



# Grains Research & Development Corporation

22 July 2003

## 'SUPER' STRESS-TOLERANT WHEATS OUTCOME OF NEW ALLIANCE

An international crop breeding alliance of major importance to Australia's grain industry was advanced this week with the visit to this country by the Director-General of the International Maize and Wheat Improvement Centre (CIMMYT).

CIMMYT's Dr Masa Iwanaga, accompanied by Executive Research Officer Dr Peter Ninnes will be meeting with managers of the Grains Research and Development Corporation (GRDC) to map out investment and management details of the alliance.

This follows a visit earlier this year to CIMMYT's headquarters in Mexico by GRDC Chairman Terry Enright and GRDC Executive Manager Program Operations, John Harvey.

Mr Enright, a WA graingrower, said the strategic alliance should provide major benefits for the Australian grain industry. "We are working with a promising range of new wheat varieties being tested in Mexico that are drought and frost tolerant and disease resistant. The alliance should also open significant new training opportunities for Australian scientists at CIMMYT."

CIMMYT is one of 16 public and internationally-funded research and training 'future harvest centres' that develop genetic plant material (germplasm) for a wide range of crops and provide breeding stock to agricultural institutions worldwide. The centres encourage collaborative exchange for the benefit of all countries.

A recent report estimates that for a total annual investment of \$US100 - 150 million, the international wheat breeding system produces annual benefits in excess of \$US1.6 billion. Mr Enright said Australia grain growers have benefited considerably over the years from the internationally-funded scientific research at CIMMYT.

"For example, CIMMYT's development of semi-dwarf wheat varieties not only led to the so-called 'Green Revolution' in developing countries but also allowed our industry to significantly increase wheat yields."

Of particular interest now is CIMMYT's work on developing 'synthetic wheats' that have built-in resistance to disease and environmental stresses. Commercial varieties are crossed with 'wild relatives' – grasses in the case of wheat – to come up with a wheat line with the desired traits.

Mr Harvey said that a high priority under the alliance is the development of varieties resistant to Karnal Bunt, a seedborne disease of wheat which can have a major impact on Australia's export market. The disease is not in this country at present but development has progressed to a stage where Australian breeders should have resistant varieties available in the near term.

"We are also developing synthetic wheat crosses with Australian commercial varieties that are able to withstand environmental stresses – drought, heat and frost. The aim is a suite of 'super' stress tolerant wheats adapted to Australian growing conditions," he said.

Work is also progressing on multiple root-disease resistant varieties, a first for Australia where work has traditionally focused on defending against one disease at a time within varieties.

The new strategic initiative strengthens Australia's collaboration with CIMMYT and develops a management framework for collaboration.

"Up till now, the relationship between the Australian wheat breeding programs and CIMMYT was through individual relationships at the researcher or plant breeder level," said Mr Enright.

"We are working on a more focused relationship, where the GRDC will invest in certain programs under joint management that will benefit not only Australian growers but also farmers in developing countries."

Further information:                    John Harvey, GRDC or Maureen Cribb, GRDC  
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Please note: Dr Masa Iwanaga is also available for interview before he leaves Australia on Saturday, 26 July, by contacting Cathy Reade at the ATSE Crawford Fund on 0413 575 934.