

# Effect of Fungicides on Fungal Infection, Germination and Vigour Index in Groundnut

K.A. ANBHULE AND B.M. KAREPPA

International Journal of Plant Protection, Vol. 2 No. 2 : 291-292 (October, 2009 to March, 2010)

See end of the article for authors' affiliations

Correspondence to :

**B.M. KAREPPA**

Department of  
Biotechnology, D.S.M.  
College, PARBHANI  
(M.S.) INDIA

Groundnut (*Arachis hypogaea* L.) is a major oilseed crop. Efficacy of fungicides against seed borne pathogens, seed germination and vigour index of groundnut seeds of variety TAG-24 was tested. Seed treatment at 0.50 to 2.0% fungicide, controlled seed borne fungi effectively and increased seed germination and vigour.

Groundnut seeds are usually damaged by different seed borne mycoflora *i.e.* by *Aspergillus flavus* and *Aspergillus niger*. These two predominant fungi cause concealed damage to seeds under storage and seed rot. It was reported that these fungi cause seedling disease namely, aflarot by *Aspergillus flavus* (Gupta and Chohan, 1969) and collar rot by *Aspergillus niger* (Chohan, 1965), there by reducing the germination. Therefore, the effect of seed treatment with different fungicides was studied with TAG-24 variety of groundnut.

Various samples of groundnut seeds were collected from Marathwada Agriculture University Parbhani and oil seed research center Latur. Seed mycoflora of the TAG-24 was studied by blotter paper method (Neerguard, 1977). Variation in seed mycoflora was observed. The different seed borne fungi were isolated as *Aspergillus niger*, *Aspergillus flavus*, *Rhizoctonia* sp., *Curvularia* sp., *Cladosporium* sp., *Rhizopus stolonifer*, *Fusarium oxysperium* etc. The seeds were treated with fungicides *viz.* Captafol, Carbendazim, Mancozeb, Topsin and Vitavax from 0.25 to 2.00 % concentration. The effect of seed treatment on seed mycoflora was studied as earlier and per cent germination was recorded and vigour index was calculated by multiplying mean seedling length with germination percentage and per cent infection as per the method given by Abdul Baki and Anderson (1973).

Groundnut seeds treated with Carbendazim and Vitavax recorded

maximum percentage of germination (90 and 88%) *viz.* followed by Mancozeb (85%), Topsin (89%) and Captafol (85%), respectively. Carbendazim and Vitavax acted as a protective fungicides against seed deterioration. Seeds treated with vitarax and carbendazium at 1.5 % completely eliminated fungal infection as was indicated by the value of per cent infection.

**Table 1 : Effect of fungicides on groundnut (Variety- TAG-24)**

Fungicides (%)	Infection (%)	Germination (%)	Vigour index
Captafol -0.50	34.00	51.00	203.00
	1.00	24.00	60.00
	1.50	12.00	73.00
	2.00	00.00	85.00
	C.D.=0.90	1.35	12.90
Carbendazim 0.50	34.00	56.00	224.00
	1.00	20.00	70.00
	1.50	00.00	90.00
	2.00	-	-
	C.D.=0.82	2.03	11.50
Mancozeb -0.50	30.00	56.00	252.00
	1.00	18.00	68.00
	1.50	04.00	82.00
	2.00	00.00	85.00
	C.D.=1.49	2.36	16.93
Topsim -0.50	28.00	56.00	224.00
	1.00	17.00	70.00
	1.50	04.00	83.00
	2.00	00.00	89.00
	C.D.=1.16	2.03	13.92
Vitavax - 0.50	32.00	56.00	212.00
	1.00	20.00	70.00
	1.50	00.00	88.00
	2.00	-	-
	C.D.=1.27	1.97	10.75
Control 0.00	40.00	45.00	135.00

(C.D. at P=0.05)

Accepted :  
June, 2009

---

Authors' affiliations:

**K.A. ANBHULE**, Department of Botany, Badrinarayan Barwale Mahavidyalaya, JALNA (M.S.) INDIA

---

## REFERENCES

**Abdul, Baki, A.A. and Anderson, J.D.** (1973). Vigour determination in Soybean seed multiple Criteria. *Crop Sci.*, **13** : 630 .

**Chohan, J.S.** (1965). Collar rot of groundnut caused by *Aspergillus niger* Van Teighen and *Aspergillus pulvarulentus* (Me Alpine) Thom. Punjab J. Res. Punjab agric. University, **2** (1): 225-232 .

**Neerguard, P.** (1977). Seed Pathology, Vol. I and II, Halsted Press, a division of John Wiley and Sons, INS, New York.

**Gupta, V.K. and Chohan, J.S.** (1969). Losses and nature of damage caused by seed rot fungi in stored groundnuts in Punjab. *Indian Phytopath.*, **23** : 606-609 .

\*\*\*\*\*