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ASSESSMENT OF AVOIDABLE YIELD LOSS IN COTTON  
(*GOSSYPIUM BARBADENSE* L.)  
BY FUMIGATION WITH METHAM SODIUM<sup>(1)</sup>

by  
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Fumigation of *Rotylenchulus reniformis*-infested fields in U.S.A. has been reported to increase the yield of cotton (Jones *et al.*, 1959; Thames *et al.*, 1971). Results of field experiments conducted at Coimbatore, India, for assessment of avoidable yield loss in cotton (*Gossypium barbadense* L.) cv. Suvin are reported in this paper.

Two replicated field trials were conducted during 1978-79 and 1979-80 in a black clayey loam soil. One set of eight plots was fumigated with metham sodium 32% at the rate of 500 l/ha in 5 cm of standing water, 15 days before sowing. Eight non-fumigated plots were maintained as controls. A paired plot design was adopted with a plot size of 5 × 4 m. The crop was given the recommended dosages of fertilizers containing 40 kg N, 40 kg P and 40 kg K/ha as basal dressing and top dressed with 40 N/ha, 45 days after sowing and protected from insects by foliar application of carbaryl 0.1% at 500 l/ha. The nematodes were extracted from soil samples by a combination of sieving and Baermann funnel technique. The increase in yield due to soil fumigation was considered as the avoidable yield loss.

The mean soil population of *R. reniformis* in the non-fumigated plots at the time of sowing was 229 and 273 nematodes/200 g of soil in 1978 and 1979 trials respectively. Plant-parasite nematodes were

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not detected in fumigated plots at time of sowing. The avoidable yield loss of seed cotton was 17.4% in the first trial and 9.5% in the second trial (Table I).

Table I - Avoidable yield loss due to *Rotylenchulus reniformis* in cotton cv. *Suvin*.

Year	Treatment	Nematode population/ 200 g soil		Yield seed cotton/plot (kg)	Avoidable yield loss (%)
		At sowing	At maturity (b)		
1978 Rabi (a)	Fumigated	0	596	2.43*	17.4
	Non-fumigated	229	234	2.07	—
1979 Rabi	Fumigated	0	330	1.84*	9.5
	Non-fumigated	273	261	1.68	—

(a) Rabi: September-January; (b) 150 days after sowing.

\* statistically different from the non-fumigated for P = 0.05.

#### L I T E R A T U R E C I T E D

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