

An Apparently New Virus from White Clover Infectious  
to Beans and Other Legumes

W. J. Zaumeyer  
Crops Research Division, ARS, U.S.D.A.  
Beltsville, Maryland

In a search for isolates of white clover mosaic virus, an apparently new virus infectious to beans was isolated from white clover plants whose leaflets showed extremely mild mottling. When mechanically inoculated to beans, the virus produced large spreading local lesions. No systemic infection was noted on any inoculated variety except Dark Red Kidney on which stem and leaf necrosis were produced but no local infection. All varieties inoculated were susceptible. The virus also infected tepary beans (Phaseolus acutifolius latifolius), mung bean (P. aureus), scarlet runner bean (P. coccineus), lima bean (P. lunatus), soybean (Glycine max), broad bean (Vicia faba), cowpea (Vigna sinensis), snapdragon (Antirrhinum majus), pepper (Capsicum frutescens), Chenopodium amaranticolor, cucumber (Cucumis sativus), Gomphrena globosa, tobacco (Nicotiana glutinosa and N. tabacum), and petunia (Petunia hybridia). The studies on this virus are not completed, but from its host range, it may be a new strain of the alfalfa mosaic virus.

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Idachief and Idagem  
Curly Top and Mosaic Resistant Snap Bean

Leslie L. Dean  
University of Idaho, Moscow, Idaho

Snap bean varieties vary widely in tolerance to the curly top virus, but none of those presently grown extensively are sufficiently tolerant to escape more than a moderate epiphytotic, and most snap bean varieties succumb very readily to curly top. Several curly top resistant snap beans have been introduced (Idaho Bountiful, Golden Gem, Yakima, and Idelight) but have had little commercial acceptance to date.

In 1966 seed of a number of white-seeded curly top and mosaic resistant snap beans were distributed by the University of Idaho among interested commercial seedsmen for seed increase, with the agreement that should any line or lines continue to show commercial potential that they would be officially released and named. Two of these lines have appeared to be suitable for commercial processing and have been named. The breeding line tested under the experimental designation XIda 121-13, including the sub-lines XIda 121-13-1 and XIda 121-13-2, has been named IDACHIEF. The breeding line tested under the experimental designation XIda 3919, including the sub-selection XIda 3919-1, has been named IDAGEM. Both varieties are described in an Idaho A.E.S. Bulletin which should be received from the printer in the very near future.

Both Idachief and Idagem are resistant to the curly top virus and to the Type and the A (also referred to as NY-15) strains of common bean-mosaic (Bean

Common Mosaic). Idachief appears to have moderate tolerance to powdery mildew (Erysiphe polygoni DC) and to some, but not all, races of rust (Uromyces phaseoli typica Arth.). Idagem has been observed to remain relatively free from infestation and damage of the 2-spotted mite both in Idaho and in the Columbia Basin of Washington, when adjacent breeding lines and varieties were heavily infested and damaged. Details of pedigree, plant habit, and pod quality can be obtained from the descriptive bulletin.

Any canner who wishes to pack a small sieve bean of medium green color and high quality should consider Idachief for trial. It has the plant habit, yield potential, and the quality characteristics necessary for successful canner production. In an area where curly top can be a limiting factor in production, Idachief can be grown without danger of loss due to the disease. It will produce a raw product which, if harvested at proper maturity, is necessary for a high quality canned product. It is well adapted to mechanical harvest.

Idagem when processed will produce a canned or frozen product of somewhat darker green color than Idachief and in most situations may yield somewhat more than Idachief. Idagem will produce 5-sieve pods in prime stage. The plant habit and location of the pods on the plant are not as desirable as the Tendercrop types, but are equally as good as many other processing varieties. This variety can be mechanically harvested very satisfactorily.

Resistance to curly top makes Idachief and Idagem doubly attractive to processors producing crops in areas where the disease is a threat.

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#### Persistent-Green Color and Green Seed Coat in Snap Beans

Leslie L. Dean  
University of Idaho, Moscow, Idaho

Progress made toward transferring the persistent-green color and green seed-coat characteristic of the French cultivar "Flageolet a Grain Vert" into snap beans suitable for processing has been discussed (HortScience, Autumn 1968), and inheritance data has been published (Jour. Heredity 59:243-244) by Honma, et al. It was anticipated that the persistent-green color would be of importance in snap beans for processing especially in regard to improved uniformity and intensity of the color of the processed product.

Persistent-green color has been incorporated into several curly top and common bean-mosaic resistant snap bean lines. Cooperative observation and processing trials indicate good adaptability and commercial potential for several such lines.

Seed of XIda 69-3, a persistent-green type, was distributed to interested commercial seedsmen for seed increase in 1968. Seed should now be available for trial plots from these sources, or can be supplied in limited quantity from my seed stock.

Seed of the persistent-green, curly top and mosaic resistant line XIda 121-15-3 will be distributed to seedsmen for initial commercial seed increase