

STUDIES ON SOIL COMPACTION WITH REGARD  
TO FUSARIUM ROOT ROT OF BEANS

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Work continued on loosening the seed bed as a means of counteracting Fusarium root. To reduce the draft requirements and number of tractor operations, small shanks which ripped the plowed layer only (to a depth of 10-11") were placed in front of each planter. In some plots 4 lb/acre of Benlate or TBZ were applied in a band at the bottom of each shank. Controls were 1) subsoiling with large subsoiler chisels to a depth of 18-20", and 2) no shanking. Although early rooting was promoted by all shanking treatments, only deep subsoiling significantly increased dry bean yields.

A technique was developed for the uniform compaction of soil in tubes at known bulk densities. Studies are in progress on the effects of the Fusarium, soil temperature, and soil moisture on the ability of roots of different bean varieties to penetrate soil of various densities.

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RECIPROCAL EXPOSURE OF BEANS AND PEAS TO  
ROOT PATHOGENS OF BOTH CROPS

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Both beans and peas were planted in old bean land and old pea land, infested by Fusarium, Pythium ultimum, Thielaviopsis basicola, and Rhizoctonia, and on land where neither crop had been grown before. Beans were reduced in yield by root rot only in the old bean field, where Fusarium solani f. sp. phaseoli was present, and peas, only in the old pea field, where F. solani f. sp. pisi was present, even though nearly all roots were infected by all four pathogens in the old bean and pea fields. These results indicate that, under the field conditions at Prosser, in 1971, other prevalent root pathogens did not affect yield of beans or peas unless the host-specific form of Fusarium solani was present.

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