N/A	N/A	-	light/ wheat/ irrigated	Nil	-
2	34	"	"	"	20/8/07	"	45 days old/ vegetative	"	"	15-18	8-10	N/A	N/A	3-5	N/A	Kharif Grass hopper	"	N/A	-
3	37	"	"	"	10/9/07	"	2 Months/ reproductive	"		-	-	-	-	6-7	-	-	-	-	-
4	40	"	"	"	1/10/07	"	3 Months/ Physiological maturity	"		-	-	-	7	-	-	-	-	-	-

Damage rating: 1= Lowest; 9 = Severe; DH = Deadhearts

Trial 3: AICSIP Entomology data on pest surveillance in sorghum recorded at Nawaria, Udaipur (Rajasthan)

Sample/ Field No. (Visit)	Meteorological std week No.	Location	District	Name of cultivar/Hybrid	Date of survey	Date of sowing	Age of crop & crop stage	Season	Cropping pattern (Sole, inter, relay etc)	Shoot fly (DH%)	Stem borer (%DH)	Midge Spikelet damage (%)	Head bug panicle damage rating (1-9)	Shoot bug damage (%)	Pyrilla damage rating (1-9)	Other pests if any	Soil type, previous crop, irrigated, Rain fed	Plant protection measures taken	Remark
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	30	Nawania	Udaipur	SPV 1616, CSV 15	27/7/07	7/7/07	3 weeks / vegetative	Kharif	Sole	20	N/A	N/A	N/A	N/A	N/A	-	light/ gram/ irrigated	-	-
2	34	"	"	"	20/8/07	"	45 days old/ vegetative	"	"	20	5-7	N/A	N/A	-	-	Army worm	"	-	-
3	37	"	"	"	10/9/07	"	2 Months/ reproductive	"		-	-	-	-	-	-	-	-	-	-
4	40	"	"	"	1/10/07	"	3 Months/ Physiological maturity	"	-	-	-	-	5	-	-	Hairy caterpillar	"	-	-

Damage rating: 1= Lowest; 9 = Severe; DH = Deadhearts

Trial 4: Pest survey carried out in Marathwada region

Sample field No.	Location Gangakhed & Jintur Road	District	Name of the cultivator Hybrid	Date of Survey	Date of Sowing	Age of Crop & crop Stage	Season	Cropping Pattern (Sole, Inter relay etc)	Shoot fly (DH %)	Stem Borer (% DH)	Head bug panicle damaged rating (1-9)	Shoot bug damage (%)	Other pests if any	Soil type previous crop irrigated rain fed	Plant protection measures taken
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Dharmapuri	Parbhani	--	3/8	25/6	35 DAE	K	S	25 %	2%	2 HB	--	**AW (M)**	Black cotton	No
2	Takali	Parbhani	--	3/8	20/6	35-40 DAE	K	S	28%	3 %	2 HB rating	3 %	**--**	Black cotton	No
3	Zari	Parbhani	JK 22	3/8	16/6	40 DAE	K	S	40 %	6%	2	2 %	**AW (M)**	Black cotton	No
4	Kok	Parbhani	Mahico	3/8	18/6	40 DAE	K	S	26 %	6%	--	4 %	**--**	Black cotton	No
5	Bori	Parbhani	CSH 16	3/8	25/6	35 DAE	K	S	31 %	7%	2	4 %	**AW (M)**	Black cotton	No
6	Nandapur	Parbhani	PVK 809	3/8	15/6	45 DAE	K	S	26 %	4%	--	6 %	**--**	Black cotton	Endo.
7	Chandaj	Parbhani	PVK 809	3/8	22/6	35 DAE	K	S	30 %	2%	2	3 %	**AW (M)**	Black cotton	--
8	Khofi	Parbhani	Mahindra	3/8	21/6	40 DAE	K	S	35 %	2%	--	--	A(L)	Black cotton Wheat	--
9	Daithna	Parbhani	CSH9	3/8	1/7	30 DAE	K	S	23 %	–	--	--	A(L)	Black cotton Wheat	--
10	Daithna	Parbhani	CSH9	3/8	3/7	30 DAE	K	S	35 %	4%	--	--	A(L)	Black cotton Wheat	--
11	Tadpangari	Parbhani	CSH9	2/8	26/6	35 DAE	K	Jowar + Tur	38 %	4%	1	--	A(L)	Black cotton Wheat	--
12	Tadpangari	Parbhani	Meh 53	2/8	26/6	35 DAE	K	S	21 %	4%	1	--	A(L)	Black cotton Wheat	--
13	Brahimingaon	Parbhani	--	2/8	15/6	40 DAE	K	S	29 %	2%	1	4 %	--	Black cotton Wheat	--
14	Taroda	Parbhani	--	2/8	30/6	35 DAE	K	S	24 %	2%	2	--	--	Black cotton Wheat	--
15	Taroda	Parbhani	--	2/8	2/7	30 DAE	K	S	30 %	3%	1	2 %	--	Black cotton Wheat	--
									30 %	**3.4 %**		1.7 %			

Damage rating, 1 lowest, 9 –severe, DH: Deadhearts; AW=Army worm incidence; M=Minor; DAE=Days after emergence; A=Aphid; L=Low; M=Medium; H=High

II. Disease survey and surveillance from AICSIP centres

Tamil Nadu: During late Kharif, 2007 a survey was conducted in Coimbatore, Salem, Erode, Karur, Namakkal and Cuddalore districts of Tamil Nadu to assess the prevalence and severity of sorghum diseases. The most common diseases observed were downy mildew, leaf blight, rust and grain mold. Downy mildew incidence was observed only in Coimbatore and Erode districts. The maximum per cent incidence (63%) of downy mildew was observed in Thondamuthur village of Coimbatore district (Table 1). The incidence of grain mold was noticed in Palladam, Madathukulam, Thondamuthur, Madampatti, Theethipalayam, Pudupalayam and Selvapuram of Coimbatore district and the disease intensity varied between 2.0 and 2.3. Leaf blight incidence was prevalent in all the locations surveyed and the disease intensity was ranging from 1.6 to 3.2. The maximum incidence of leaf blight (grade 3.2) was observed in Thondamuthur and Theethipalayam of Coimbatore district. Maximum incidence of rust (grade 3.2) was recoded in Selvapuram of Coimbatore district.

Table 1. Survey for incidence of sorghum diseases in Tamil Nadu during late Kharif, 2007

S. No	District	Number of villages surveyed	Disease grade (range)			
			Grain mold (1-5 scale)	Downy mildew (%)	Rust (1-5 scale)	Leaf blight (1-5 scale)
1	Coimbatore	24	2.0-2.3	2.0 -63	2.0-3.2	1.7-3.2
2	Erode	12		4-29		1.8-2.3
3	Karur	4			2.0-2.5	2.0-2.5
4	Namakkal	8			2.0-2.5	1.8-2.5
5	Salem	5				1.8-2.5
6	Cuddalore	2				2.0-2.4

Rajasthan: Due to scanty rain fall received in the month of July, low incidence of foliar diseases was observed in the local land races in farmers fields Surveyed in Chittorgharh District. During the first survey taken up in late July, low to moderate infection of anthracnose and zonate leaf spot were observed. However in the latter surveys taken up during August and September months anthracnose was severe, while zonate leaf spot and target leaf spot were moderate only with a score of 2.5-3.5. Severe incidence of anthracnose and zonate leaf spots was recorded on SPV 1616, CSH-18

Uttaranchal: In Uttarakhand, surveys were conducted in three districts viz., Haridwar, Dehradun and Udham Singh Nagar during Kharif 2007 season to assess the incidence of various diseases of sorghum during August/ September 2007. Severe incidence of anthracnose and zonate leaf spot were observed in all the districts. (Table-2). At Pantnagar the total precipitation received during the season was1144.0 mm spread over 33 rainy days. The severity of these diseases was observed on varieties PC-6, CSV-15, SPV 1616 and local cultivars. Local entries are highly susceptible to anthracnose and zonate leaf spot with an incidence of 3.5 to 4.0, while improved varieties like CSV-15 had less disease incidence.

Karnataka: The monitoring for incidence of major diseases in Northern districts of Karnataka was under taken during kharif 2007. The survey results indicated that Sorghum downy mildew (7.6%), rust (6.5), zonate leaf spot (3.5), ergot(2.5%) and grain mold(6.2), appeared as major diseases during kharif 2007 in Northern districts of Karnataka. Due to continuous intermittent rains during June(22 days) July(30 days) August(26 days and September(24 days) severely affected the sporulation and spread of downy mildew resulting low incidence disease recorded during kharif 2007)

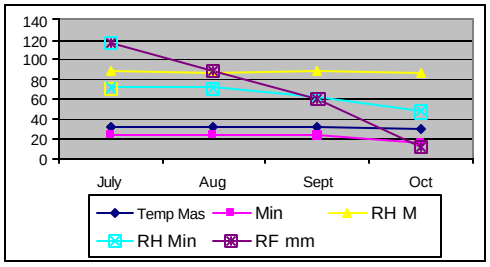
Table1: Survey for the incidence of diseases in Karnataka

			Incidence (%)		*Disease scale (1-5)*				
S.no	*District*	*Locations*	*SDM*	*Ergot*	*Rust*	*ZLS*	*Anth*	*SS*	*SGM*
1	Dharwad	5	14	1	3.8	5.8	1.8	1.8	6.5
2	Navulgunda	7	5.7	1.7	3	7	3.1	19	6.1
3	Gadag	5	7.6	2.6	2.6	6.2	2	1.6	6.2
4	Belgaum	6	5.2	1.3	3	6.3	1.6	2.3	5.8
5	Haveri	5	5.6	5.6	3.4	7.2	2.4	2.8	6
	Mean		7.6	2.5	3.2	6.5	2.2	2.1	6.2

Table 2 Survey for incidence of diseases in Uttaranchal

S. No	District	Number of locations	Disease grade (1-5)	
			Anthracnose	Zonate Leaf Spot (1-9)
1	Haridwar	6	2-4	2-4
2	Dehradurn	5	2-4	2-4
3	Udhamsingh Nagar	7	2-4	3.0

Weather data at Pantnagar during Kharif 2007



Weather data of Akola

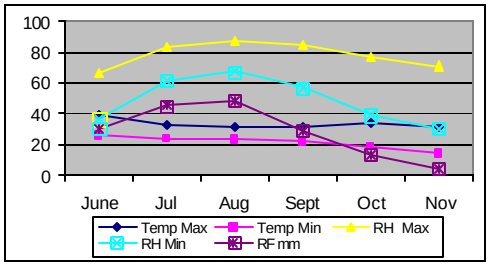


Table: Incidence of various diseases of sorghum in Rajasthan during Kharif 2007

District	*Villages surveyed*	*Anthracnose (1-9 scale)*	*Zonate leaf spot (1-9 scale)*	*Target leaf spot (1-9 scale)*
Udaipur	4	5.4		
Chittorgharh	8	3.9-7.2	3.9- 6.3	6.3

Andhra Pradesh: Surveys were conducted in farmers' fields in 10 villages of Mahaboobnagar district during Kharif 2007. Among panicle diseases, grain mold and sugary disease were severe, while among foliar diseases, anthracnose, zonate leaf spot and rust were moderate in incidence

Maharashtra: In Marathwada region, two surveys were conducted during Kharif season at boot leaf emergence stage and second one at grain development stage. Initially the crop was found to be free from all the diseases. In view of the less rain fall received at grain formation stage, the incidence of grain mold was also less in varieties compared to hybrids. In general the incidence of grain mold during Kharif 2007 was less in Marathwada region. Minor incidence of leaf spot, rust, smut diseases wee observed.

Vidharbha region: In Vidharbha region of Maharashtra three districts viz., Akola, Yawatmal and Amaravathi were surveyed during Kharif 2007. The crop was sown during last week of June to first week of July with private hybrids like Mahalakshmi, Krishidhan. Public sector hybrids were grown in Akola district, where CSH-9 is till predominant one. The incidence of grain mold was severe in all the districts surveyed in all the hybrids grown varying from 3.6 to 7.2 on 1-9 scale. Akola recorded severe incidence of molds followed by Amaravathi and Yawatmal districts. Severe incidence of sooty stripe was recorded in all the districts, while low incidence of anthracnose was found in Akola district.

District	*Villages surveyed*	*Grain molds (1-9 scale)*	*Leaf blight (1-9 scale)*	*Sooty stripe (1-9 scale)*
Akola	17	5.4		
Yawatmal	7	3.9-7.2	3.9- 6.3	6.3
Amaravathi	4			