Yield parameters

Besides above effects, yield parameters such as the number of flowers per plant, number of pods per plant, number of seeds per pod and seed yield were more in growth regulators treated plants as compared to control. Results on seed germination showed that the application of growth regulators did not hinder the germination of resulting seeds in respective crops.

29 February 1988; Revised 10 May 1988

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COLLETOTRICHUM FOLIAR INFECTIONS ON *LEUCAENA LEUCOCEPHALA* IN KERALA, INDIA

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Leucaena leucocephala (Lam) de Wit, a multipurpose fast growing tree species, is being raised extensively in Kerala. Foliar infection on 3-year-old trees planted in KFRI campus was observed during May–July 1985 and 1986. Usually, infection occurred on lower branches on the adaxial surface of the leaf rachis. Under high humidity, the lesions spread to the entire length of the rachis and also to the petiole, midrib and veins of the leaflets. However, the lesions did not spread to the leaf lamina. Infected leaves showed pale yellow discoloration and flaccidity and defoliated within a few days of infection leaving behind the discoloured leaf rachii alone. Isolations made from the infected tissues consistently yielded *Colletotrichum crassipes* (Speg.) V. Arx (IMI 302782).

Colletotrichum crassipes

Colony on PDA tast growing, greyish brown to black, with dark greyish brown aerial mycelium; colony reverse bluish black. Setae present. Conidia hyaline to pale brown, straight, thick-walled, smooth, obtuse at the apices, 17.5–31.5 × 6.3–7.2 μm.

Another foliar infection observed during February–April 1986 caused lesions on the leaves in lower branches and also on leaves of ca. one-year-old naturally regenerated seedlings in the trial plot. Infection appeared as greyish brown circular to oval lesions, with a greyish white centre 1–3 per leaflets measuring 2–3 mm in dia. Under high humidity, fungal spore mass was observed at the centre of the lesions. In the case of severe infection, yellowing and falling off of the leaflets occurred. Isolations from the leaf lesions yielded *Colletotrichum gloeosporioides* (Penz.) Sacc. (IMI 302785).

Colletotrichum gloeosporioides

Colony on PDA fast growing, greyish white with abundant aerial mycelium. Conidia hyaline, straight to slightly bent, aseptate, guttulate, obtuse at the apices, 11–16 × 2.2–3 μm.

Pathogenicity of *C. crassipes* and *C. gloeosporioides* was tested by spraying the spore suspensions of the respective fungal isolates to the intact leaves separately. High humidity was maintained by covering the inoculated leaves by moistened polybags. Disease symptoms developed after four days of incubation. The pathogens were reisolated from the respective infected tissues and the pathogenicity confirmed.

So far, only a few diseases have been recorded on *L. leucocephala*[1–13]. *Sclerotium rolfsii*[6], *Phomopsis leucaenae*[10] and *Fusarium semitectum*[9] are the important pathogens recorded from India. *C. crassipes*, a weak pathogen recorded from different crops[11] and *C. gloeosporioides*, a ubiquitous pathogen causing foliar infections on various forestry crops[14] are new records on *L. leucocephala*.

The author is grateful to Ms. C. Davis, CAB International, Kew, England for identification of *Colletotrichum* spp. and to Dr J. K. Sharma, Scientist-in-charge, Pathology Division, for encouragement.

8 April 1988; Revised 13 June 1988

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AN INDUCED SHELL MUTANT IN GROUNDNUT (*ARACHIS HYPOGAEA* L.)

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Rust disease caused by *Puccinia arachidis* Speg., leaf miner (*Aproaerema modicella* Dev.) and drought are the major biotic and abiotic stresses limiting groundnut productivity in India. NCAC 17090, a Valencia Bunch genotype has been reported to be resistant to rust[1] and drought[2] and tolerant to leaf miner[2] and is frequently used as a donor for infusing resistance to these stresses since it has an acceptable testa colour (rose). However, its shell is thick, highly reticulated which makes it a poor sheller and unattractive. Hence, with a view to improving the shell characteristic of NCAC 17090 a study was taken up.

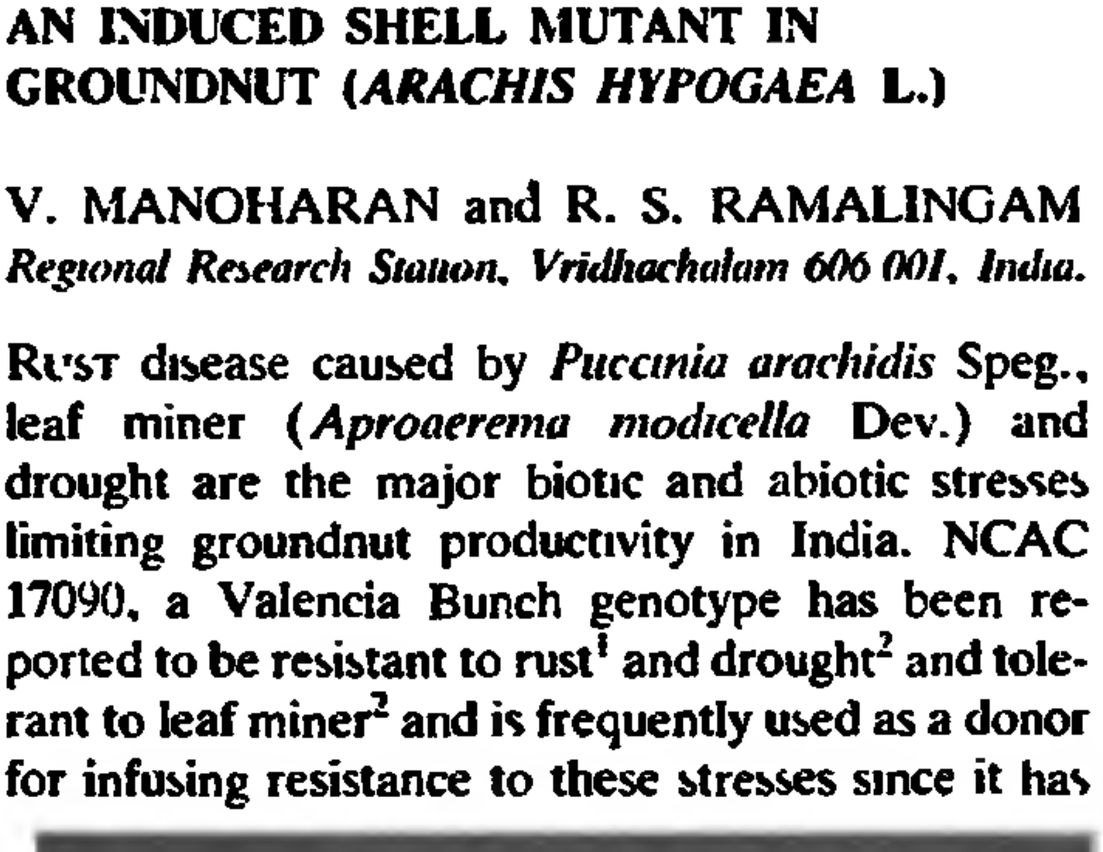

Figure 1.

Table 1 *Shelling (%) and reaction to biotic stresses of the mutants*

Mutants/control	Shelling %	Reaction to rust/leaf miner (1–9 scale)	
		Rust	Leaf miner
Smooth shelled	72.0	2	4
	72.5	3	4
	71.5	2	4
Control	68.0	2	4

The kernels of NCAC 17090 were treated with 25, 50 and 75 krad of gamma rays. For each dose 60 seeds were treated and sown along with untreated control in three replications during summer 1987. The M_2 generation was raised on M_1 plant basis. For each M_1, 20 seeds were sown in a progeny line and the remaining seeds, if any, were bulked dose-wise and raised as bulk in *Kharif* 1987.

Among the progenies, one family (NCAC 17090–25 KR–14) in 25 krad treatment segregated for shell characters, i.e. 15 with normal types and three variants. The variants in the progeny exhibited smooth shell and small pods (figure 1) while retaining other features of untreated control. These three mutants were advanced to M_3 generation and they were found to breed true. In order to study the genetics of these mutants studies are in progress to effect crosses.

The breeding behaviour of the mutants in respect of shell character and reaction to rust[3] and leaf miner[4] was recorded according to the methods reported earlier. The shelling percentage of the plant progenies was higher when compared to that of the parents and they were equally resistant to rust and leaf miner as their parents (table 1).

11 March 1988; Revised 10 May 1988

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