

Field and laboratory evaluation of resistance to pre-harvest sprouting in New Zealand wheat cultivars and introduced germplasm

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As a conscious objective in wheat breeding in New Zealand to reduce crop loss from pre-harvest sprouting, the proportion of red-grained cultivars grown in New Zealand has increased from about 20% in the 1950's to over 90% in the 1980's. Though not all red-grained cultivars possess a high level of sprouting resistance, they are commonly superior to white-grained wheats in this regard. Field and laboratory testing over a number of seasons has assessed New Zealand cultivars for this character. The currently predominant cultivar, Otane, is only moderately resistant to sprouting and further improvement in this character is sought.

Cooperation in an International testing project for sprouting resistance has made available to New Zealand wheat breeders white-grained stocks, identified in several overseas programmes, that display good levels of sprouting resistance under local conditions. As a proportion of white wheats is sought by local mills, a research contract between the New Zealand Miller's Association and Crop and Food Research has been set up to support breeding projects in both autumn-sown and spring type wheats to produce white-grained cultivars with good sprouting resistance.