

PROGRESS REPORT

AICSIP Entomology

(2016-17)

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IIMR, Hyderabad

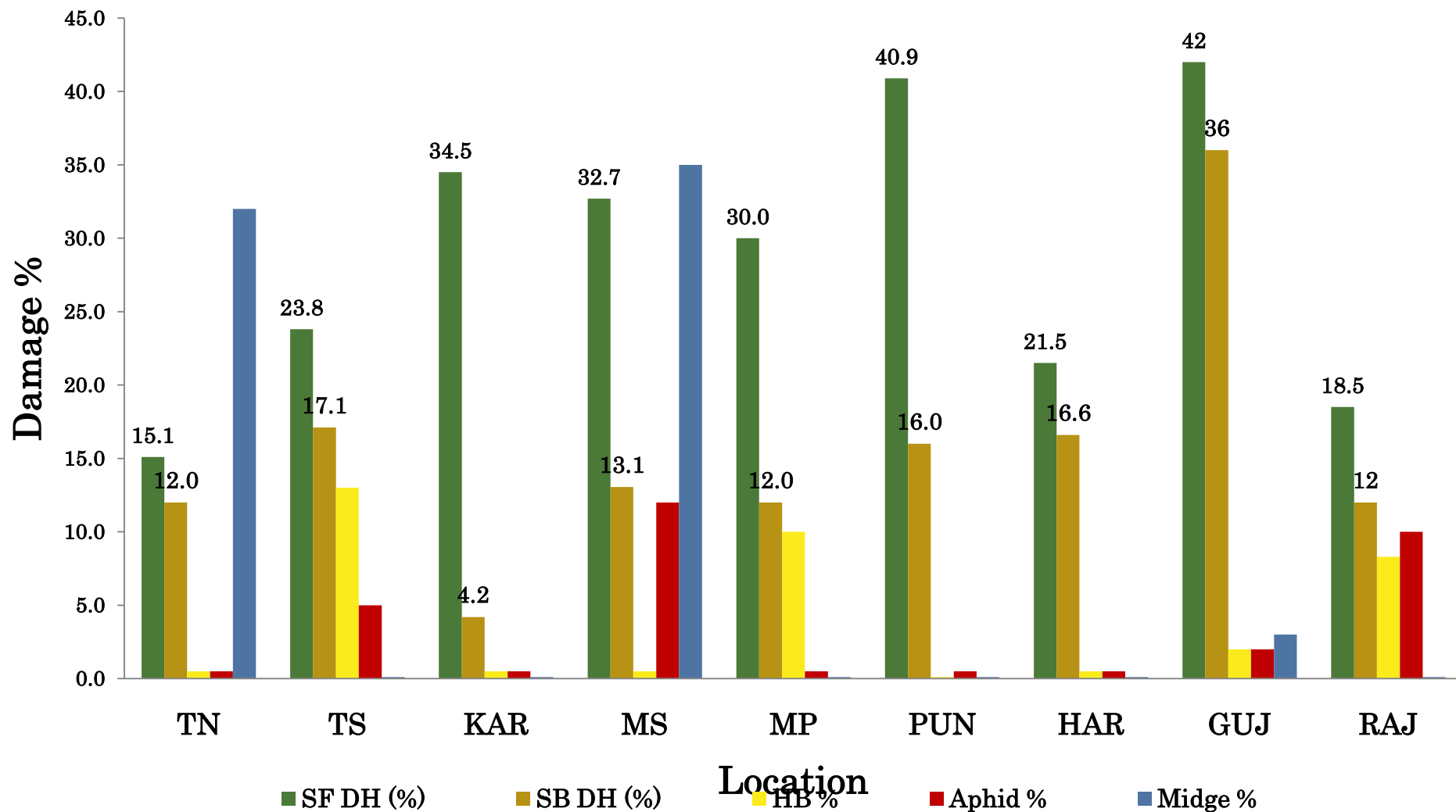
TEAM

IIMR : K Srinivas Babu, A Kalaisekar, B Subbarayudu
AICSIP : P. Anandhi, N Jemimah, DB Pawar, Mohd. Ilyas, V Sonalkar,
DN Kambrekar, S Karbhantanal, RK Choudhary, Nirav
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Action taken report

Sl. No	Recommendations	Action taken
1	Training of Entomologists on HPR	IIMR, Hyderabad conducted a training on Insect host plant resistance during 22 – 31st Aug, 2016 wherein five entomologists from AICRP were trained.
2	Emphasis should be given more on publications	6 journal, 22 conference, 15 popular and 3 training manuals were published.

Sorghum pests situation: Kharif -2016



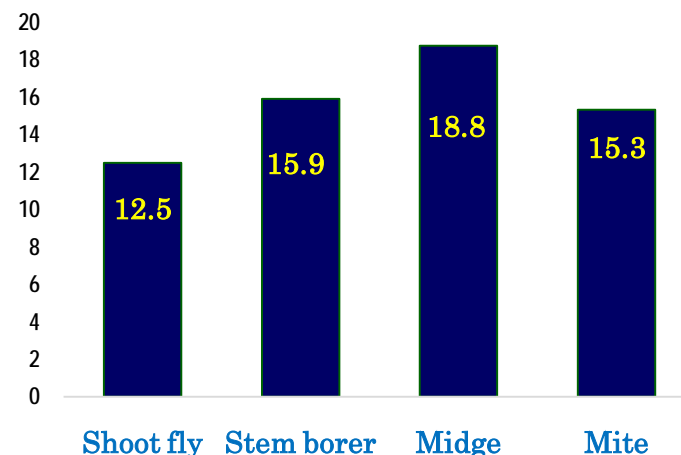
Source: Pest surveillance data collected around AICSIP centre

Trial summary- Kharif-2016

Evaluation of AICRIP trials

Trials	Loc. (No)	Entry (No)	Entries selected (No)			
			SF ($\leq 45\%$)	SB ($\leq 15\%$)	MD (≤ 3 r)	Mite (≤ 3 r)
AHT-GS	9	15	-	1	3	5
AVT-GS	9	23	-	3	4	4
IHT-GS	9	18	-	5	5	0
IVT-GS	9	29	-	5	2	2
IAVHT-MC	6	23	5	4	5	5
AVHT-SC	6	22	7	3	5	6
IVHT-SC	6	24	8	2	4	5
IAVHT-SS	8	22	2	6	5	0
Total		176	22	28	33	27

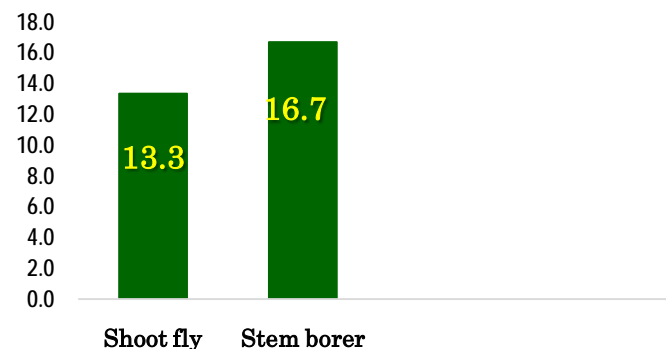
Promising entries (%) from AICRIP trials Kh 2016



Evaluation of Shoot Pest Nursery




Trials	Locations (No)	Entry (No)	Entries selected (No)			
			SF ($\leq 45\%$)	SB ($\leq 15\%$)	HB (≤ 3 r)	Mite (≤ 3 r)
AICSIP-SPN	10	30	4	5	0	0

Promising entries (%) from SPN trials Kh 2016

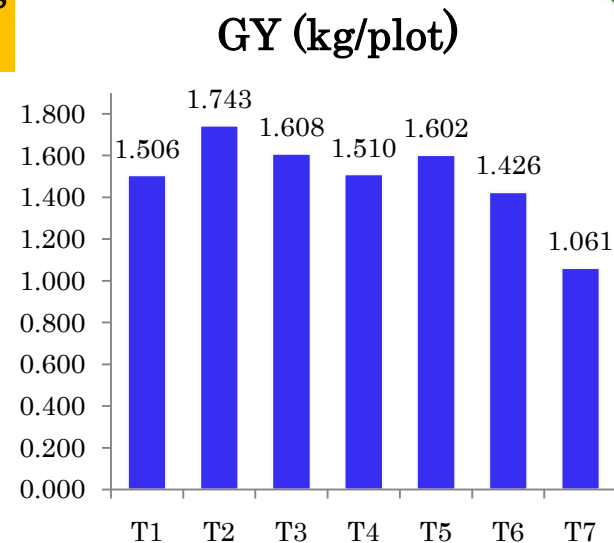
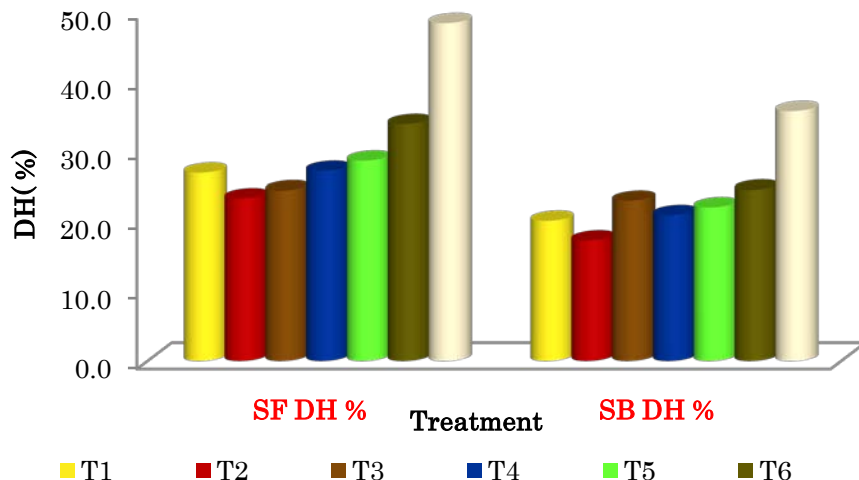


Major sources for pest resistance

Kharif- 2016

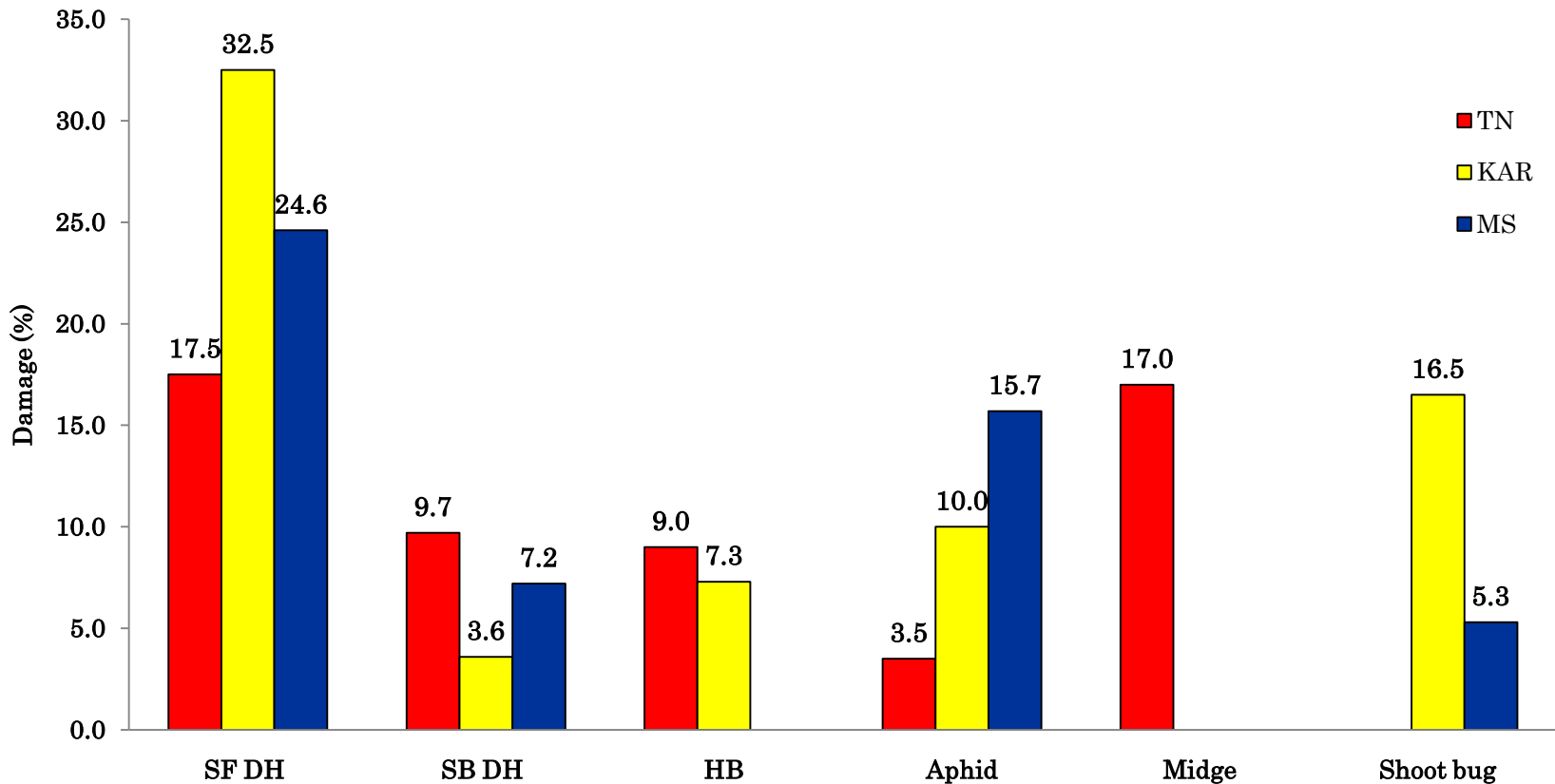
Pests	Promising sources	Testing Centers	Remarks
 Shoot fly	SPH 1806, SPV 2388, SPV 2387, SPV 2385, SPV 2383 PVK 902 SS, RSSV 397, BNV 364	Parbhani, Udaipur, Indore, Akola, Surat, Dharwad, Hyderabad, Ludhaina	Sel: < 47% DH R- IS 18551= 45 % S- Swarna = 90% DH
 Stem borer	SPVs 2296, 2293, 2301, 2439, 2436, 2437, SPHs 1853, 1847, S-652, SPV 2242, SPV 2366, PVK 1015, AKSV 408	Hisar, Hyderabad, Coimbatore, Indore, Surat, Ludhaina	Sel: <15% DH R- IS 2205= < 10 %DH S- Swarna = 50% DH
 Multi-pest	CSH 24MF, SSG 59-3, SPV 2353, SPH 1861, SPH 1862, CSV 21F, CSV 30F, SPH 1852, SPH 1850, PVK 1015		

Integrated pest management strategies Kharif sorghum -2016



T1	Seed treatment with imidacloprid 70 WS @ 3 g/seed
T2	Seed treatment with imidacloprid 70 WS @ 3 g/seed + whorl application of carbofuran 3G @ 8 kg/ha at 30 DAE
T3	Seed treated with imidacloprid 70 WS @ 3 g/seed + spray of 5 % NSKE at 45 DAE
T4	Seed treated with imidacloprid 70 WS @ 3 g/seed + spray of methyl demeton 25 EC/ Quinolphos 25 EC @ 2 ml/lit at 45 DAE
T5	Furrow application of carbofuran 3 G @ 20 kg/ha at 30 DAE
T6	Furrow application of carbofuran 3 G @ 20 kg/ha at 30 DAE + spray of methyl demeton 25 EC/ Quinolphos 25 EC @ 2 ml/lit at 45 DAE
T7	Sorghum crop untreated (Control)

Sorghum pests scenario: Rabi -2016-17



Note: Pest surveillance data collected around AICSIP centre

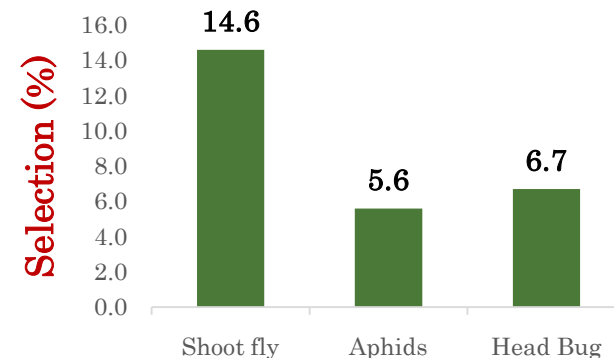
Evaluation of AICRIP trials

S N	Trials	Loc	Entry (no)	SF ($\leq 40\%$)	SB ($\leq 10\%$)	AP (≤ 4)	SH (≤ 4)	HB (≤ 4)
1	IAHT-DS	6	24	2	0	2		2
2	IAVT-DS	6	30	5	0	2		0
3	IAVHT-SS	6	35	6	0	1		4
		Total	89	13	0	5		6

Evaluation of Shoot Pest Nursery

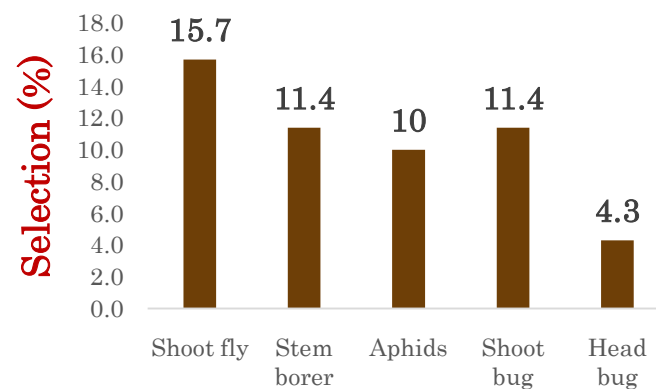
1	SPN	5	22	6	4	1	0	3
2	ASFN	6	23	5	4	5	4	0
3	APSHN	5	25	0	0	1	4	0
		Total	70	11	8	7	8	3

Selections from AICRIP trials Rabi 2016



Major pests




Entomology trials-Rabi 2016



Major Pests

Major sources for pest resistance

Rabi -2016-17

Pests	Promising sources	Testing Centers	Check used
 <p>Shoot fly</p>	SPHs 1864, 1865, 1835, 1873, SPVs 2405, 2473, 2475, 2468, 2472, 2483, 2414, 2487, 2330, 2230, 2139, 2225, 2338, 2345	Dharwad, Parbhani, Rahuri, Hyderabad, Solapur	Sels: <40% DH R- IS 18551= < 35 % DH S- DJ 6514 = 85% DH
 <p>Aphid</p>	SPHs 1801, 1867, SPVs 2408, 2471, 2483, 2330, RSVs 1928, 1882, 1855, 1978, NRCSFPR 09-3, PBR 110	Parbhani, Rahuri, Bijapur, Solapur	Sels: <3 DR R- TAM 428 = 3 S- Swarna = 7
 <p>Shoot bug</p>	RSV 1928, RSV 1410(2), RSV 1816, RSSGV , SLV 142, 145, SLR 72, PBN ENT 2	Bijapur, Solapur, Parbhani, Hyderabad	Sels: < 3 DR R- TAM 428= 3 S- Swarna = 7
Multi-pest Tolerance (APH+SHB)	RSV 1928, RSV 1816, SPH 1801, SPV 2483	Bijapur, Rahuri, Solapur, Parbhani	As above

Management of shoot pest in sorghum, Bijapur-Rabi 2016-17

Treat ment	SFDH%	SBDH %	No. of Aphids/ 5 cm ² leaf	Shoot bugs/ plant (no)	Sorghum grain Yield (q/ha)	Crop Equivalen t yield (q/ha)	Gross Income (Rs/ha)	Increase over farmers practice (%)
T1	7.7	4.4	21.1	9.3	9.5	21.4	53472	19.4
T2	9.6	6.8	17.9	13.3	20.9	20.9	52192	6.8
T3	8.5	5.3	30.9	17.9	22.7	22.7	56683	26.7
T4	10.1	5.9	22.6	11.1	20.6	20.6	51475	13.7
T5	6.3	5.5	19.0	8.1	20.9	20.9	52358	16.2
T6	8.2	5.2	18.6	11.0	24.3	24.3	60750	32.9
T7	10.4	5.7	36.9	18.7	18.4	18.4	45925	19.4
Mean	8.7	5.5	23.9	12.8				
C.D (0.05)	NS	NS	8.87	4.54	3.54	NS		

T1: Seed treatment with Imidacloprid 48%FS @ 12ml/kg + Intercropping with chickpea: Sorghum (4:2) + NSKE (5%) spray at 45DAE

T2: Seed treatment with Biofertilizers (Trichoderma+ PSB + Azospirillum)+ 50% Neem cake(1q/ha)+50% + Vermicompost (4q/ha) at the time of sowing + NSKE (5%) spray at 45DAE

T3: Seed treatment with Biofertilizers (Trichoderma+ PSB + Azospirillum)+ Btk @ 2g/lit at 25 DAE -Spray of Lecanicillium lecani @ 2ml/l at 45DAE

T4: Seed treatment with Imidacloprid 48% FS @ 12ml/kg + Eco feast crop like one row of cowpea around sorghum + NSKE (5%) spray at 45DAE

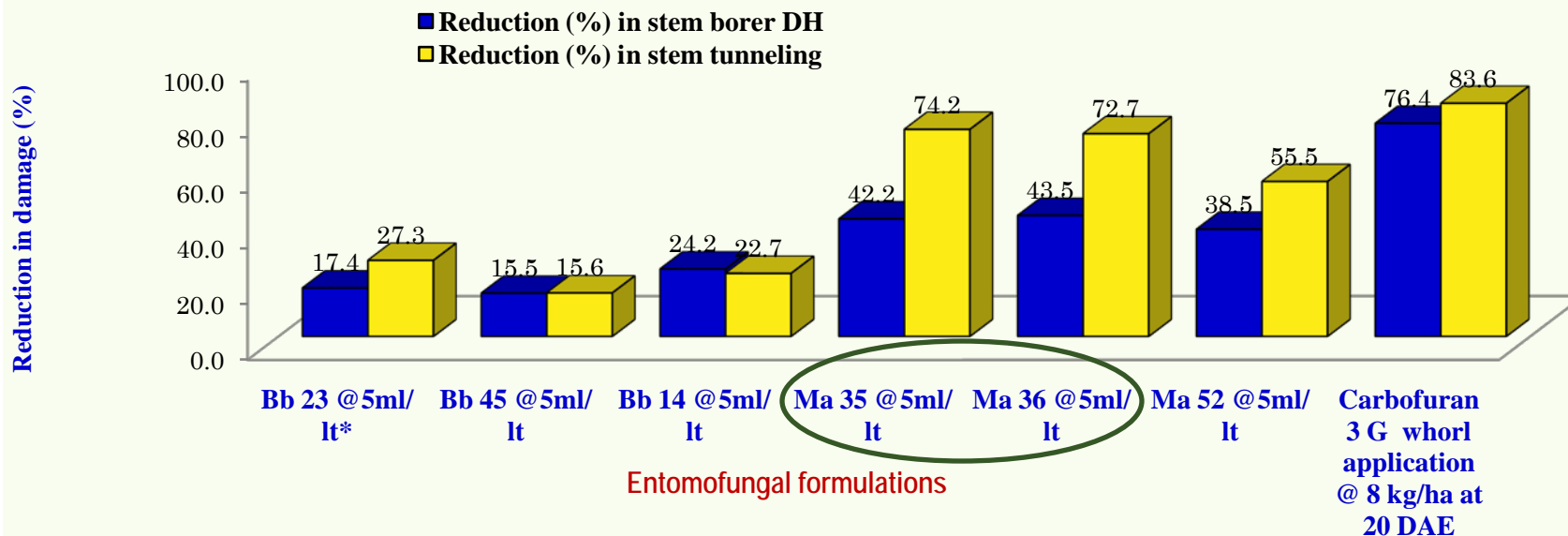
T5: Seed treatment with Imidacloprid 48%FS @ 12ml/kg + Cypermethrin @ 2ml/l spray at 45DAE

T6: Soil application of Carbofuran 3G (25kg/ha) + Seed treatment with Chlorpyrifos 20EC @ 5ml in 20ml of water + Spray of Cypermethrin @ 2.0ml/l at 25DAE (RPP of UAS, Dharwad)

T7: Farmer practice (Untreated)

Inter institutional collaboration

Evaluation of NBAIR entomofungal strains against Spotted stem borer (Kharif 2015, 16)



- Entomofungal formulations Ma 36, 35 caused significantly low deadhearts (9.1, 9.3 %); low stem tunneling (3.5 and 3.3 %); less exit holes/ stalk (1.5, 1.4 nos/ stalk).
- Formulations were comparable, with carbofuran, indicating the scope of integration of these formulation in IPM

IIMR-AICSIP Publications- 2016

Type of publications	Publications (no)	Contributing centers
National Journals	6	Kovilpatti, Surat, Akola, Hyderabad
Conference/posters papers	22	Ludhiana, Kovilpatti, Akola, Udaipur Hyderabad
Training Manuals	3	Hyderabad, Kovilpatti
Popular articles	15	Kovilpatti, Palem, Dharwad, Akola
Total	46	
Awards	03	Drs Karabhantal, Anandhi, Ravinder

Looking ahead...

1. Evaluation of Germplasm (NGSN) for major pests
2. IPM module on farmers' field at large scale
3. New molecules/bio-rational pesticides



THANK YOU