Madras Agric. J. 77 (7 & 8): 278-280 July-August, 1990
https://doi.org/10.29321/MAJ.10.A01950

EFFECT OF SEED DRESSING FUNGICIDES ON THE STORAGE AND VIABILITY OF SORGHUM SEEDS

S. ENAYATHULLAH SHAH[1] AND V. MARIAPPAN[2]

ABSTRACT

The new seed dressing fungicides Panoctine and Panoram were compared with other commonly used fungicides for their effect on sorghum seed viability during storage. Thiram 0.2 per cent, Vitavax 0.2 per cent, Panoram 0.4 per cent and Panoctine 0.4 per cent were found to keep the sorghum seeds viable to nine months of storage.

KEY WORDS:Seed dressing Fungicides, storage, viability, Sorghum seed

Khan *et al.* (1971) observed that sorghum seeds treated with Thiram and ceresan showed the highest germination after nine months of open storage in the Laboratory. Sivaprakasam *et al.* (1976) reported that TMTD, Benlate, Vitavax and Captan all at 0.2 per cent were significantly superior to control in terms of seed viability throughout the period of eight months of storage in gunny bags. Venkata Rao *et al.* (1970) conducted storage studies in sorghum and observed significantly superior seed germination in Thiram 0.1 per cent treated seeds when compared to Ceresan dry 0.1 per cent and Agrosan G.N. 0.1 per cent.They also observed that the treated seeds stored in alkathene lined gunny bags have shown higher seedling vigour than other types of storage containers.

A study with new seed dressing fungicides Panoctine and Panoram was conducted and the results presented below.

MATERIALS AND METHODS

Healthy sorghum seeds of Co 19 variety were treated with fungicides, Thiram 0.2 per cent, Vitavax 0.2 per cent, Captan 0.2 per cent, wettable sulphur 0.4 per cent, Panoctine, (guanidated 9-aza-1 17-diaminohyptodecane acetate salt), 0.2 per cent and Panoctine 0.4 per cent, Panoram (2-methyl-furan-3-carboxanilide) 0.2 per cent and Panoram 0.4 per cent and stored in polythene bags for 9 months. A control was kept without treating the seeds with fungicides.

The viability of the treated and untreated seeds were treated at 3 months interval upto 9 months. Totally 300 seeds were taken for each treatment and 100 seeds were planted on moist blotters in each sterilised 30 cm petri dishes. Observations on the seed germination was made after 8 days of incubation at room temperature (28± 2°C).

1. Assistant Professor (Plant Pathology), sugarcane Research station, Melalathur.

RESULTS AND DISCUSSION

TABLE 1.
Effect of Seed Dressing Fungicides on Viability of Sorghum Seeds during storage.

Treatment No.	Fungicides	Formulation	Concentration (%)	Seed viability * (%) after 3 months	after 6 months	after 9 months
1.	Thiram	75% WP	0.2	93.00	88.66	73.66
2.	Vitavax	75% WP	0.2	89.66	85.00	69.66
3.	Captan	50% WP	0.2	85.66	70.33	58.00
4.	Wettable sulphur	80% WP	0.4	85.00	72.33	52.66
5	Panoctine	30% W/V Acqueous liquid	0.2	86.33	71.33	62.66
6.	Panoctine	30% W/V Acqueous liquid	0.4	92.00	82.00	66.00
7.	Panoram	40% Dust	0.2	85.33	72.66	55.00
8.	Panoram	40% Dust	0.4	88.66	81.66	67.00
9.	Control	-	-	81.66	69.00	45.00
	SE			N.S	4.03	3.42
	CD			-	8.55	7.25

* Mean of three replications.

The effect of seed dressing fungicides on the sorghum and viability during storage is given in the Table 1. There was no statistically significant variation in seed viability after 3 months of storage. Among the treatments Vitavax 0.2 per cent maintained high degree of seed viability (93.00 per cent) followed by Panoctine 0.4 per cent (92.00 per cent), Vitavax 0.2 per cent (89.66 per cent) and Panoram 0.2 per cent (88.66 per cent).

There was statistically significant variation in seed viability after 6 months and 9 months of storage of sorghum seeds. Six months after storage Thiram 0.2 per cent recorded maximum of 88.66 per cent seed viability; this was on par with Vitavax 0.2 per cent, Panoctine 0.4 per cent and Panoram 0.4 per cent but statistically superior to all other treatments. Nine months after storage Thiram 0.2 per cent continued to maintain high seed viability (73.66 per cent). This was on par with Vitavax 0.2 per cent (69.66 per cent), Panoram 0.4 per cent (67.00 per cent) and Panoctine 0.4 per cent (66.00 per cent) and superior to all other treatments. Control recorded only 45.00 per cent viability.

Contrary to the report that treated seeds loose viability in storage (Sahadevan, 1953), sorghum seeds treated with Thiram, Ceresan dry and Agrosan GN maintained a higher germination during storage than the untreated seeds (Venkata Rao *et al.* 1970).

Sivaprakasam *et al.* (1976) observed that sorghum seeds treated with TMTD (Thiram), Benlate and Vitavax gave significantly better germination than that of seeds treated with Captan and in preserving viability of sorghum seeds upto 8 months of storage. This result is in conformity with the present findings.

In the present study, Thiram 0.2 per cent, Vitavax 0.2 per cent, Panoctine

0.4 per cent, Panoram 0.4 per cent significantly improved the seed viability over control through out the 9 months of storage.

REFERENCES

KHAN, M.A.Q., CHANDOLA, R.P., GUPTA, S.G. and TYAGI, P.G. 1971. Effect pf fungicidal dressing on vaibility of sorghum (**Soghum vulgare** Pers.) seeds. **Rajasthan J. Agric. Sci., 2**:138- 142.

SAHADEVAN, P.C.1953. Viability of rice seeds in storage. **Madras Agric. J. 40**: 133-143

SIVAPRAKASAM, K., PILLIARASWAMY, JAGANATHAN, R. ROBINSON, L. and ANAVARADHAN, L. 1976. preserving viability of sorghum seeds with fungicides. **Madras Agric J., 63**: 188-189.

VENKATA RAO, A., MUTHUSWAMY, S. and GOVINDASWAMY, C.V. 1970. Effect of various types of storage of treated seeds on viability and seelding vigour. **Madras Agric. J., 57**: 472-474.

Madras Agric. J. 77 (7 &8): 280-284 July-August, 1990

SEASONAL INFLUENCE AND POPULATION DYNAMCS OF GREEN LEAFHOPPER ON RICE

S. VENNILA[1] and P.C. SUNDARA BABU[2]

ABSTRACT

Seasonal trends of the green leafhopper (GLH) species studied by monitoring the pest through light trap at Coimbatore and the influence of weather factors on the population dynamics showed the peak occurrence of GLH during November followed by December. **Nephotettix virescens** (Distant) dominated over **N. nigropictus** (Stal.) throughout the year. Corresponding week's weather factors, especially the total rainfall individually influenced significantly the population of **N. virescens** and **N. nigropictus** individually as well as the total population of both the species. Weather factors that prevailed a fortnight prior to catch (the developmental period) influenced N. nigropictus alone. Corresponding week's weather factors in particular, the total rainfall influenced the population of **Nephotettix** spp. during Kar season. The total weather factors that existed a fortnight prior to catch influenced the population during late samba and navaral seasons. In all the seasons none of the individual weather factors that existed during the developmental period influenced the population.

KEY WORDS: GREEN LEAF HOPPER, RICE, SEASON, POPULATION.

Among the leafhoppers infesting the rice, two species of green leafhopper, viz., *Nephotettix virescens* (Distant) and *N.nigropictus* (Stal.) occupy top position in abundance, wide distribution and the damage caused both by direct feeding and through transmission of plant diseases. In this study, seasonal population trends of the hopper species were obtained by the use of light traps and the influence of weather factors on the population was worked out.

MATERIALS AND METHODS

The GLH population was monitored using a modified Robinson light trap, with a light source of 125 watt mercury vapour lamp stationed at Paddy Breeding Station, Tamil Nadu Agricultural University, Coimbatore, for a period of twelve months from August 1985 to July 1986. The light trap was operated for 12 hr from 6 pm to 6 am and daily catch as recorded in the

1. Clare Hall, Herschel Road, Cambridge CBC 9AL, United Kingdom
2. Professor of Agrl. Entomology, Agricultural college and Research Institute Coimbatore 641003.

* Part of M.SC. (Ag.) thesis