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Breeding of a flint maize inbred line "Ho49" and its Characteristics

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Summary

A new inbred line, "Ho49", was developed as a parental line of silage maize. "Ho49" was registered as "Maize Norin Kou Oya 54" by the Japanese Ministry of Agriculture, Forestry and Fisheries in 2002.

Ho49 was developed from the single cross Ho4 × N85. Inbred Ho4 is derived from the French hybrid INRA258, and inbred N85 is derived from Iwanai Zairai A, a local variety of Hokkaido. Cross pollination of the hybrid was performed in 1984, and S_0 seeds were obtained by sib-crossing among the F_1 plants in 1985. Beginning with the S_0 line and continuing through to the S_6 generation, the inbred line was developed by selection and self-pollination in an ear-to-row system. Selection was made for improving the resistance to lodging and northern corn leaf blight (*Setosphaeria turcica*) and for improving ear performance.

Ho49 is classified into the medium maturity group in Hokkaido. Its level of lodging resistance is high, and it also has relatively high levels of resistance to northern corn leaf blight and southern corn leaf blight (*Cochliobolus heterostrophus*). Though Ho49 is susceptible to common smut (*Ustilago maydis*), infection on ears is rare. The early growth of Ho49 is good. Ho49 has a relatively long and thin stalk and medium ear height and bears tillers with low frequency. The ear is somewhat short and thin and has nearly 12 rows. The seed yield of Ho49 is less than those of dent inbred lines belonging to the same maturity group. The pollen shedding is medium or somewhat high. Ho49 shows high combining ability with dent inbred lines. A new single cross hybrid cultivar, "Ohzora", was developed using Ho49 as a pollen parent.

Key words: maize, inbred line, flint, lodging resistance, northern corn leaf blight, combining ability

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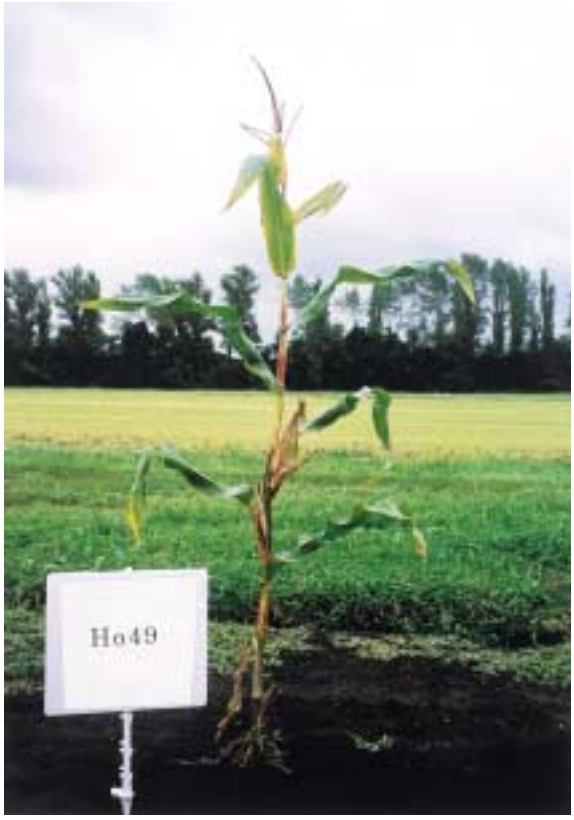

写真１　「Ｈｏ49」の草姿
(2000年9月9日撮影)

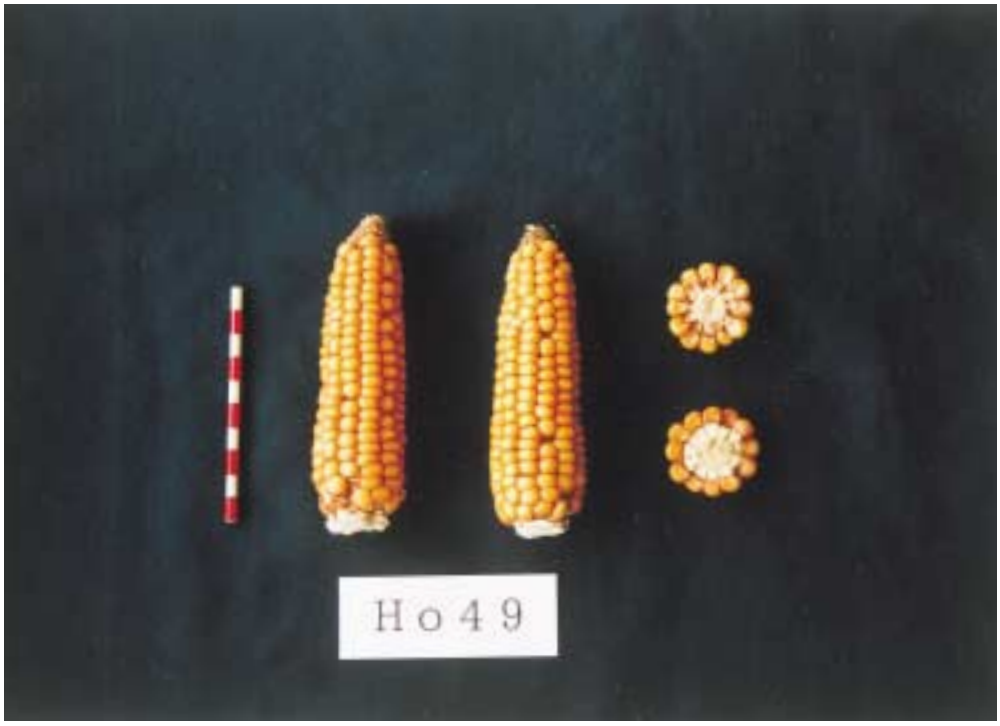

写真２　「Ho 49」の雌穂および粒
(2001年1月18日撮影)