



IAEA

Atoms for Peace: The First Half Century

1957-2007

Developing drought resistant wheat for Kenya's drylands

The challenge...

Eastern Africa experiences periodic food shortages which are partly due to intermittent, but severe, drought. In Kenya, semi-arid lands represent 83% of the total land area (56.9 million ha). Although some 300,000 ha of this area is arable, it is not fully utilized due to unfavourable weather patterns and a lack of drought-resistant wheat varieties.

The project...

The projects set out to develop improved wheat varieties which would be tolerant of drought and which could utilize limited rainfall efficiently. In addition, the wheat was to have a moderate resistance to stem rust and yellow rust, a good yield and good baking quality.

Various methods were used to develop drought tolerant wheat varieties, including mutation breeding techniques. A new mutant variety, Njoro BW1, has been released, and is currently being cultivated on 10,000 ha. The variety has been well accepted by farmers in the dryland areas, including Narok, Naivasha, Katumani and Mogotio, and demand for the new crop is growing steadily. Breeding for drought tolerance has improved the status of wheat production in these areas, and increased adaptability. The new wheat variety is a very valuable asset in improving the economic status of the people in the semi-arid regions of Kenya.

Quantifiable data...

Six mutant selections were included in a National Dryland Performance Trial in four sites in Kenya in 1999 and 2000. In most sites, the mutants outyielded the parent plant by more than 0.8 tons/ha. The mutant variety selected for release, KM14, was released in 2001 as Njoro BW1. Tests showed that it was better or equal to the best check in all the test sites.



KEN/5/024: Crop Improvement and Management through Application of Nuclear and Biotechnology Techniques. Total disbursements 2004 - 2007: \$237,000

RAF/5/050: Increasing Production of Nutritious Food Through Mutation Breeding and Biotechnology, 2001 - 2006. Assistance provided to Kenya: approx. \$100,000

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