

CHILLI NARROW LEAF DISORDER AND ITS
SIMILARITIES TO FRENCHING OF TOBACCO

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Narrow leaf disorder of chilli in the dry zone has attracted much attention recently. The disorder is characterized by interveinal chlorosis of young leaves followed by acute retardation of normal leaf development, especially of the lamina. In severe cases complete loss of apical dominance followed by stimulation of axillary buds leads to stunted bushy plants. In some instances the affected plants recover spontaneously, the lower leaves remaining narrow while the upper leaves show normal development. The plants growing under shades are often less affected by the disease.

Chilli plants showing symptoms of disorder recovered and grew normally when removed from the site and transplanted in an unaffected field. Seedlings raised in pots containing soils from affected areas developed characteristic symptoms of the disorder within two to three weeks after germination while those raised in soils from disease-free areas rarely developed the symptoms. These observations suggested that the chilli disorder was due to 'soil sickness'.

Chilli seedlings raised in pots containing solarized, fumigated or autoclaved 'sick soil' did not develop the disorder symptoms. Specific nematicides however, failed to prevent the disorder. Addition of quintozene to the 'sick soil' aggravated the disease condition. Seedlings showing typical symptoms of the disorder recovered and produced normal leaves when supplied with any of the following nitrogenous fertilizers at the rate of 0.1% (w/w): (a) KNO_3 , (b) NaNO_3 , (c) $(\text{NH}_4)_2\text{SO}_4$ and (d) urea.

Tobacco seedlings raised in the 'sick soil' developed symptoms typical of the disease known as 'frenching' of tobacco. Frenching is a physiological disorder believed to be caused by toxins produced by soil inhabiting bacteria. Field observations as well as the results obtained from green-house experiments indicate that chilli narrow leaf disorder is very similar to, but not the same as frenching of tobacco.