

Research Paper :

Effect of Seed Treatment with Imidacloprid 600 FS on Seed Quality During Storage in Sunflower

ASHOK S. SAJJAN, R.A. BALIKAI, R.B. JOLLI AND A.K. GUGGARI

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See end of the article for authors' affiliations

Correspondence to :
ASHOK S. SAJJAN
College of Agriculture
and Regional
Agricultural Research
Station, BIJAPUR
(KARNATAKA)
INDIA

SUMMARY

A laboratory experiment was conducted to know the effect of seed treatment with imidacloprid 600 FS on the quality of sunflower seeds in storage during 2006-07. Sunflower variety NSP 92-1 E which has been recommended for this region was used for the study. There were six treatments replicated four times in completely randomized block design. The treatments consisted of five dosages of imidacloprid 600 FS @ 2.5, 5.0, 7.5, 10.0 and 12.0 ml/kg of seeds and an untreated check. The seeds treated with respective dosages of insecticides were packed in separate polythene bags of more than 700 gauges and kept under laboratory conditions. The observations on seed germination, seedling length and vigour index were recorded at 15 days after storage and subsequently at monthly interval up to nine months. The results revealed that sunflower seeds treated with imidacloprid 600 FS @ 10 ml/kg seeds could be stored in polythene bag of more than 700 gauges up to eight months without significant reduction in seed quality.

Key words :

Seed treatment,
imidacloprid 600
FS, Storage,
Viability of seeds,
Sunflower

Sunflower (*Helianthus annuus* L.) is one of the important oil seed crops grown in arid and semiarid tropics. However, the yield levels have been low due to its cultivation under resource poor management. Quite often quality seeds and insect pests are the limiting factors for higher yields. Among the insect pests, sucking pests attack the crop in the early growth period and suck the sap resulting in reduced vigour. In addition, *Thrips palmi* (Karny) is known to transmit sunflower necrosis which causes greater loss (Satish *et al.*, 2004). Therefore, the seeds are treated with insecticides before they are packed and stored till marketing. Among the seed treatment, insecticides, imidacloprid 600 FS is one, the efficacy of which has been proven beyond doubt against insect pests in many crops (Joginder Singh *et al.*, 1996; Praveen, 2005; and Lal and Sinha, 2005). Similarly, imidacloprid 600 FS @ 12 ml/kg seeds was effective against termites and foliage pests in pearl millet (Noor, 2003); against wheat pests (Deol and Singh, 2002) and against maize pests (Sharma *et al.*, 2003). Further, according to Singh (2003) seed treatment with imidacloprid 70 WS or 600 FS at 5 and 6 g, respectively was effective against leafhoppers in sunflower. Even though the seed treatment is much safer, convenient, eco-friendly and easily practicable one, much is not known about the viability treated seeds during

its storage. Hence the present studies were under taken to know the influence of various dosages of imidacloprid 600 FS on the quality of seeds during storage.

MATERIALS AND METHODS

A laboratory experiment was conducted in the Department of Seed Science and Technology at UAS, Bijapur Campus during 2006-07 to know the effect of seed treatment with imidacloprid 600 FS on the quality of sunflower seeds in storage. Sunflower variety NSP 92-1 E which has been recommended for this region was used for the study. There were six treatments replicated four times in completely Randomized Block Design. The treatments consisted of five dosages of imidacloprid 600 FS @ 2.5, 5.0, 7.5, 10.0 and 12.0 ml/kg of seeds and an untreated check. The seeds treated with respective dosages of insecticides were packed in separate polythene bags of more than 700 gauges and kept under laboratory conditions. The observations on seed germination, seedling length and vigour index were recorded at 15 days after storage and subsequently at monthly interval up to nine months. The germination was tested using Cabinet Germinator as per ISTA rules (Anonymous, 1996) by adapting rolled towel method. The data on germination per cent was

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