BREEDING RUSSET POTATOES IN WISCONSIN

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Our breeding objectives have been revised and, as a consequence of industry requirements, the work on russet lines has been intensified. The main goal is to obtain an early russet variety for fresh market, extendable to a dual purpose potato, with medium quality for frying and baking. A secondary goal was added in 1998: resistance to late blight A2-strain. In order to respond quickly to the Wisconsin industry needs, efforts were intensified on crosses from a substantially enlarged germplasm to accelerate the process of selection of russet lines through the breeding scheme and to more carefully test the older W russet lines. A new pool of russet parents was built from a group of promising lines from the Idaho, Oregon, Colorado, North Dakota, Minnesota and Maryland programs, after their field and crossing performances had been evaluated. Of the total number of parents used in 1997, 23\% were russets involved in 33\% of the total number of combinations. A breeding difficulty, specific to russets, is the fact that the inheritance of skin netting is controlled by three genes in addition to dosage effects for the darkness of the skin. The phenotypic expression of the netting depends very much on the soil texture, which requires testing the russet selections in different soil types. Of the total number of entries in our advanced replicated field trials, 15\% were russet lines. Lines W1151rus (Norkotah type) and W1348rus (Burbank type) have been entered in the North Central Regional Trial. In the future, if required, a breeding objective for creating medium-early varieties for French fries, using the expertise and germplasm of our program for good fry color after cold storage can be developed. The biggest challenge in this case will be breaking the correlation between lateness and specific gravity.

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