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Development and Characteristics of New Maize Parental Line "Na 50"

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Summary

A new maize parental line, "Na50", was developed at the National Grassland Research Institute(Present: National Institute of Livestock and Grassland Science). "Na50" was registered as "Nourin Kou Oya No.43 of Maize" by the Ministry of Agriculture, Forestry and Fisheries of Japan in 1997.

"Na50" was developed from the improved population, JF1C1 which was synthesized from 20 varieties selected among more than 200 varieties belonging to Caribben flint and improved by a selection and a crossing. The main breeding objectives included the resistance to Southern leaf blight (*Cochiobolus heterostrophus*), Smut (*Ustilago maydis*) and lodging followed by the resistance to Sheath blight (*Rhizoctonia solani*). Selection and selfing were continuously carried out during five generations.

The silking time of "Na50" is twelve days and nine days later than "Mo17Ht" and "H84", respectively and "Na50" is classified into a late - very late group in Honshu, Japan. The resistance to southern leaf blight is medium and that to sheath blight is rather weak. The lodging resistance of "Na50" is stronger than that of "Mo17Ht" and almost similar to that of "H84". "Na50" has a nearly equal stalk length to "Mo17Ht" and semi-upright leaves, and the ear height is as high as "H84". The stem is a little thicker than both inbred lines. "Na50" has a longer leaf set on the node of first ear than both inbred lines. The ear is medium in length and diameter, and has almost 12 rows. The pollen shedding is rather well, but the seed yield is poor. "Na50" shows high combining ability with inbred lines derived from an American dent group. A new single cross hybrid cultivar, "Yumesodachi", was developed at the Kyushu National Agricultural Experiment Station (Present: National Agricultural Research Center for Kyushu Okinawa Region), using "Na50" as the pollen parent.

Key words: Maize, Inbred line, Flint, Lodging resistance, Combining ability