Maximum hatching of juveniles occurred within 21 days after exposure to 15 days old rice root diffusates and there was no further signficant increase by 28 and 35 days (Fig. 1 B). The hatching within this first 3 weeks did not decrease even when the root diffusates were diiuted 16 times but further dilutions to 64 times and above the hatching became close to water hatch (Fig. 1 C). Similarly in 3 mM thiamin and flavianic acid the hatching was not decreased till 16 times dilutions but became close to water hatch when diluled further (Fig. 1 D). The hatching curves obtained in various dilutions of root diffusates and the artificial hatching agents was hump shaped (Fig. 1 C, D) and resembles the one obtained for the potato cyst nematode, *Globodera rostochiensis* (Shepherd, 1962). The hatching behaviour of *H. oryzicola* in both root diffusates as well as in artificial hatching agents seem to be quite similar.

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RESPONSE OF *ARECA* COLLECTIONS AGAINST *RADOPHOLUS SIMILIS*

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Koshy et al. (1979) reported on the susceptibility of 31 areca collections against *Radopholus similis* (Cobb, 1893) Thorne, 1949. In the present work the reaction ten additional collections to *R. similis* is reported. The tests were initiated in December, 1977 with 25 seednuts each of ten accessions seeded in methyl bromide (98%MB+2% Chloropicrin) fumigated sandy loam (coarse sand-55%, fine sand-29%, silt 1% and clay 16%). Soil was fumigated with methyl

TABLE I

Effect of Radopholus Similis *on* Areca *germplasm collections (av. of 5 replications)*

Type	Accession Nos	Per cent reduction of growth parameters compared with uninoculated control						Root lesion index	Nemas/ gram of root	Total nematode population (soil+root)
		Shoot length (cm)	Shoot weight (gm)	Collar girth (mm)	No. of leaves	Root length (cm)	Root weight (gm)			
Sri Lanka—3*	VTL—21	32.4	51.4	34.2	31.6	52.4	39.3	1.2	103	451
Indica*		3.4	62.2	18.8	51.7	3.4	58.5	1.2	116	1949
Peechi		20.7	17.9	5.6	40.0	38.0	22.7	1.2	105	5767
Sweet areca		29.9	52.9	7.3	16.0	36.3	64.9	2.0	95	1625
Saigon—2	VTL—28b	36.9	30.3	21.2	20.7	25.3	43.8	2.8	128	3773
Sri Lanka—2	VTL—15	6.7	41.6	9.1	33.3	11.7	27.9	3.0	143	4395
Saigon—1	VTL—28a	26.7	20.8	14.5	7.7	3.2	46.9	3.0	136	4750
Andaman—1	VTL—29a	19.3	15.4	8.2	0.0	11.8	41.0	3.2	220	6318
Andaman—2	VTL—29b	13.8	3.0	22.1	25.9	38.9	32.7	3.8	189	7053
Local (South Kanara)	VTL—22	30.3	36.3	16.9	25.0	28.8	53.3	4.6	242	7247
Mean								2.6		4333
S.E.								0.8		1543
C.D.								2.1**		4172**

* *Areca triandra*; all others are *A. catechu*

RP 902

bromide @ 1 kg/2.7 M^3 under polyethylene cover for 48 hr. and used after 20 days. After six months, ten seedlings in the four leaf-stage were transplanted in to individual clay pots containing 5 kg of treated soil. *Radopholus similis* inoculum was extracted from roots of arecanut palms as described by Koshy *et al.* 1978). Five seedlings of each variety were inoculated in September, 1978 each with 1500 juvenile and female nematodes. The remaining five seedlings which served as control received the run off from the 400 mesh sieve used for collecting the inoculum. Seedlings were maintained in a greenhouse where the ambient temperature ranged from 24 to 29°C and watered daily with boiled and cooled water. The experiment was terminated in March, 1980. Root systems of individual plants were rated visually on 0-5 scale : O=no infection, 1=small, elongate lesions on white roots with necrotic root tips, 2=prominent lesions of dark brown to black with necrotic root tips, 3=coalescing lesions with necrotic root tips, 4=partial decay of roots with necrotic root tips and 5=Severe decay of roots with necrotic roof tips. Length and weight of shoots and roots, collar girth, number of leaves and number of nematodes in roots and soil were recorded as sescribed by Koshy *et al.* (1978).

The accessions differed in susceptibility (Table 1). The maximum per cent reduction in shoot length and shoot weight, collar girth, number of leaves, root length and root weight did not occur on Local (VTL-22). However, the maximum root lesion index and number of nematodes in roots and soil were greatest on Local (VTL-22). Two varieties of *A. triandra* (Sri Lanka-3 and Indica) and one of *A. catechu* (Sweet areca) exhibited more or less similar levels of reduction in shoot and root growth with low numbers of nematodes and root-lesion. This indicates a high degree of resistance to nematode multiplication by these three varieties even on inoculation with high nematode population. Peechi supported a higher total nematode population with lower root lesion index and fewer nematodes per gram of roots with comparatively less plant damage; thereby, exhibiting a tolerant reaction to the burrowing nematode. There was no correlation between root-lesion index and the total nematode populations (soil+root) except in Sri Lanka-3. Saiyon-1 and Saigon-2, Sri Lanka-2, Andaman-1 Andaman-2 were rate intermediate because they supported large numbers of nematodes with moderate plant damage. Root systems of control plants did not exhibit lesions, necrosis of root tips or contain nematodes. In general, the plant growth parameters other than the root weight did not reflect a trend in relation to nematode population and lesion developmt. Primary lesions on main roots of arecanut coalesed and formed small patches; whereas, on coconut roots the initial individual lesions were observed even after decay began. Necrosis is one of the most important and consistent symptoms of root tips of arecanut, but was not observed on coconut roots.

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