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Reaction of Different Pearl Millet Hybrids against Pearl Millet Shoot Fly, Atherigona Approximate Malloch

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Pearl millet, (*Pennisetum glaucum*) is the staple food of majority of the poor and small land holders, as well as feed and fodder for live stock in the rain fed region of the country. In India, pearl millet occupies an area of 6.93 million ha with an average production of 8.61 million tonnes and productivity of 1243 kg/ha (1). The major pearl millet growing states are Rajasthan, Maharashtra, Gujarat, Uttar Pradesh and Haryana which account for more than 90% of pearl millet acreage in the country. Pearl millet is cultivated in different agro ecosystems and the grain yield is influenced by various biotic and abiotic factors. Among the biotic factors, arthropods constitute a major constraint to increase the pearl millet production. About 26 insect species have been reported to damage pearl millet in different agro- ecosystem (2). About 23.3 to 36.5 per cent grain losses by shoot fly, *Atherigona approximate* Malloch (3). Small seedlings may be killed by larvae, resulting in stand loss. Larger seedlings continue to produce tillers and form tufts. These seldom grow taller than 30 cm and produce no panicles (Young and Teetes 1977). The fly also causes damage to ear heads in later stages of the crop & the ear head appears like cat's tail. Only systemic insecticides provide effective shoot fly control (4). However, this is not a viable option in resource-poor and dry land farming systems. Use of resistant varieties is a way of lowering the cost of pest protection as part of Integrated Pest Management in pearl millet. Thus, the present studies were made to evaluate pearl millet varieties for resistance against shoot fly.

The experiment was conducted during *kharif* 2018 at Instructional Farm, College of Agriculture, JAU, Junagadh. A total of 10 pearl millet hybrids were tested against shoot fly, *Atherigona approximate* in pearl millet crop. Each variety was planted in one row of 5 m length, with a spacing of 50 x 10 cm with four replication. Maintenance of experiment was routine as per the package of practices for pearl millet crop except for elimination of plant protection measures. At vegetative stages, observation was recorded on 5 plants of each plot by counting the dead heart. Thus shoot fly dead heart percentage were worked out. At ear head stage numbers of ear heads sowing empty/white ear head damage were recorded separately and thus percentage ear head damage was worked out from ear heads of 5 plants of each plot.

At vegetative stage, mean per cent plant infestation due to shoot fly ranged from 0.0% to 8.12%. The minimum infestation was recorded on GHB-744 and GHB-1231 (0.0%) and maximum infestation was observed on GHB-558 (8.12%). On the basis of per cent infestation, only two hybrids, GHB-744 and GHB-1231 were found free from damage that is resistant against shoot fly. Four hybrids (GHB-732, GHB- 1231, GHB-905, MSH-346 and 86M64) were found tolerant. Four hybrids (MSH-339, MH-2024, GHB-538 and GHB-558) were found susceptible to this pest. At ear head stage, mean shoot fly infestation varied from 0.0% to 7.54%. The least infestation was recorded on GHB-1231 (0.0%) and maximum infestation was observed on MSH-339 (7.54%). On the basis of per cent infestation, only one hybrid, GHB-1231 was found free from damage that is resistant against shoot fly. Five hybrids (GHB-905, GHB-732, GHB-538, GHB-744 and GHB-558) were found tolerant. Four hybrids (86M64, MSH-346, MH-2024 and MSH-339) were found susceptible to this pest.

Table-1 : Incidence of shoot fly in different pearl millet hybrids during Kharif-2018.

S. No.	Name of variety	Shoot fly incidence (%)	
		At vegetative stage	At ear head stage
1.	GHB-558	8.12	4.02
2.	GHB-538	7.11	2.57
3.	GHB-732	2.36	1.34
4.	GHB-744	0.0	3.27
5.	GHB-905	3.06	1.38
6.	GHB-1231	0.0	0.0
7.	MSH-339	5.18	7.65
8.	MSH-346	3.63	6.42
9.	86M64	4.20	5.83
10.	MH-2024	6.20	7.54
	SEm +	0.25	0.25
	CD at 5%	0.73	0.74
	CV %	12.80	12.84

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