VARIETAL REACTION OF COWPEA TO BEAN COMMON MOSAIC VIRUS

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BEAN common mosaic virus was first reported in Russia[1] on a variety of *Phaseolus vulgaris* and in India[2] on cowpea. As cowpea is gaining importance as a major pulse/vegetable crop, introduction of new improved varieties added impetus to its cultivation in recent years. Relative susceptibility of these varieties is reported in this note.

Forty-two cultivars of cowpea were screened for their resistance or susceptibility to infection by bean common mosaic virus. Screening was done by mechanical inoculations under glasshouse and natural conditions in the field. The seeds were procured from the Department of Botany, Rajasthan College of Agriculture, Udaipur. The cultivars were grown in randomized-block-design with two replications in earthen pots (15 cm dia). Urea at the rate of 2 g/pot was incorporated after sowing. Mechanical inoculations were made twice when the crop was 10 and 15 days old and the plants were observed regularly for the symptom expression. Back-indexing was done on *Chenopodium amaranticolor* 20 days after the second inoculation of all the cultivars.

For field experiments the cultivars were also grown in replicated randomized-block-design with two replications in plots of 3×1.5 M size[3]. The crop was planted in rows 50 cm apart with plant-to-plant distance maintained at 20 cm. In each cultivar, central line was planted with susceptible cultivar, Jaipur Local Collection-A. Urea at the rate of 1 kg/100 sq. metres was applied one week after sowing. Mechanical inoculations of the virus were made as above. Back-indexing of all varieties was done on *C. amaranticolor* 20 days after the second inoculation. The varieties which remained uninfected even after inoculating twice and which did not produce local lesions after back-indexing on *C. amaranticolor* were considered as resistant[4, 5].

Twelve cultivars were immune or highly resistant to infection, 14 were highly susceptible, 16 were susceptible and none was symptomless carrier of the virus. Among the 42 cultivars of cowpea tested CG-28, Chardic, EC-578, GRGL.162, GP.JC-5, GP.GWC, GP.RC-9, KC-18, JLC-E, JLC-H, Ranigarh and TEDC-4A were highly resistant to bean common mosaic virus. None of the cultivars produced systemic symptoms within 6–16 days after inoculation (table 1).

In these studies, there were no local symptoms. All the cultivars listed above produced systemic symptoms and virus was recovered from them in back indexing. The cultivars at Sl. Nos 2, 3, 5, 7, 9, 12–16, 21, 23, 27 and 28 were highly susceptible to viurs infection and produced systemic symptoms within 6–13 days after inoculation. Cultivars at serial numbers 1, 4, 6, 8, 10, 11, 17, 18–20, 22, 24–26, 29 and 30 were susceptible to virus infection and produced systemic symptoms within 7–16 days after inoculation. The highly resistant cultivars can be used for cultivation

Table 1 *Evaluation of cowpea cultivars to bean common mosaic virus by mechanical inoculation*

Sl. No.	Cultivars	Inoculation period (days)
1.	C-20	10–15
2.	C-30	9–13
3.	C-152	10–13
4.	CG-69	9–14
5.	CP-142	9–11
6.	Culture-1	9–15
7.	Dhoida	10–12
8.	EC-4217	8–16
9.	GPG-5	8–13
10.	GPG-17	7–14
11.	GPGC-10	9–15
12.	GP-Irangray	8–12
13.	GP No. 1476	8–13
14.	GP No. 5269	7–11
15.	GP-Sel. 48	7–12
16.	J.C. PWC	7–12
17.	JLC-A	10–14
18.	JLC-10 RZ	9–14
19.	No. 123	8–16
20.	No. 528	9–12
21.	No. H-173	7–13
22.	Pusa-1	10–12
23.	Pusa-2	8–13
24.	Pusa-4	10–14
25.	RC-215	7–14
26.	RCM-2	6– 8
27.	RS-9	6–10
28.	T-20	8–11
29.	TEDC-H	9–13
30.	TEDC-I	9–15

wherever the virus occurs and can be successfully used in breeding programme.

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**Original not seen.

NEWS

MICROBES ARE MORE THAN GERMS

. . . "Microbes, often studied as disease 'germs,' are not generally considered in context as normal components of ecosystems. For one thing, their ubiquity and density tend to be underestimated. Although the notion of species as borrowed from the animal world is probably invalid for microbes, we are talking about over 200,000 different types of organisms. . . . But recent work by a growing number of scientists who begin to call themselves microbial ecologists . . . is starting to change this picture. Microbial communities, which offer enormous potential for study, have lately been recognized as sources of crucial information about the biosphere, including the atmosphere and ancient sediments. At least some microbial communities are tightly organized and demonstrate phenomena well known in ecology, such as dominant species and succession. Indeed, microbial communities can provide us with unique live systems that can be used to test general concepts about how natural populations are organized. They occupy little volume and grow rapidly and are thus far more manageable than, for example, forest or desert communities. Furthermore, the complexity of every community is augmented by its underlying, surrounding, and penetrating microbial communities. For these reasons, microbial communities lacking plants and animals are in principle less complex and more amenable to study than communities of larger organisms." [(Lynn Margulis *et al* (Boston U.) in *Bioscience* 36(3): 160–70, Mar. 86, (American Institute of Biological Sciences). Reproduced with permission from Press Digest, *Current Contents*®, No. 20, May 19, 1986, p. 15, (Published by the Institute for Scientific Information®, Philadelphia, PA, USA)].

GROWING REPLACEMENT SKIN

Sheets of skin cells on a dressing are placed in transport chambers ready to be applied to raw wounds at the Birmingham Accident Hospital, which has one of the largest burns units in Europe. The hospital's skin culture laboratory is among the few in the world able to grow replacement human skin.

In the past, burn injuries have been treated by shaving the superficial layer of normal skin in an unaffected area of the body and applying it to the raw injured area. The "donor area" from where grafts have been taken normally heals within two weeks, but the patient is often subject to pain because of exposed raw nerve ends.

With the skin culture technique, only a small area of skin, no larger than a postage stamp, is taken from the patient. This small piece of skin is then cut into even smaller pieces and live cells are extracted by the enzyme trypsin. Further treatment allows these live cells to develop into larger sheets of skin cells. (*Spectrum*, 197, p. 12, 1986; British Science News, R. P. Nash, British High Commission, New Delhi 110 028).