Table 1. The effects of seed treatment with thiabendazole on seedling infection by A. rabiei and seed germination in chickpeas.

Type of test	Number of seeds per treatment	Percent seeds/seedlings infected in control[a]	Percent seeds germinated		
			Control	3 g/kg	6 g/kg
Agar plate	10	90	NR[b]	NR	NR
Blotter	50	50	NR	NR	NR
Growing-on 1	150	11	59	72	73
Growing-on 2	100	NR	NR	72	78
Growing-on 3	75	60	71	74	65

[a] There were no seeds or seedlings infected with 3 g or 6 g/kg thiabendazole seed treatment.

[b] NR = Not recorded.

errors could not be computed but, in all tests, treatment with thiabendazole completely eliminated seed infection by A. rabiei, with no deleterious effects on seed germination (Table 1). This fungicide therefore affords a safe and effective means for controlling seedborne infection of chickpeas by A. rabiei.

-- M.V. Reddy and S. Kababeh (ICARDA, Aleppo, Syria)

Plant Parasitic Nematodes in ICRISAT Chickpea Fields

During November and December 1983, five Vertisol fields in which chickpeas were being grown on the research farm of ICRISAT Center at Patancheru were analyzed for the presence of plant parasitic nematodes. Fifty soil cores were randomly collected from each field with the aid of a screw auger, and nematode populations per 500 cc soil were assessed using Cobb's decanting and sieving technique and the modified Baermann funnel technique. The following nematodes were found: cyst nematodes, Heterodera cajani (Fig. 1) and Heterodera sp; lance nematode, Hoplolaimus seinhorsti; lesion nematode, Pratylenchus sp; reniform nematode, Rotylenchulus reniformis; spiral nematodes, Helicotylenchus indicus and H. retuses; and stunt nematode, Tylenchorhynchus sp (Table 1). These genera are proven pathogens of various crops and can cause considerable yield loss. In BIL (Black ICRISAT Lake) fields, which had been artificially infested with Fusarium oxysporum f.sp. ciceri and in which chickpeas had been grown in the postrainy seasons for the past five years but where the fields had been fallow in the rainy season for the past ten years, nematode populations were low, except for the unidentified species of Heterodera in BIL-1 (Table 1). Nematode populations were highest in fields BP(Black Precision)-14A and BUS(Black Unsprayed)-8H, in which sorghum and various other crops had been grown during the past 5 years.

The unidentified cyst nematode detected in BIL-1 is different from those previously

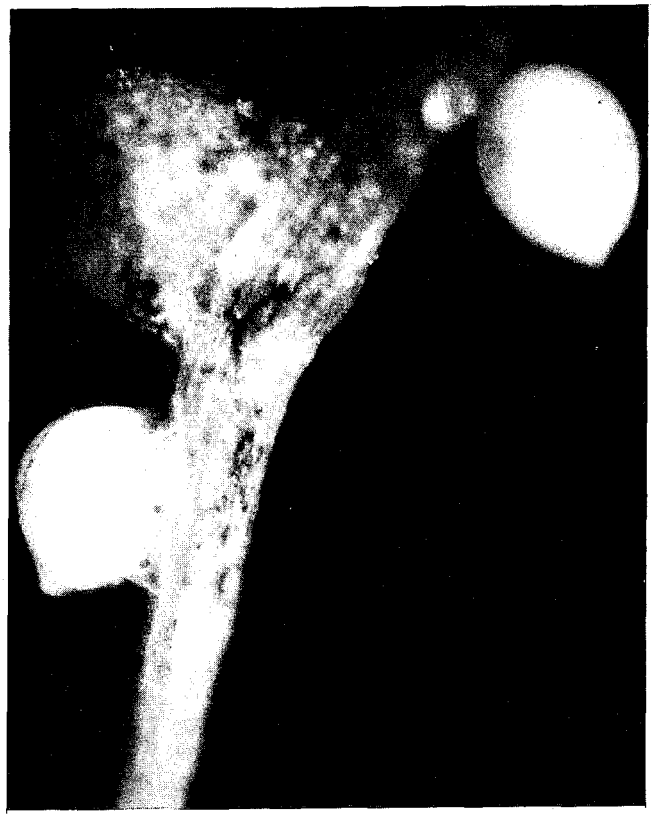

Figure 1. Heterodera cajani *females on root.*

Table 1. Population of plant parasitic nematodes in Vertisol chickpea fields.[a]

Field	BIL-1		BIL-2C		BIL-2D		BP-14A		BUS-8H	
Nematode	Nematodes/ 500 cc soil	% Total nematode species	Nematodes/ 500 cc soil	% Total nematode species	Nematodes/ 500 cc soil	% Total nematode species	Nematodes/ 500 cc soil	% Total nematode species	Nematodes/ 500 cc soil	% Total nematode species
Helicotylenchus indicus	0	0	0	0	0	0	60	4.4	0	0
Helicotylenchus retusus	300	13.1	260	52.0	160	34.2	440	32.5	380	26.5
Heterodera cajani	165 (5)[b]	7.2	100 (4)	20.0	208 (8)	44.4	372 (17)	27.5	235 (13)	16.4
Heterodera sp.	1680 (24)	73.5	0	0	0	0	0	0	0	0
Hoplolaimus seinhorsti	20	0.9	20	4.0	40	8.5	100	7.4	340	23.7
Pratylenchus sp.	80 [9][c]	3.5	60 [6]	12.0	60 [5]	12.9	100 [8]	7.4	140 [16]	9.8
Rotylenchulus reniformis	0	0	0	0	0	0	160	11.8	160	11.1
Tylenchorhynchus sp.	40	1.8	60	12.0	0	0	120	8.9	180	12.5

[a] BIL=Black ICRISAT Lake; BP=Black Precision; BUS=Black Unsprayed;
[b] () = Cysts/500 cc soil; [c] [] = Nematodes/g root.

reported on chickpeas, and efforts to identify it are in progress.

-- S.B. Sharma, V.W. Saka, and Y.L. Nene (ICRISAT)

Entomology

A Preliminary Study of Incidence of *Aphis craccivora* in Chickpea at Hissar, India

Stunt, caused by pea leaf-roll virus, is the most important and widespread virus disease of chickpea in almost all the chickpea-growing areas of the world. The legume aphid, Aphis craccivora Koch (Aphididae : Homoptera) is a known vector of this virus (Nene and Reddy, 1976)(1). Some aspects of management of stunt disease are being studied at the ICRISAT experimental farm at Hissar. During 1982/83, the incidence of A. craccivora was studied in the chickpea stunt disease nursery at this location. The nursery consisted of four rows of a mixture of ten legumes, (cowpea, field pea, lentil, mung bean, urd bean, garden pea, alfalfa, fenugreek, faba bean, and Melilotous alba) sown 0.75 cm apart, around and between every six chickpea rows in a 0.5 ha field, on 16 September 1982. The test material and indicator/spreader rows of a mixture of susceptible chickpea lines (ICC 3912 and ICC 5566), after every two test rows, were sown on 7 October 1983. Three sticky traps were located in the nursery. Each trap consisted of a yellow tin cylinder (10 cm dia, 15 cm height) coated with sticker (TanglefootR) on the sides and installed 30 cm above ground.