

## Episodes of Citrus Breeding

Takeshi Kuniga

Department of Citrus Research Okitsu, Shizuoka Laboratory of Genetic Resources, National Institute of Fruit Tree Science

485-6, Shimizu-Okitsunakamachi, Shizuoka 424-0292, Japan

### Summary

Citrus breeding has developing by using the monoembryonic cultivar 'Kiyomi' tangor in Japan. 'Kiyomi' was created at the Okitsu branch in 1979. 'Kiyomi' offspring inherit genes from the father and mother citrus parents easily. Those offspring are many and include 'Shinanui', 'Harumi' and 'Setoka'. The timetable of citrus breeding was shortened by using the 'Kiyomi' tangor and top-grafting method. These offspring express the traits of seedlessness, low acidity, high sugar content and easy peelability.

The next goal is to produce plants that are early maturing, tolerant to stresses, for example pathogens, and easy to cultivate.

New methods of breeding have been developed recently. Many of these use biotechnology, ex. protoplast fusion, and the transgenic method using *Agrobacterium* and *particle gun*. The application of biotechnology is useful for determining cultivar differences.

In the future, the demands on citrus breeding will be changed by social conditions, including cost cutting, the pursuit of health and personal entertainment. We must adjust the purpose of citrus breeding to meet those needs.