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Screening of Groundnut Genotypes against Pod Borers in *kharif* Season

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ABSTRACT: At the Oilseed Research Station in Latur, a screening of 86 groundnut (*Arachis hypogaea* L.) genotypes was conducted during the 2021-2022 *kharif* season to assess their resistance against pod borers, namely Earwig, Wireworms and Subterranean ants. The pod damage due to earwig infestation ranged from 0 to 13.88%. For earwig infestation Out of eighty six genotypes screened for earwig pod damage. Both the genotypes HOVTSB-I 2021-19 (0.00%) and IVK-I 2021-9 (0.00%) recorded 0 per cent pod damage. However, ISK-I 2021-4 (13.88%), ISK-I 2021-3 (12.84%), AVK-2021-3(12.24%), AVK-2021-2 (11.64%) and check LGN-1(10.99%) recorded in the scale 3 having pod damage between 11 to 20 per cent. Wireworm Pod damage varied 0% to 18.07%. Genotypes HOVTSB-I 2021-19 and LSVT-I 2021-2showed no pod damage (0.00%). While other like AVK-2021-3(11.20%), AVK-2021-5(11.47%), ISK-I 2021-4(15.68%), AVK-2021-2(18.07%) and LGN-1(11.64%) recorded in the scale 3 having 11 to 20 per cent pod damage. Subterranean ants led to pod damage varying from 0 to 12.26 per cent. The genotype HOVTSB-I 2021-19 (0.00%) recorded 0 per cent pod damage. whereas, highest pod damage genotypes ISK-I 2021-26 (12.26%), ISK-2021-10 (11.17%), AVK-2021-3(10.91%), AVK-2021-2 (10.99%) and LGN-1 (10.91%) recorded in the scale 3 having 11 to 20 per cent pod damage. This study aimed to evaluate groundnut genotypes' susceptibility to these pests, providing insights into potential resistance levels against earwigs, wireworms, and subterranean ants.

Keywords: Earwig, Wireworm, Subterranean ants, Genotypes, Pod damage.

INTRODUCTION

Groundnut *(Arachis hypogaea* L.) an important oilseed and ancillary food crop of the world belongs to genus Arachis tribe Aechynomenae, family Fabaceae, is a tetra foliate legume crop with yellow sessile flowers and subterranean pods. Groundnut is native to South America. In India, groundnut is mostly grown in five states *viz*., Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra. Groundnut is actually a stifling plant and requires an extended and hot growing period with optimum temperature (25 to 30ºC) and optimum rainfall (500 mm) (Weiss, 2000). It is the most important commercial crop mostly grown in semi-arid tropical regions like India. Globally groundnut covers 316 lakh hectares area with the production of 536 lakh tonnes with the productivity of 1699 Kg ha^{-1} (FAOSTAT, 2021). India covers 61 lakh hectares area with the production of 99 lakh tonnes with the productivity 1631 Kg ha^{-1} (FAOSTAT, 2021). In Maharashtra, it is cultivated over an area of 309 thousand hectares with production of 407 thousand tonnes and with average productivity of 1318 kg/ha during *kharif* and *rabi* season, respectively. In Latur district it is cultivated over an area of 26 hectares with production of 18 tonnes and with average productivity of 697 kg/ha during *Kharif* season. (Anonymous, 2021). Several insect pests attack the groundnut crop that may cause moderate to severe damage (Javed *et al*., 2014). The groundnut pod borers contain a wide group of insects which are associated with different class of insecta. They are mainly the earwigs, wireworms, false wireworms, termites, white grubs, and subterranean ants etc. Earwig feeding on groundnut kernal by boring into the pods (Cherian and Basheer 1940). The larve of wireworms and false wireworms feed on groundnut roots. Subterranean ant also damage to kernal. White grubs damage groundnut roots and pods, thereby lowering the quality and quantity of harvested kernels (Wightman and Wightman 1994). Termites *O. obesus* (Rambur) are social insects, attack on the tap root, feed out all contents ultimately replacing it with mud (Rawat *et al*., 1970).

The identification of pod borer resistant high yielding varieties through screening can provide a convenient way for farmers to grow pod borer resistant groundnut cultivars for better yield. This ultimately will help to reduce the excessive use of insecticides on the crop leading to reduce the hazards to human and animal health and environmental pollution around the world.

MATERIAL AND METHODS

The present investigations were conducted at the Department of Agricultural Entomology, Oilseeds Research Station, Latur (MS)-India during *kharif*, 2021-2022 in randomized block design with 86 genotypes along with one check LGN-1 with two replications.

Each genotype was grown in individual gross plot of size 0.30 × 5.0 sq. m. maintaining net plot of 0.30 × 4.8 sq. m. with LGN-1 as susceptible check, first and after 12th entry in 5 m row length. The spacing between row to row and plant to plant was kept 30 and 10 cm, respectively. The genotypes were sown on 8th July 2021. Observations of pod borers damage were recorded on different genotypes of groundnut at the time of harvesting of the crop. The data was converted to per cent damage by using this formula (suggested by Naresh & Singh (1984).

$$\text{Per cent damage} = \frac{\text{Total No. of pods infested by pod borers}}{\text{Total Number of pods in each genotype}} \times 100$$

RESULTS AND DISCUSSION

Eighty six groundnut genotypes, including a check, underwent screening for resistance against earwig, wireworms and subterranean ants in a field trail conducted during *kharif* 2021-2022. The resulting data depicting percentage of pod damage caused by earwig, wireworm, subterranean ants is presented in the Table 1.

Table 1: Percentage of pod infestation by pod borers across different groundnut genotypes.

Sr. No.	Genotypes	Earwig	Wireworm	Sub. Ants
1.	HOVTVG-I 2021-1	2.61 (9.30)	5.75(13.81)	5.85(13.81)
2.	HOVTVG-I 2021-2	5.79 (13.88)	6.78(15.07)	7.45(15.83)
3.	HOVTVG-I 2021-3	2.01 (7.86)	2.02(8.10)	2.73(9.23)
4.	HOVTVG-I 2021-4	2.84 (9.65)	2.25(8.58)	2.35(8.44)
5.	HOVTVG-I 2021-5	3.91 (11.38)	7.66(15.74)	6.10(14.28)
6.	HOVTVG-I 2021-7	3.27 (7.40)	1.07(4.20)	1.57(5.10)
7.	HOVTVG-I 2021-8	3.26 (10.40)	2.51(9.11)	3.82(11.26)
8.	HOVTVG-I 2021-9	3.50 (10.77)	5.00(12.92)	4.40(12.09)
9.	HOVTVG-I 2021-10	4.66 (12.44)	4.24(11.81)	5.51(13.52)
10.	HOVTSB-I 2021-1	3.72 (11.12)	3.34(10.31)	3.02(9.77)
11.	HOVTSB-I 2021-2	3.53 (10.79)	2.93(9.82)	2.52(9.09)
12.	HOVTSB-I 2021-3	2.43 (8.73)	2.73(9.32)	2.66(9.27)
13.	HOVTSB-I 2021-4	4.73 (12.50)	4.20(11.83)	3.91(11.35)
14.	HOVTSB-I 2021-5	4.04 (11.57)	4.60(12.38)	3.26(10.33)
15.	HOVTSB-I 2021-7	3.75 (11.15)	4.83(12.68)	3.75(11.15)
16.	HOVTSB-I 2021-8	3.56 (10.82)	4.75(12.58)	3.30(10.43)
17.	HOVTSB-I 2021-9	5.20 (13.16)	4.15 (11.74)	5.23(13.12)
18.	HOVTSB-I 2021-10	3.90 (11.17)	3.29(10.31)	3.16(9.91)
19.	HOVTSB-I 2021-11	2.68 (9.41)	2.90(9.58)	2.49(9.04)
20.	HOVTSB-I 2021-13	3.57 (10.83)	4.31(11.95)	3.56(10.54)
21.	HOVTSB-I 2021-14	3.26 (10.36)	3.98(11.49)	3.91(11.35)
22.	HOVTSB-I 2021-15	2.47 (9.01)	3.34(10.49)	2.57(9.17)
23.	HOVTSB-I 2021-16	3.46 (10.70)	3.66(10.89)	3.06(9.91)
24.	HOVTSB-I 2021-17	3.45 (10.70)	3.41(10.57)	3.21(10.30)
25.	HOVTSB-I 2021-18	4.85(12.72)	4.89(12.75)	4.55(12.31)
26.	HOVTSB-I 2021-19	0.00(0.00)	0.00(0.00)	0.00(0.00)
27.	AHOVTSB2021-1	3.41(10.63)	3.86(11.21)	3.27(10.19)
28.	AHOVTSB2021-2	3.88(11.34)	3.96(11.38)	5.07(12.92)
29.	AHOVTSB2021-3	2.24(8.54)	2.96(9.81)	2.44(8.98)
30.	AHOVTSB2021-4	2.09(8.24)	2.24(8.39)	1.71(7.34)
31.	AHOVTSB2021-5	2.47(8.97)	2.23(8.50)	2.24(8.45)
32.	AHOVTSB2021-6	2.87(9.74)	2.92(9.78)	2.84(9.69)
33.	AHOVTSB2021-7	4.53(12.20)	3.34(10.43)	3.74(11.13)
34.	LSVT-I 2021-1	7.94(16.28)	6.70(14.93)	7.61(16.00)
35.	LSVT-I 2021-2	0.91(3.87)	0.00(0.00)	1.37(4.75)
36.	LSVT-I 2021-3	5.70(13.80)	4.06(11.62)	6.79(15.08)
37.	LSVT-I 2021-4	6.75(15.03)	7.49(15.84)	9.63(18.03)
38.	LSVT-I 2021-5	4.64(12.43)	5.28(13.28)	5.07(12.89)
39.	LSVT-I 2021-6	7.31(14.98)	6.44(14.69)	8.96(17.34)
40.	LSVT-I 2021-7	2.24(8.61)	0.40(2.54)	1.85(7.79)
41.	LSVT-I 2021-8	4.58(12.19)	4.68(12.49)	4.50(12.19)
42.	LSVT-I 2021-9	5.01(12.83)	5.73(13.80)	5.36(13.23)
43.	AVK-2021-1	5.65(13.72)	7.69(16.07)	6.93(15.24)
44.	AVK-2021-2	11.64(19.91)	18.07(25.15)	10.99(19.34)
45.	AVK-2021-3	12.24(20.46)	11.20(19.31)	10.91(19.23)
46.	AVK-2021-4	4.78(12.62)	5.83(13.97)	3.73(11.12)
47.	AVK-2021-5	8.60(17.00)	11.47(19.39)	6.32(14.55)
48.	IVK-I 2021-1	3.33(10.37)	3.06(10.07)	3.71(11.09)
49.	IVK-I 2021-2	4.24(11.83)	3.84(11.24)	5.24(13.21)
50.	IVK-I 2021-4	4.52(12.27)	4.64(12.40)	3.57(10.85)
51.	IVK-I 2021-5	5.66(13.73)	5.17(13.05)	6.26(14.37)

52.	IVK-I 2021-6	1.38(6.37)	1.65(7.34)	0.89(5.40)
53.	IVK-I 2021-7	4.02(11.56)	4.57(12.23)	5.95(14.01)
54.	IVK-I 2021-9	0.00(0.00)	2.00(7.58)	0.56(3.02)
55.	IVK-I 2021-10	5.72(13.80)	4.84(12.68)	5.82(13.62)
56.	IVK-I 2021-11	4.76(12.53)	4.80(12.63)	5.98(13.92)
57.	IVK-I 2021-12	5.77(13.82)	5.73(13.83)	6.68(14.97)
58.	IVK-I 2021-13	0.51(2.89)	5.00(9.21)	5.39(9.57)
59.	IVK-I 2021-14	2.87(9.70)	4.67(11.98)	4.46(11.99)
60.	IVK-I 2021-15	4.03(11.47)	7.11(15.02)	6.17(13.69)
61.	IVK-I 2021-16	2.29(8.70)	4.50(12.22)	3.32(10.31)
62.	IVK-I 2021-17	6.35(14.53)	4.81(12.63)	5.69(13.65)
63.	IVK-I 2021-18	4.58(12.24)	5.00(12.73)	5.50(13.54)
64.	ISK-I-2021-1	4.13(11.70)	5.14(13.04)	3.70(11.05)
65.	ISK-I-2021-2	3.28(10.41)	3.44(10.68)	2.74(9.53)
66.	ISK-I-2021-3	12.84(20.85)	7.08(15.29)	5.12(13.02)
67.	ISK-I-2021-4	13.88(21.84)	15.68(23.31)	10.37(18.78)
68.	ISK-I-2021-6	2.96(9.84)	5.47(13.51)	3.89(11.34)
69.	ISK-I-2021-7	3.85(11.24)	4.95(12.81)	4.03(11.48)
70.	ISK-I-2021-8	6.62(14.87)	8.53(16.87)	6.69(14.54)
71.	ISK-I-2021-9	3.19(10.27)	3.45(10.67)	3.20(10.11)
72.	ISK-I-2021-10	6.12(14.00)	6.65(14.36)	11.17(19.35)
73.	ISK-I-2021-11	7.15(15.48)	8.47(16.91)	7.61(15.80)
74.	ISK-I-2021-12	6.07(14.18)	7.32(15.54)	5.40(13.41)
75.	ISK-I-2021-13	3.23(10.35)	3.54(10.78)	3.14(10.10)
76.	ISK-I-2021-14	4.52(12.28)	4.35(11.99)	3.02(9.98)
77.	ISK-I-2021-15	3.73(11.12)	4.95(12.73)	3.24(10.32)
78.	ISK-I-2021-16	4.65(12.43)	4.12(11.61)	2.75(9.30)
79.	ISK-I-2021-18	3.96(11.35)	4.00(11.51)	3.36(10.49)
80.	ISK-I-2021-19	4.88(12.75)	6.68(14.94)	4.30(11.95)
81.	ISK-I-2021-20	3.24(10.37)	3.43(10.63)	3.39(10.60)
82.	ISK-I-2021-21	5.11(13.04)	5.63(13.72)	4.67(12.27)
83.	ISK-I-2021-22	4.01(11.55)	3.94(11.39)	3.01(9.96)
84.	ISK-I-2021-24	3.35(10.44)	2.59(8.88)	2.54(8.95)
85.	ISK-I-2021-26	5.47(12.82)	4.84(12.43)	12.26(20.40)
86.	ISK-I-2021-27	1.01(4.08)	4.93(12.78)	5.62(13.69)
87.	LGN-1(check)	10.99 (19.34)	11.64 (19.91)	10.91(19.23)
	C.D.	**4.55**	**5.19**	**5.49**
	SE(m)	**1.64**	**1.87**	**1.98**
	C.V.	**20.32**	**22.07**	**23.92**

Note: Figure in parenthesis are angular transformed value.

The data obtained and percent pod damages will be worked out, and will be categories as per 1 to 9 scale (Rohilla, 2004) and extent of pod scarification on 1 to 9 scale as mentioned below:

Table 2: Rating scale on the basis of per cent pod damage of pod borers (Rohilla, 2004).

Sr. No.	Index scale	% Pods damaged
1.	1	0
2.	2	1 to 10
3.	3	11 to 20
4.	4	21 to 30
5.	5	31 to 40
6.	6	41 to 50
7.	7	51 to 60
8.	8	61 to 75
9.	9	76 to100

Screening of groundnut genotypes against earwig. The eighty six genotypes along with check of groundnut were also grouped in to scale (1-9) depends on % pod damage.

The data presented in the Table 1 and 3 revealed that the pod damage due to Earwig ranged was between 0 to 13.88 per cent. Out of eighty six genotypes screened for earwig pod damage along with susceptible check. Both the entries HOVTSB-I 2021-19 (0.00%) and IVK-I 2021-9(0.00%) recorded 0 per cent pod damage. However, HOVTVG-I 2021-1 (2.61%), HOVTVG- I 2021-4 (2.84%), HOVTVG-I 2021-3 (2.01%) recorded of scale 2 having pod damage between 1 to 10. Whereas the genotype ISK-I 2021-4 (13.88%), ISK-I 2021-3 (12.84%), AVK-2021-3(12.24%), AVK-2021-2 (11.64%) and check LGN-1(10.99%) recorded in the scale 3 having pod damage between 11 to 20 per cent. Out of eighty six genotypes two genotypes having pod damage 0 per cent, eighty genotypes have pod damage between 1 to 10 per cent and the four genotypes having damage between 11 to 20. The genotypes HOVTSB-I 2021-19 (0.00%) and IVK-I 2021-9 (0.00%) recorded No pod damage and formed promising genotype for earwigs.

Screening of groundnut genotypes against wireworm. The eighty six genotypes along with check of groundnut were also grouped in to scale (1-9) depends on % pod damage. The data presented in the Table 1 and 4 revealed that the pod damage due to wireworms ranged between 0 to 18.07 per cent. Out of

eighty six genotypes screened for wireworm pod damage. Both the entries HOVTSB-I 2021-19 (0.00%) and LSVT-I 2021-2 (0.00%) recorded 0 per cent pod damage. However, genotypes HOVTVG-I 2021-10(4.24%), HOVTSB-I 2021-1(3.34%) recorded of scale 2 having pod damage between 1 to 10 per cent. whereas, genotypes ISK-I 2021-4(15.68%), AVK-2021-3(11.20%), AVK-2021-2(18.07), AVK-2021-5(11.47%) and check LGN-1(11.47%) recorded in the scale 3 having 11 to 20 per cent pod damage. Out of eighty six genotypes two genotypes having pod damage 0 per cent, eighty genotypes have pod damage between 1 to 10 per cent, and the four genotypes having damage between 11 to 20. The genotypes HOVTSB-I 2021-19 and LSVT-I 2021-2 recorded 0 per cent damage and formed promising for wireworms.

Screening of groundnut genotypes against subterranean ants. The eighty six genotypes along with check of groundnut were also grouped in to scale (1-9) depends on % pod damage. The data presented in the table 1 and 5 revealed that the pod damage due to subterranean ants ranged between 0 to 12.26 per cent. Out of eighty six genotypes screened for subterranean ant pod damage. The only one genotype HOVTSB-I 2021-19 recorded 0 per cent pod damage. Also IVK-I-2021-9 & IVK-I 2021-6 recorded very less per cent damage i.e. 0.56 & 0.89 respectively. However, genotypes AHOVTSB2021-2 (5.07%). AHOVTSB2021-3 (2.44%), LSVT-I 2021-1 (7.61%) recorded of scale 2 having pod damage between 1 to 10 per cent. whereas, genotypes ISK-2021-10 (11.17%), AVK-2021-3(10.91%), AVK-2021-2 (10.99%), check LGN-1(10.91%) and highest was recorded in ISK-I-2021-26 i.e. 12.26 per cent recorded in the scale 3 having 11 to 20 per cent pod damage. Out of eighty six genotypes only one genotype having pod damage 0 per cent, eighty one genotypes have pod damage between 1 to 10 per cent, and the four genotypes having damage between 11 to 20. The genotype HOVTSB-I 2021-19 (0.00%) recorded 0 per cent& formed promising for subterranean ants.

Table 3: Grouping of scale depending upon the % pod damage to earwig.

Sr. No	Scale (1-9)	% pod damage	Name of genotypes
1.	**1**	**0**	HOVTSB-I 2021-19, IVK-I 2021-9
2.	**2**	**1 to 10**	HOVTVG-I 2021-1, HOVTVG- I 2021-2, HOVTVG-I 2021-3, HOVTVG-I 2021-4, HOVTVG-I 2021-5, HOVTVG-I 2021-7, HOVTVG-I 2021-8, HOVTVG-I 2021-9, HOVTVG-I 2021-10, HOVTSB-I 2021-1, HOVTSB-I 2021-2, HOVTSB-I 2021-3, HOVTSB-I 2021-4, HOVTSB-I 2021-5, HOVTSB-I 2021-7, HOVTSB-I 2021-8, HOVTSB-I 2021-9, HOVTSB-I 2021-10, HOVTSB-I 2021-11, HOVTSB-I 2021-13, HOVTSB-I 2021-14, HOVTSB-I 2021-15, HOVTSB-I 2021-16, HOVTSB-I 2021-17, HOVTSB-I 2021-18, AHOVTSB2021-1, AHOVTSB2021-2. AHOVTSB2021-3, AHOVTSB2021-4, AHOVTSB2021-5, AHOVTSB2021-6, AHOVTSB2021-7, LSVT-I 2021-1, LSVT-I 2021-2, LSVT-I 2021-3, LSVT-I 2021-4, LSVT-I 2021-5, LSVT-I 2021-6, LSVT-I 2021-7, LSVT-I 2021-8, LSVT-I 2021-9, AVK-2021-1, AVK-2021-4, AVK-2021-5, IVK-I 2021-1, IVK-I 2021-2, IVK-I 2021-4, IVK-I 2021-5, IVK-I 2021-6, IVK-I 2021-7, IVK-I 2021-10, IVK-I 2021-11, IVK-I 2021-12, IVK-I 2021-13, IVK-I 2021-14, IVK-I 2021-15, IVK-I 2021-16, IVK-I 2021-17, IVK-I 2021-18, ISK-I-2021-1, ISK-I-2021-2, ISK-I-2021-6, ISK-I-2021-7, ISK-I-2021-8, ISK-I-2021-9, ISK-I-2021-10, ISK-I-2021-11, ISK-I-2021-12, ISK-I-2021-13, ISK-I-2021-14, ISK-I-2021-15, ISK-I-2021-16, ISK-I-2021-18, ISK-I-2021-19, ISK-I-2021-20, ISK-I-2021-21, ISK-I-2021-22, ISK-I-2021-24, ISK-I-2021-26, ISK-I-2021-27
3.	**3**	**11 to 20**	ISK-I 2021-4, ISK-I 2021-3, AVK-2021-3, AVK-2021-2, LGN-1
4.	**4**	**21 to 30**	-
5.	**5**	**31 to 40**	-
6.	**6**	**41 to 50**	-
7.	**7**	**51 to 60**	-
8.	**8**	**61 to 75**	-
9.	**9**	**76 to 100**	-

Table 4: Grouping of scale depending upon the % pod damage to wireworm.

Sr. No.	Scale (1-9)	% pod damage	Name of genotypes
1.	**1**	**0**	HOVTSB-I 2021-19, LSVT-I 2021-2
2.	**2**	**1 to 10**	HOVTVG-I 2021-1, HOVTVG- I 2021-2, HOVTVG-I 2021-3, HOVTVG-I 2021-4, HOVTVG-I 2021-5, HOVTVG-I 2021-7, HOVTVG-I 2021-8, HOVTVG-I 2021-9, HOVTVG-I 2021-10, HOVTSB-I 2021-1, HOVTSB-I 2021-2, HOVTSB-I 2021-3, HOVTSB-I 2021-4, HOVTSB-I 2021-5, HOVTSB-I 2021-7, HOVTSB-I 2021-8, HOVTSB-I 2021-9, HOVTSB-I 2021-10, HOVTSB-I 2021-11, HOVTSB-I 2021-13, HOVTSB-I 2021-14, HOVTSB-I 2021-15, HOVTSB-I 2021-16, HOVTSB-I 2021-17, HOVTSB-I 2021-18, AHOVTSB2021-1, AHOVTSB2021-2. AHOVTSB2021-3, AHOVTSB2021-4, AHOVTSB2021-5, AHOVTSB2021-6, AHOVTSB2021-7, LSVT-I 2021-1, LSVT-I 2021-3, LSVT-I 2021-4, LSVT-I 2021-5, LSVT-I 2021-6, LSVT-I 2021-7, LSVT-I 2021-8, LSVT-I 2021-9, AVK-2021-1, AVK-2021-4, IVK-I 2021-1, IVK-I 2021-2, IVK-I 2021-4, IVK-I 2021-5, IVK-I 2021-6, IVK-I 2021-7, IVK-I 2021-9, IVK-I 2021-10, IVK-I 2021-11, IVK-I 2021-12, IVK-I 2021-13, IVK-I 2021-14, IVK-I 2021-15, IVK-I 2021-16, IVK-I 2021-17, IVK-I 2021-18, ISK-I-2021-1, ISK-I-2021-2, ISK-I-2021-3, ISK-I-2021-6, ISK-I-2021-7, ISK-I-2021-8, ISK-I-2021-9, ISK-I-2021-10, ISK-I-2021-11, ISK-I-2021-12, ISK-I-2021-13, ISK-I-2021-14, ISK-I-2021-15, ISK-I-2021-16, ISK-I-2021-18, ISK-I-2021-19, ISK-I-2021-20, ISK-I-2021-21, ISK-I-2021-22, ISK-I-2021-24, ISK-I-2021-26, ISK-I-2021-27
3.	**3**	**11 to 20**	ISK-I 2021-4, AVK-2021-3, AVK-2021-2 AVK-2021-5, LGN-1
4.	**4**	**21 to 30**	-
5.	**5**	**31 to 40**	-
6.	**6**	**41 to 50**	-
7.	**7**	**51 to 60**	-
8.	**8**	**61 to 75**	-
9.	**9**	**76 to 100**	-

Table 5: Grouping of scale depending upon the % pod damage to subterranean ants.

Sr. No.	Scale (1-9)	% pod damage	Name of genotypes
1.	**1**	**0**	HOVTSB-I 2021-19
2.	**2**	**1 to 10**	HOVTVG-I 2021-1, HOVTVG- I 2021-2, HOVTVG-I 2021-3, HOVTVG-I 2021-4, HOVTVG-I 2021-5, HOVTVG-I 2021-7, HOVTVG-I 2021-8, HOVTVG-I 2021-9, HOVTVG-I 2021-10, HOVTSB-I 2021-1, HOVTSB-I 2021-2, HOVTSB-I 2021-3, HOVTSB-I 2021-4, HOVTSB-I 2021-5, HOVTSB-I 2021-7, HOVTSB-I 2021-8, HOVTSB-I 2021-9, HOVTSB-I 2021-10, HOVTSB-I 2021-11, HOVTSB-I 2021-13, HOVTSB-I 2021-14, HOVTSB-I 2021-15, HOVTSB-I 2021-16, HOVTSB-I 2021-17, HOVTSB-I 2021-18, AHOVTSB2021-1, AHOVTSB2021-2. AHOVTSB2021-3, AHOVTSB2021-4, AHOVTSB2021-5, AHOVTSB2021-6, AHOVTSB2021-7, LSVT-I 2021-1, LSVT-I 2021-2, LSVT-I 2021-3, LSVT-I 2021-4, LSVT-I 2021-5, LSVT-I 2021-6, LSVT-I 2021-7, LSVT-I 2021-8, LSVT-I 2021-9, AVK-2021-1, AVK-2021-5, AVK-2021-4, IVK-I 2021-1, IVK-I 2021-2, IVK-I 2021-4, IVK-I 2021-5, IVK-I 2021-6, IVK-I 2021-7, IVK-I 2021-9, IVK-I 2021-10, IVK-I 2021-11, IVK-I 2021-12, IVK-I 2021-13, IVK-I 2021-14, IVK-I 2021-15, IVK-I 2021-16, IVK-I 2021-17, IVK-I 2021-18, ISK-I-2021-1, ISK-I-2021-2, ISK-I-2021-3, ISK-I-2021-6, ISK-I-2021-7, ISK-I-2021-8, ISK-I-2021-9, , ISK-I-2021-11, ISK-I-2021-12, ISK-I-2021-13, ISK-I-2021-14, ISK-I-2021-15, ISK-I-2021-16, ISK-I-2021-18, ISK-I-2021-19, ISK-I-2021-20, ISK-I-2021-21, ISK-I-2021-22, ISK-I-2021-24, ISK-I-2021-27, ISK-I-2021-4
3.	**3**	**11 to 20**	ISK-I 2021-26, ISK-2021-10, AVK-2021-3, AVK-2021-2, LGN-1
4.	**4**	**21 to 30**	-
5.	**5**	**31 to 40**	-
6.	**6**	**41 to 50**	-
7.	**7**	**51 to 60**	-
8.	**8**	**61 to 75**	-
9.	**9**	**76 to 100**	-

CONCLUSIONS

In conclusion the investigation concluded the genotypes HOVTSB-I 2021-19 and IVK-I-2021-9 demonstrated minimal damage (0.00%) from earwig, while HOVTSB-2021-19 exhibited the least wireworm damage (0.00%), followed by LSVT-I 2021-2. Additionally, genotypes HOVTSB-I 2021-19 recorded no pod damage from subterranean ants. The genotype HOVTSB-I 2021-19 (0.00%) was one of unique and promising genotype resistant to earwig, wireworm & subterranean ants. Moreover, it exhibited relatively good yield, can be used as resistant source in groundnut breeding programs against pod borers.

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