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Two Medicinal Plants, *Gynandropsis pentaphylla* and *Trianthema portulacastrum*, as additional hosts of certain Plant Viruses.

By

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Gynandropsis pentaphylla, DC. and *Trianthema portulacastrum* L., common weeds with medicinal properties, are abundant throughout the warmer parts of India. The leaf sap of *G. pentaphylla* is a remedy for otalgia and is used as an antidote to snake-bite and scorpion sting. *T. portulacastrum* is beneficial in swelling of body caused by disorders of liver or kidney. VERMA et al. 1972 reported *G. pentaphylla* and *T. portulacastrum* as unrecorded hosts of 'SK' strain of tobacco mosaic virus (TMV). A perusal of literature indicates that these two plant species have not been demonstrated as hosts of any other viruses. It was, therefore, thought worthwhile to investigate the possibility of employing these indicators for other viruses.

Separate sets of young glasshouse raised, vigorously growing seedlings were mechanically inoculated with commonly occurring eight viruses, maintained in this laboratory on their principal and on collateral hosts. For inoculations, conventional method of macerating infected leaf material in a mortar and rubbing the test seedlings by means of a cotton wool swab, was employed. Plants were maintained on glasshouse benches at a temperature of 29—38° C. Results are presented in the Table.

It is interesting to note that out of eight viruses inoculated only two viz. Chilli mosaic virus and mosaic disease of *Solanum khasianum* (THAKUR & SASTRY 1971) could infect *G. pentaphylla* whereas *T. portulacastrum* could be infected by three of the viruses tested (Table). Chilli mosaic virus could infect both the hosts whereas soybean mosaic virus could infect only *T. portulacastrum*. Tobacco mosaic virus 'CPO' strain (MATHUR et al. 1966) could infect *T. portulacastrum* but not *G. pentaphylla* whereas 'pp' strain of TMV could infect none. *T. portulacastrum*, therefore, seems to be a differential host for these two strains of tobacco mosaic virus. Brinjal mosaic virus and 'SK' strain of TMV are the only viruses producing localised necrotic lesions on

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T. portulacastrum (VERMA & SINGH 1973). It would be no doubt interesting to test the infectivity of other viruses on these plant species which can be grown readily.

Table
Host reactions

Virus	<i>G. pentaphylla</i>	<i>T. portulacastrum</i>	Incubation period in days (Temp. 29—38°C)
Bean common mosaic virus (MOSES 1968)	×	×	—
Brinjal mosaic virus (SETH et al. 1967)	×	Local lesions	** 8—10
Chilli mosaic virus (MISHRA 1963)	Mild mottling	Mild mottling	*** 10—15; 20—25
Cowpea mosaic virus (CHENULU et al. 1968)	×	×	—
Cucumber mosaic virus (Type strain)	×	×	—
Mosaic of <i>S. khasianum</i> (THAKUR & SASTRY 1971)	Mild mottling	×	* 15—20
Soybean mosaic virus (unidentified strain)	×	Mild mottling	** 25—30
Tobacco mosaic virus -pp strain (PHATAK & VERMA 1967)	×	×	—
Tobacco mosaic virus — 'CPO' strain (MATHUR et al. 1966)	×	Mild mottling	* 15—20

× = no infection

— = not tested

* = Incubation period for *G. pentaphylla*

** = Incubation period for *T. portulacastrum*

*** = Different incubation periods for *G. pentaphylla* and *T. portulacastrum*.

A c k n o w l e d g e m e n t s

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S u m m a r y

Out of eight viruses tested, *G. pentaphylla* has been found to be susceptible to chilli mosaic and mosaic of *S. khasianum* while *T. portulacastrum* to mosaic diseases of brinjal, chilli, soybean and tobacco (CPO strain).

Z u s a m m e n f a s s u n g

Acht Viruskrankheiten wurden bezüglich ihrer Übertragbarkeit auf *Gynandropsis pentaphylla* und *Trianthema portulacastrum* untersucht. *G. pentaphylla* wird nur vom „Chilli mosaik“ und „S. khasianum mosaik“ befallen. *T. portulacastrum* erwies sich hingegen für „Brinjal mosaik“, „Chilli mosaik“, „Soybean mosaik“ und „Tabak mosaik virus (CPO strain)“ als empfänglich.

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