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Kadam DB
Head of Agricultural Entomology Section, College of Agriculture, Muktainagar, Jalgaon, Maharashtra, India

Band SS
Assistant Professor, Agricultural Entomology Section, College of Agriculture, Muktainagar, Jalgaon, Maharashtra, India

Palande PR
Assistant Professor, Department Agricultural Entomology, PGI, MPKV, Rahuri, Maharashtra, India

Corresponding Author:
Kadam DB
Head of Agricultural Entomology Section, College of Agriculture, Muktainagar, Jalgaon, Maharashtra, India

Screening of pomegranate varieties/lines against root-knot nematode, Meloidogyne incognita race-II Chitwood, infesting Pomegranate

Kadam DB, Band SS and Palande PR

Abstract
Fifty six pomegranate varieties/lines were screened against root-knot nematode. The termination of experiment, 7 to 8 weeks after inoculation revealed that out of fifty six varieties / lines of pomegranate screened against root-knot nematode, only seven varieties *viz*., Carnado- de-echo, Agah, Malta, Bassein Seedless, Speen, Sakarin, Khog, and Yearcaund (HRS) were found to be resistant to this nematode. However, sixteen varieties/lines *viz*., Speen danedar, Kandhari, Bedana Suri, Surkh anar, Jyoti, Alandi, Coimbatour white, Jallore seedless, Gulsha red, Kazki Anar, Lupania, Uthukul, Alah, Patana-5, Kazakaki Anar and P-26 were observed to be moderately resistant to root-knot nematode.

Keywords: Pomegranate, varieties, screened, root-knot nematode, resistant, Lines etc.

Introduction
The root-knot nematode, Meloidogyne incognita (Chitwood, 1949) is one of them causing considerable yield loss in pomegranate. Nematodes infecting plants as mostly present in soil, are difficult to control as they require huge amount of chemicals to apply which result uneconomical for use by the farmers. The hazards due to toxicity, destruction of natural enemies of nematode in nature, residual toxicity etc. also limits the use of chemicals for control of nematodes. The specific practical difficulties to control nematodes by adjustment of cultural practices are also many. The field of biological control of nematodes is still under investigation and to achieve a practical method at field level will require lot of research work to be done in times to come. The most practical solution to control nematodes and damage caused by them is evolving resistant varieties which are easily adoptable by the farmers. The resistance to nematode might be either due to no penetration in the host, if penetrated then may be due to no development to reach to maturity, if reached to maturity then either no or low reproduction i.e. less egg masses produced or number of eggs per egg mass may be small, the special cells like giant cells or nurse cells may not be formed and necrotic zone around the nematodes head may be formed which do not allow the nematode to feed and ultimately the death of the nematode. Efforts to control nematodes in fruit crops with resistant varieties have been made and reviewed below with special reference to root-knot nematode, M. incognita.

Material and Methods
A statistically designed experiment for screening of pomegranate varieties/lines against root-knot nematode was conducted during 'kharif' season in the glasshouse of AICRP on Nematodes, Department of Agricultural Entomology, Mahatma Phule Krishi Vidyapeeth, Rahuri. The seedlings of fifty six varieties/lines as listed in table 1 were obtained from the Horticulturist, AICRP on Arid Zone Fruits, M.P.K.V., Rahuri. All the varieties/lines of pomegranate were sown in 15 cm diameter earthen pots containing 1 kg mixture of autoclaved soil and FYM in 3:1 proportion. Each variety/lines was inoculated with 1000 freshly hatched J2 per pot seven days after planting. For inoculation the stock culture of the nematode was maintained on tomato in the micro plots. Inoculation was done by pouring the freshly hatched nematode suspension obtained from the egg masses of a stock culture in a three holes prepared around the plant and on roots exposed by removing the top layer of the soil, which were later on covered by the moist autoclaved soil. Before inoculation nematode count per ml of suspension was taken under microscope and required quantity of the suspension poured into the pots. The plants were watered as and when required and given the recommended dose of fertilizers.

The details of the experiment are as below. The experiment was conducted in completely randomized block design with three replications and 56 treatments (varieties/ Lines as given in Table 1).

Method of recording observations

Seven to eight weeks after inoculation, each variety/line was uprooted carefully and the adhering soil was washed properly under clean tap water and the observations on number of galls and eggs masses present on the root were counted. To count egg masses, staining of egg masses was done by dipping roots in 1% solution of trypan blue for two minutes. After dipping, roots were washed two to three times with tap water to remove the stain of roots. The soil samples from the pots were washed in the laboratory with Cobb's Sieving and Decanting Method and counts of final root-knot nematode populations were recorded. For this purpose, the residues of 200 and 350 mesh sieves were collected in plastic beakers and the volume of beaker was adjusted to 200 ml by adding tap water. For nematode count, the average of 10 counts of 1 ml suspension was taken and from this it was calculated to 200 ml of suspension, which was the soil population in the pot. On the basis of number of galls and egg masses per plant, each variety/line was rated for its reaction to nematode as below.

Rating	No. of galls and egg masses per plant	Reaction	
1.	0	Highly resistant	HR
2.	1 to 10	Resistant	R
3.	11 to 30	Moderately resistant	MR
4.	31 to 100	Susceptible	S
5.	101 and above	Highly susceptible	HS

Analysis of the experimental data

In order to find out the significant differences in different varieties/lines of pomegranate, all the experimental data were statistically analyzed. The significance of different varieties/lines was assessed at 5% level.

Table 1: List of germplasm lines of pomegranate screened against root-knot nematode, Meloidogyne incognita race-II.

Sr. No.	Name of the varieties/lines	Sr. No.	Name of the varieties/lines
1.	Speen danedar	29	Speen sakarin
2.	Agah	30	Masta
3.	Yercaud Local	31	Jodhapuri red
4.	Sainshirin	32	Jabesto
5.	P-26	33	Yercaud
6.	Bosek linsk	34	Kabul yellow
7.	K.R.S.	35	Shirin anar
8.	Kabul	36	Surat anar
9.	P-23	37	Bedana suri
10.	Kandhari	38	Surkh anar
11.	Bedana thick skin	39	Gulsha rose pink
12.	P-16	40	Gulsha red
13.	Kabul konoor	41	Kazakaki anar
14.	Yercand(H.R.S.)	42	Kazaki anar
15.	Jyoti	43	Lupania
16.	A.K.anar	44	Kalishirin
17.	Damani	45	Uthukul
18.	Muscat	46	Alah
19.	Kabul (I.I.H.R.)	47	Cranedo-de-echo
20.	P-13	48	Patana-5
21.	Dholka	49	Khog
22.	G-137	50	Gulsha
23.	Alandi	51	Mridula
24.	Combatur white	52	Dorsata malas
25.	Ganesh	53	Achik dana
26	Jallore seedless	54	Surskkar
27	Bedana sedana	55	Bhagawa
28	Bessein seedless	56	Arakta

Results and Discussion

Screening of fifty six varieties/lines of pomegranate against the root-knot nematode, M. incognita race-II done in glasshouse with a view to search for the source of resistance for recommendation to the farmers for cultivation and or to the breeders for incorporating the resistance in high yielding acceptable but susceptible varieties and ultimately to release it to farmers for cultivation in fields infested with, root-knot nematode. The observations on number of galls and egg masses per plant, number of eggs per egg mass, number of eggs per plant and soil population recorded seven to eight weeks after the inoculation and are presented in table 2 to 6. However, from the observations on number of galls and egg masses per plant each variety/line was rated for its reaction to nematode as described earlier in materials and methods. It could be seen from the table 2 to 6 that out of fifty six varieties/lines of pomegranate screened against root-knot nematode, only Seven varieties/lines *viz*., carnado-de-echo, Agah, Malta, Bassein Seedless, Speen Sakarin, Khog, and Yearcaund (HRS) were found to be resistant to the pest. The number of galls/egg masses recorded in these varieties/lines were 0.67, 0.67, 1.00, 1.33, 8.33, 8.33 and 8.67 per plant, respectively. The gall indices recorded in these lines were 2.00 per plant. However, sixteen varieties/lines *viz*., Speen danedar, Kandhari, Bedana Suri, Surkh anar, Jyoti, Alandi, Coimbatur white, Jallore seedless, Gulsha red, Kazki anar,

Lupania, Uthukul, Alah, Patana-5, Kazakaki anar and p-26 were observed to be moderately resistant to root-knot nematode recording 13.67 to 18.00, root galls per plant, and 6.00 to 8.00 egg masses per plant. The gall index recoded in these lines was 3.00 per plant.

Table 2: Reaction of different germplasm lines of pomegranate to root-knot nematode, M. incognita as evidenced by number of root galls/plant

Sr. No.	Variety	Number of root galls/plant			Mean
		RI	RII	RIII	
1.	Speen danedar	18	22	20	20.00
2.	Agah	1	1	0	0.67
3.	Yercaud Local	165	100	109	105.00
4.	Sainshirin	115	120	112	115.67
5.	P-26	20	18	24	20.67
6.	Bosek linsk	27	35	36	32.67
7.	K.R.S.	34	45	38	39.00
8.	Kabul	36	32	70	46.00
9.	P-23	32	35	32	33.00
10.	Kandhari	13	12	12	12.33
11.	Bedana thick skin	32	39	41	37.33
12.	P-16	43	41	46	43.33
13.	Kabul konoor	28	36	37	33.67
14.	Yercand(H.R.S.)	9	8	9	8.67
15.	Jyoti	21	19	24	21.33
16.	A.K.anar	36	36	44	38.67
17.	Damani	33	26	35	31.33
18.	Muscat	50	42	38	43.33
19.	Kabul (I.I.H.R.)	42	34	32	36.00
20.	P-13	48	48	60	52.00
21.	Dholka	43	50	45	46.00
22.	G-137	35	51	33	39.67
23.	Alandi	12	12	9	11.00
24.	Combatur white	22	23	22	22.33
25.	Ganesh	35	32	44	37.00
26	Jallore seedless	22	22	22	22.00
27	Bedana sedana	45	47	37	43.00
28	Bessein seedless	1	2	1	1.33
29	Speen sakarin	9	8	8	8.33
30	Masta	1	1	0	0.67
31	Jodhapurired	49	50	48	49.00
32	Jabesto	55	42	53	50.00
33	Yercaud	117	127	132	125.33
34	Kabul yellow	133	131	137	133.67
35	Shirin anar	120	120	115	118.33
36	Surat anar	50	50	61	53.67
37	Bedana suri	7	8	17	10.67
38	Surkh anar	14	17	12	14.33
39	Gulsha rose pink	7	8	5	6.67
40	Gulsha red	25	26	26	25.67
41	Kazakaki anar	19	21	24	21.33
42	Kazaki anar	20	22	16	19.33
43	Lupania	13	14	7	11.33
44	Kalishirin	66	42	47	51.67
45	Uthukul	23	22	16	20.33
46	Alah	19	22	19	20.00
47	Cranedo-de-echo	1	1	1	1.00
48	Patana-5	22	23	20	21.67
49	Khog	9	7	9	8.33
50	Gulsha	43	40	40	41.00
51	Mridula	105	100	95	100.00
52	Dorsata malas	43	41	44	42.67
53	Achik dana	36	18	51	35.00
54	Surskkar	32	33	30	31.67
55	Bhagwa	145	135	130	136.67
56	Arakta	110	110	113	111.00
	SE ±				4.79
	CD at 5%				13.55

Table 3: Reaction of different germplasm lines of pomegranate to root-knot nematode, M. incognita as evidenced by number of egg masses/plant

Sr. No.	Variety	Number of egg masses/plant			Mean
		RI	RII	RIII	
1.	Speen danedar	2	1	3	2.00
2.	Agah	0	0	0	0.00
3.	Yercaud Local	65	60	55	60.00
4.	Sainshirin	60	58	68	62.00
5.	P-26	9	9	6	8.00
6.	Bosek linsk	27	25	23	25.00
7.	K.R.S.	24	58	27	36.33
8.	Kabul	26	30	31	29.00
9.	P-23	28	27	23	26.00
10.	Kandhari	3	2	4	3.00
11.	Bedana thick skin	35	50	40	41.67
12.	P-16	40	30	20	30.00
13.	Kabul konoor	27	25	23	25.00
14.	Yercand(H.R.S.)	0	0	0	0.00
15.	Jyoti	8	9	4	7.00
16.	A.K.anar	29	32	60	40.33
17.	Damani	27	35	20	27.33
18.	Muscat	34	59	51	48.00
19.	Kabul (I.I.H.R.)	23	35	38	32.00
20.	P-13	55	50	30	45.00
21.	Dholka	42	55	32	43.00
22.	G-137	38	54	40	44.00
23.	Alandi	3	4	2	3.00
24.	Combatur white	5	3	4	4.00
25.	Ganesh	30	32	58	40.00
26	Jallore seedless	4	6	5	5.00
27	Bedana sedana	35	58	20	37.67
28	Bessein seedless	0	0	0	0.000
29	Speen sakarin	0	0	0	0.00
30	Malta	0	0	0	0.00
31	Jodhapurired	36	55	42	44.33
32	Jabesto	50	48	37	45.00
33	Yercaud	70	65	60	65.00
34	Kabul yellow	92	80	89	87.00
35	Shirin anar	65	60	55	60.00
36	Surat anar	35	32	23	30.00
37	Bedana suri	12	10	10	10.67
38	Surkh anar	5	3	4	4.00
39	Gulsha rose pink	0	0	0	0.00
40	Gulsha red	4	3	2	3.00
41	Kazakaki anar	8	8	5	7.00
42	Kazaki anar	4	3	2	3.00
43	Lupania	7	7	4	6.00
44	Kalishirin	39	38	28	35.00
45	Uthukul	4	5	7	5.33
46	Alah	5	4	3	4.00
47	Cranedo-de-echo	0	0	0	0.00
48	Patana-5	6	5	4	5.00
49	Khog	0	0	0	0.00
50	Gulsha	50	40	40	43.33
51	Mridula	65	70	60	65.00
52	Dorsata malas	35	44	43	40.67
53	Achik dana	34	32	24	30.00
54	Surskkar	33	24	20	29.00
55	Bhagwa	70	75	80	75.00
56	Arakta	53	70	72	65.00
	SE ±				3.78
	CD at 5%				10.70

Table 4: Reaction of different germplasm lines of pomegranate to root-knot nematode, M. incognita as evidenced by number of root galls/egg masses/plant

Sr. No.	Variety	Number of root galls/egg masses/plant			Mean
		RI	RII	RIII	
1.	Speen danedar	20	23	23	22.00
2.	Agah	1	1	0	0.67
3.	Yercaud Local	160	164	170	164.67
4.	Sainshirin	175	178	180	177.67
5.	P-26	29	27	30	28.67
6.	Bosek linsk	54	60	59	57.67
7.	K.R.S.	58	103	65	75.33
8.	Kabul	62	62	101	75.00
9.	P-23	60	62	55	59.00
10.	Kandhari	16	14	16	15.33
11.	Bedana thick skin	67	89	81	79.00
12.	P-16	83	71	66	73.33
13.	Kabul konoor	55	61	60	58.67
14.	Yercand(H.R.S.)Jyoti	9	8	9	8.67
15.	Jyoti	29	28	24	27.00
16.	A.K.anar	65	68	104	79.00
17.	Damani	60	61	55	58.67
18.	Muscat	84	101	89	91.67
19.	Kabul (I.I.H.R.)	65	69	70	68.00
20.	P-13	103	98	90	97.00
21.	Dholka	85	105	77	89.00
22.	G-137	73	105	73	83.67
23.	Alandi	15	16	11	14.00
24.	Combatur white	27	26	26	26.33
25.	Ganesh	65	64	102	77.00
26	Jallore seedless	24	28	27	26.00
27	Bedana sedana	80	105	90	93.33
28	Bessein seedless	1	2	1	1.33
29	Speen sakarin	9	8	8	8.33
30	Malta	1	1	0	0.67
31	Jodhapurired	85	105	90	93.33
32	Jabesto	105	90	90	95.00
33	Yercaud	187	192	178	185.67
34	Kabul yellow	205	201	256	220.67
35	Shirin anar	185	180	170	178.33
36	Surat anar	82	84	78	81.33
37	Bedana suri	19	18	27	21.33
38	Surkh anar	19	20	16	18.33
39	Gulsha rose pink	7	8	5	6.67
40	Gulsha red	29	29	28	28.67
41	Kazakaki anar	27	29	29	27.67
42	Kazaki anar	24	25	18	22.67
43	Lupania	20	21	11	17.33
44	Kalishirin	105	80	75	86.67
45	Uthukul	27	27	23	25.67
46	Alah	24	26	22	24.00
47	Cranedo-de-echo	1	1	1	1.00
48	Patana-5	28	28	25	27.00
49	Khog	9	7	9	8.33
50	Gulsha	93	80	80	84.33
51	Mridula	170	155	180	168.33
52	Dorsata malas	78	85	87	83.33
53	Achik dana	70	50	75	65.00
54	Surskkar	65	68	50	61.00
55	Bhagwa	215	210	220	215.00
56	Arakta	165	180	185	176.67
	SE ±				9.88
	CD at 5%				27.95

Table 5: Reaction of different germplasm lines of pomegranate to root-knot nematode, M. incognita as evidenced by gall index/plant

Sr. No.	Variety	Gall index/plant			Mean	Reaction
		RI	RII	RIII		
1.	Speen danedar	3	3	3	3.00	M.R.
2.	Agah	2	2	1	1.67	R
3.	Yercaud Local	5	5	5	5.00	H.S.
4.	Sainshirin	5	5	5	5.00	H.S.
5.	P-26	3	3	3	3.00	M.R.
6.	Bosek linsk	4	4	4	4.00	S.
7.	K.R.S.	4	5	4	4.33	H.S.
8.	Kabul	4	4	5	4.33	H.S.
9.	P-23	4	4	4	4.00	S.
10.	Kandhari	3	3	3	3.00	M.R.
11.	Bedana thick skin	4	4	4	3.00	S.
12.	P-16	4	4	4	3.00	S.
13.	Kabul konoor	4	4	4	4.00	S.
14.	Yercand(H.R.S.)	2	2	2	2.00	R.
15.	Jyoti	3	3	3	3.00	M.R.
16.	A.K.anar	4	4	5	4.33	H.S.
17.	Damani	4	5	4	4.33	H.S.
18.	Muscat	4	5	4	4.33	H.S.
19.	Kabul (I.I.H.R.)	4	4	4	4.00	S.
20.	P-13	5	4	4	4.33	H.S.
21.	Dholka	4	4	4	4.00	S.
22.	G-137	4	5	4	4.33	H.S.
23.	Alandi	3	3	3	3.00	M.R.
24.	Combatur white	3	3	3	3.00	M.R.
25.	Ganesh	4	4	5	4.33	H.S.
26	Jallore seedless	3	3	3	3.00	M.R.
27	Bedana sedana	4	4	5	4.33	H.S.
28	Bessein seedless	2	2	2	2.00	R.
29	Speen sakarin	2	2	2	2.00	R.
30	Malta	2	2	1	1.67	R.
31	Jodhapurired	4	5	4	4.33	H.S.
32	Jabesto	5	4	4	4.33	H.S.
33	Yercaud	5	4	4	4.33	H.S.
34	Kabul yellow	5	5	5	5.00	H.S.
35	Shirin anar	5	5	5	5.00	H.S.
36	Surat anar	4	4	4	4.00	S.
37	Bedana suri	3	3	3	3.00	M.R.
38	Surkh anar	3	3	3	3.00	M.R.
39	Gulsha rose pink	4	4	4	4.00	S.
40	Gulsha red	3	3	3	3.00	M.R.
41	Kazakaki anar	3	3	3	3.00	MR
42	Kazaki anar	3	3	3	3.00	MR
43	Lupania	3	3	3	3.00	MR
44	Kalishirin	5	4	4	4.33	HS
45	Uthukul	3	3	3	3.00	MR
46	Alah	3	3	3	3.00	MR
47	Cranedo-de-echo	2	2	2	2.00	R
48	Patana-5	3	3	3	3.00	MR
49	Khog	2	2	2	2.00	R
50	Gulsha	4	4	4	4.00	S.
51	Mridula	5	5	5	5.00	HS
52	Dorsata malas	4	4	4	4.00	S.
53	Achik dana	4	4	4	4.00	S
54	Surskkar	4	4	4	4.00	S
55	Bhagwa	5	5	5	5.00	HS
56	Arakta	5	5	5	5.00	HS
	SE ±					9.33
	CD at 5%					25.72

Table 6: Root-knot nematode, M. incognita population in soil/pot at termination

Sr. No.	Cultivars	Initial Nematode Population (J2)/ pot	Root-knot nematode population/pot at termination				Multipli cation Factor
			RI	RII	RIII	Mean	
1.	Speen danedar	1000	1100	1300	1200	1200	1.20
2.	Agah	1000	600	620	580	600	0.60
3.	Yercaud Local	1000	2900	2520	2800	2740	2.74
4.	Sainshirin	1000	2580	2800	2900	2760	2.76
5.	P-26	1000	1200	1090	1300	1180	1.18
6.	Bosek linsk	1000	1700	2000	2000	1900	1.90
7.	K.R.S.	1000	1660	2100	200	1920	1.92
8.	Kabul	1000	1690	2000	2100	1930	1.93
9.	P-23	1000	1800	2000	1900	1900	1.90
10.	Kandhari	1000	1200	1140	1200	1180	1.18
11.	Bedana thick skin	1000	1700	1680	1700	1680	1.69
12.	P-16	1000	1700	1660	1700	1670	1.67
13.	Kabul konoor	1000	1860	2000	1900	1920	1.92
14.	Yercand(H.R.S.)	1000	600	570	600	590	0.59
15.	Jyoti	1000	1300	1200	1100	1200	1.20
16.	A.K.anar	1000	2520	2500	2600	2540	2.54
17.	Damani	1000	1900	2000	1880	1960	1.96
18.	Muscat	1000	2700	2800	2780	2760	2.76
19.	Kabul (I.I.H.R.)	1000	1740	1960	2000	1900	1.90
20.	P-13	1000	3000	2500	2480	2740	2.74
21.	Dholka	1000	2690	2740	2550	2660	2.66
22.	G-137	1000	2660	2700	2560	2640	2.64
23.	Alandi	1000	1180	1220	1140	1180	1.18
24.	Combatur white	1000	1200	1180	1160	1180	1.18
25.	Ganesh	1000	2700	2780	2800	2760	2.76
26	Jallore seedless	1000	1000	1240	1240	1160	1.16
27	Bedana sedana	1000	2680	2700	2600	2660	2.66
28	Bessein seedless	1000	540	550	530	540	0.54
29	Speen sakarin	1000	580	550	550	560	0.56
30	Malta	1000	530	540	490	520	0.52
31	Jodhapurired	1000	2590	2700	2690	2660	2.66
32	Jabesto	1000	2700	2680	2660	2680	2.68
33	Yercaud	1000	2800	2900	2700	2800	2.80
34	Kabul yellow	1000	3000	3040	2750	3000	3.00
35	Shirin anar	1000	2780	2780	2760	2770	2.77
36	Surat anar	1000	1950	1800	1900	1900	1.90
37	Bedana suri	1000	900	1350	1350	1200	1.20
38	Surkh anar	1000	1160	1200	1180	1180	1.18
39	Gulsha rose pink	1000	1300	1300	1340	1340	1.34
40	Gulsha red	1000	1180	1180	1180	1180	1.17
41	Kazakaki anar	1000	1160	1190	1180	1180	1.18
42	Kazaki anar	1000	1100	1200	1180	1160	1.15
43	Lupania	1000	1150	1160	1140	1150	1.14
44	Kalishirin	1000	2100	2060	1960	2040	1.96
45	Uthukul	1000	1200	1200	1180	1180	1.18
46	Alah	1000	1180	1190	1080	1150	1.15
47	Cranedo-de-echo	1000	900	780	870	850	0.85
48	Patana-5	1000	1160	1120	1140	1140	1.14
49	Khog	1000	880	860	930	890	0.89
50	Gulsha	1000	1700	1180	1650	1510	1.51
51	Mridula	1000	2900	2540	2900	2780	2.78
52	Dorsata malas	1000	1700	1180	1620	1500	1.50
53	Achik dana	1000	1860	1940	1900	1900	1.90
54	Surskkar	1000	1880	1900	1770	1850	1.85
55	Bhagwa	1000	2900	2600	2900	2800	2.80
56	Arakta	1000	2560	2740	2800	2700	2.70
	SE ±					71.45	
	CD at 5%					202.11	

Among the rest of thirty four germplasm lines, were either susceptible or highly susceptible to root-knot nematode. The number of root galls and egg masses recorded in these lines ranged from 57.67 (*Bosek linsk*) to 200.67 (Kabul yellow), respectively. The gall index recorded in these lines ranged from 4.00 to 5.00 per plant. It could also be seen from the data presented in Table 6 that the initial nematode population in soil was 2000 nematodes/pot and seven to eight weeks after

inoculation; the nematode population of resistant lines was lower than the other susceptible and highly susceptible lines. The resistant lines *viz*. Malta, Bassein seedless, Speen sakarin, Carnedo-de-echo, Agah, Yercaund (H.R.S.) and Khog were found to be resistant to the pest recording 0.52, 0.54, 0.56, 0.59 and 0.59, 0.59 and 0.89 respectively. The moderately resistant germplasm lines recorded the multiplication factor of 1.23 to 1.33. Whereas, susceptible and highly susceptible varieties/lines recorded the multiplication factor 1.34 and above.

The results of the present investigations agree with the results of an earlier experiment conducted by Darekar and Shelke (2000) [4], who screened thirty five varieties/lines of pomegranate against root-knot nematodes, M. incognita and recorded the germplasm lines, Achik dana, Alandi, Baseka links, Jabesto, Kabul (IIHR), Kazki anar and Siah Shirin moderately resistance to the pest, while rest of the varieties/lines were found either susceptible or highly susceptible to root- knot nematode. The results obtained under the study are also similar with the results of the earlier experiment conducted by AICRP on Nematodes at Rahuri (Anonymous, 2001) [1] where, fifty four varieties/lines of pomegranate were screened against root-knot nematode, M. incognita and recorded ten varieties/lines *viz*; P-23, Kandhari, Kabul Kanoor, A.K. Anar, Damini, Gulsha rose pink, Bedana Suri, Uthakul, Khog and Achik dana resistant to the pest. The fifteen varieties *viz*; P26, Baseka Links, K.R.S., Kabul, Bedana thick skin, P-16, Yearcuat (HRS), Jellore seedless, Bessein seedless, Surkh Anar, Kazki Anar, Lupiana, Kalishirin, Gulsha and Dorsata mauls were found to be moderately resistant to the pest, while rest of the varieties/lines were either susceptible or highly susceptible to the root-knot nematodes. The performance of moderately resistant pomegranate germplasm lines *viz*; Alandi, Kabul IIHR, Jabesto, Kazki anar, Siah Shirin and Achik dana will help to incorporate the resistance in high yielding susceptible pomegranate germplams lines by way of breeding and also by studying the morphological/biochemical factors if any responsible for offering resistance in pomegranate lines.

Conclusion

The resistant lines *viz*. Malta, bassein seedless, Speen sakarin, Carnedo-de-echo, Agah, Yercaund (H.R.S.) and Khog were found to be resistant to the Root knot nematode.

References

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