

Breeding of a flint maize inbred line, 'Ho90', and its characteristics

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Summary

'Ho90' is a newly developed inbred line of silage maize.

'Ho90' was developed from 'Raissa × To38', in which 'Raissa' is a hybrid bred by Pioneer Hibred France and 'To38' is an inbred line having the background of local varieties of Hokkaido and belonging to the Northern Flint. Cross pollination between the materials was performed in 1992, and S0 seeds were obtained from sib-crossing among the hybrid plants in 1993. From S0 to S6 generations, inbred line development, selection and self-pollination were repeatedly carried out in the ear-to-row system. Breeding targets during the selection included disease resistance, lodging resistance, early vigor and ear performance.

'Ho90' is classified into the early maturing group in

Hokkaido. It has high resistance to lodging as well as to northern corn leaf blight caused by *Setosphaeria turcica*. Also, its resistance to southern corn leaf blight caused by *Cochliobolus heterostrophus* is slightly high and that to common smut caused by *Ustilago maydis* is high. Its early growth is good, and its morphological characteristics are short and thick stalk and low ear placement. Its ear is cylindrical, and average row number is 12.4. Its seed yield is rather low and degree of pollen shedding is moderate. It shows high combining ability toward both dent lines and European flint lines. A new single-cross hybrid cultivar, "Tachipirika", has 'Ho90' as the pollen parent.

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