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RESISTANCE OF TAPIOCA VARIETIES TO THE RED SPIDER MITE *TETRANYCHUS TELARIUS* LINN.

The effect of different food plants species on the reproduction and control of *T telarius* has already been studied. (Chandrasekharan et al., 1964; Matsutani, 1968). Though tapioca is seriously affected by this pest in Kerala, especially during the summer season, the influence of different varieties of this crop on the biology and development of T. *telarius* is not known. Results of some preliminary studies conducted in this line are reported here.

Potted plants of 20 varieties of tapioca (vide Table 1) were maintained in the College Farm. T. *telarius* was reared on the leaves of these varieties collected from field and kept on filter paper over moist cotton swabs in petridishes in the laboratory. The leaves were being changed on alternate days. Ten freshly laid eggs were kept in each petridish and 5 such dishes were maintained for each variety for observing the development period of the pest. Newly emerged adults were maintained in pairs in separate dishes for ascertaining their longevity and fecundity. Ten pairs were observed for each variety. The size was ascertained in terms of the length and width of 25 mites each collected at random from bulk rearings maintained on different varieties.

The data collected and the results of statistical analysis of the same are presented in Table 1.

Longer development duration, shorter longevity and lesser fecundity are factors unfavourable for the multiplication of the insect and consequent build up of the population. The varieties, Elavan, H 97, H 226, Kalikalan, Kayyalachady and H 165 may be treated as relatively resistant to T. *telarius* since they maintain fairly high ranks with respect to all the criteria mentioned above as is seen in Table 1. Chinnichevalan had high rank with reference to longevity and fecundity but it was in the 12th position only with reference to development period. Though Pannivella, Sundarivella and Mankozhunnan had fairly high ranks with reference to the total development period, their ranks with reference to other criteria were comparatively low. Adult longevity of the mites on Manjakoilvella, Vellakalikalan and Chenkomban was low but their effect on other biological attributes was favourable to the pest. Adukkumuttan and Pancharavella had fairly high ranks with reference to fecundity, but with reference to other attributes their positions were relatively low. The nymphal mortality during development on different varieties showed a range of 0 to 75 per cent. But the variations were found to be statistically insignificant. However, the nymphal mortality in the

Table 1

The development duration, nymphal mortality, longevity, fecundity and size of *T. telarius* reared out on different varieties of tapioca

Tapioca varieties	Total development period	Percentage of nymphal mortality during development	Longevity of adults (in days)	Fecundity (Mean number of eggs/female)	Size (mm)	
					Mean length	Mean width
Elangon	12.30 (1)	73.3	4.00 (4)	7.00 (4)	0.420	0.230
Panruvella	11.50 (2)	30.00	6.25 (15)	16.33 (11)	0.465	0.240
H. 226	11.40 (3)	25.00	4.25 (5)	10.66 (7)	0.450	0.230
H. 226	10.70 (4)	14.29	5.00 (10)	10.00 (6)	0.445	0.222
Sunkarivalan	10.60 (5)	25.00	5.75 (13)	19.66 (15)	0.460	0.235
Kalikalan	10.50 (6)	35.00	3.50 (1)	5.66 (2)	0.420	0.225
Kayalachaddy	10.50 (7)	40.00	4.50 (7)	4.00 (1)	0.465	0.240
Mallikozhikizhangan	10.20 (8)	0.00	6.50 (16)	21.33 (17)	0.445	0.225
H. 165	10.20 (9)	40.00	4.05 (9)	8.33 (5)	0.450	0.235
Arakombai	10.10 (10)	15.00	5.00 (11)	20.00 (16)	0.460	0.235
Adukkumuttan	10.10 (11)	33.33	7.50 (19)	11.00 (8)	0.420	0.225
Chinnichevalan	10.00 (12)	20.00	3.75 (3)	13.00 (9)	0.445	0.230
Manjakoilvella	9.90 (13)	15.00	4.25 (6)	16.66 (12)	0.425	0.225
M4	9.70 (14)	15.38	6.50 (18)	26.50 (20)	0.465	0.240
Vellakalikalan	9.50 (15)	30.00	3.50 (2)	23.66 (19)	0.465	0.240
Kannikaruppan	9.30 (16)	45.45	9.75 (20)	18.38 (14)	0.435	0.230
Vattanamaravan	9.20 (17)	30.00	5.25 (2)	13.38 (18)	0.445	0.230
Manjaviyan	9.20 (18)	15.38	6.50 (17)	13.38 (10)	0.450	0.235
Pancharavella	9.20 (19)	25.00	6.38 (14)	6.38 (3)	0.425	0.225
Chenkomban	9.00 (20)	10.38	4.50 (8)	17.66 (13)	0.465	0.240
F. test	Significant	Not significant	Significant	Significant	Not significant	
C.D.	1.39		2.024	7.88		

Figures in parenthesis are the relative ranks of the varieties based on different characters

above resistant varieties also was fairly high. The size of the adults reared out on different tapioca varieties did not differ significantly.

സംഗ്രഹം

വിവിധ ഇനം മരച്ചീനി ചെടികളിൽ വളരുമ്പോൾ 'ടെട്രാനിക്കസ്' റ്റിലേറിയസ്' എന്ന ക്ഷുദ്രപ്രാണികളെ അതു എങ്ങിനെ ബാധിക്കുന്നുവെന്ന മനസിലാക്കാൻ ലാബ്രട്ടറിയിൽ ചില പരീക്ഷണങ്ങൾ നടത്തി. വളർച്ച പൂർണ്ണമാവാൻ കാലദൈർഘ്യം ഉണ്ടാക്കുകയും, അവയിൽ വളർന്നവരുന്ന പ്രാണികൾക്ക മുരുങ്ങിയ ജീവിതവും, താരതമ്യേന കുറച്ച പ്രത്യുല്പാദന ശേഷിയും ഉണ്ടാക്കുകയും ചെയ്യുന്ന ഇനങ്ങൾ സ്വാഭാവികമായും ഈ ക്ഷുദ്രപ്രാണികളുടെ ഉപദ്രവം ചെറുത്തു നിൽക്കാൻ കൂടുതൽ കഴിവുള്ളവയായിരിക്കും. ഈ മാനദണ്ഡത്തിൽ 20 ഇനം മരച്ചീനികളെ തരം തിരിച്ചതിൽ ഇളവൻ, എച്ച് 97, എച്ച് 226, കലികാലൻ, കയ്യാലചാടി, എച്ച് 165 എന്നീ ഇനങ്ങൾക്കാണ് ടെട്രാനിക്കസ് ടിലേറിയസിനെതിരെ ഏറ്റവും പ്രതിരോധ ശക്തിയുള്ളതെന്ന കണ്ടു.

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