Effect of the different storage containers on bruchids (*Caryedon Serratus* Olivier) infestation in groundnut (*Arachis hypogae* L.) during storage.

[1]Gohil, R. M., [*2]Chormule S. R. and [3]Patel, M. B.

[1&3]Department of Seed Science and Technology, Junagadh Agricultural University, Junagadh 362001, (Gujarat) India

*Department of Genetics and Plant Breeding, School of Agriculture,

Lovely Professional University, Phagwada, Jalandhar–144411 (Punjab) India

ABSTRACT

Present research work conducted on to know effect of different seed containers on bruchids infestation in stored groundnut kernels from 19th June, 2015 to 22th February, 2016 at Seed technology laboratory of JAU, Junagadh Agricultural University, Junagadh. Fresh harvested seeds of cv. GG 20 were kept in different seed containers for 250 days and observed during two storage periods (150 and 250 days of storage). Result revealed that kernels stored in polyvinyl bag packing with vaccum bag recorded significantly the lowest bruchids infestation over other seed containers.

Keyword:- groundnut, bruchid, containers, storage

Introduction

Among the all oilseeds crops groundnut is very important and valuable oilseeds crop of glob. Botanically ground is annual herb producing pods in soil that's why it is referred as *hypogae* and belongs to *leguminaceae* family so that it is termed as *Arachis*. It is found in botanically variable types *viz.*, bunchy, spreading and semi spreading. Bunchy type varieties are short duration varieties, while spreading are long duration. Now days farmers are more diverted towards the cultivation of bunchy type of groundnut than spreading cultivars of groundnut. Groundnut is rich source of vegetable oil near about 40-48 per cent oil content recorded in different varieties. Gujarat is the top most state producing groundnut. Tamilnadu after Rajasthan, Maharashtra and Karnataka are the subsequent leading states producing groundnut. Total estimated production of groundnut in India was 7.47 million tonnes in 2017. India's total groundnut production was estimated at 7.47 million tonnes in 2017. Saurashtra is the major groundnut growing region among the all region of groundnut (Anonymous, 2017).

Bruchid bore the seed and feed inside the all storage tissue as well as embryo of seed. Bruchid infested seeds unable to germinate and it leads to production of heat and other fungal infection in stored

seeds. Alabi *et al*., 2003 reported that losses from bruchid (*Caryedon serratus*) in groundnut start from 20 to 50 per cent but if fails to control it it reaching at 100 per ccent loss.

Considering all these facts in view, the present an experiment was conducted for concluding effect of different seed storage periods on bruchids (*Caryedon Serratus*) infestation in stored groundnut kernals.

Materials and methods-

Experiment was conducted in laboratory condition in seed technology laboratory, JAU, Junagadh. Fresh harvested seeds of GG 20 having initial moisture content groundnut 6 to 7 percent kept in different seed containers from 19th June, 2015 to 22th February, 2016. Each seed container filled with 500 gm of seeds and stored under ambient condition of region. Kernels observed in two storage interval 150 and 250 days after storage and observation where recorded for per cent bruchids infestation visual basis. Following seed storage containers were used for groundnut kernel storage.

Table 1. : Name of seed storage containers used in the study.

Sr. No.	Symbol	Seed storage container
1.	C_1	Moisture vapour proof HDPE
2.	C_2	Polyvinyl bags (700 gauge)
3.	C_3	Aluminium foil laminated bag
4.	C_4	Galvanized iron bin
5.	C_5	Polyvinyl bag packing with vacuum
6.	C_6	Cloth bag (Control)

Result and Discussion

The kernels stored in polyvinyl bag packing with vaccum (C_5) and Galvanized iron bin (C_4) had exerted the lowest bruchid infestation (5.77% and 5.66 %) after 150 and 250 days of storage periods, respectively, while the kernels stored in cloth bag (C_6) recorded significantly the highest bruchid infestation (13.32% and 16.91%) after 150 and 250 days of storage periods, respectively.

The bruchid infestation was significantly influenced by the seed containers throughout the storage periods (Table 2). Among different seed containers, cloth bag had retained top rank by recording the maximum bruchid infestation throughout the storage periods and polyvinyl bag packing with vaccum (C_5) had retained top rank by recording the minimum bruchid infestation throughout the storage periods. The lowest bruchid infestation in polyvinyl bag packing with vaccum may be due to unavailability of oxygen for respiration of bruchids caused inhibition of oviposition by bruchids. Usha *et al*. (1990) revealed that seeds stored in polythene bags followed by galvanized iron drum found to be better to prevent bruchid infestation in cowpea seeds. Saini *et al.*, 2015 reported that lesser availability of oxygen due to closed and impervious seed packaging material polyvinyl bag recorded lest percent of bruchids infestation in stored groundnut seeds.

Table 2.: Effect of different seed containers on per cent bruchids infestation in stored groundnut kernels under ambient condition.

Seed containers	Storage period	
	150	**250**
C_1	6.14	6.02
C_2	5.72	14.05
C_3	6.38	12.94
C_4	5.77	5.66
C_5	5.70	10.57
C_6	13.32	16.91
S.Em±	0.12	0.13
C.D @ 5%	0.33	0.35

Conclusion

Storing groundnut kernels in air tight container gives better result for managing bruchids infestation over chemical seed treatments. Use of polyvinyl bag having 700 gauge thicknesses is useful for storing ground upto 250 days.

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