

Breeding of Orchardgrass 'Harujiman' and its Characteristics

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Summary

'Harujiman', a new cultivar of orchardgrass (*Dactylis glomerata* L.), was developed by the Hokkaido National Agricultural Experiment Station, Sapporo, Japan (present, National Agricultural Research Center for Hokkaido Region) and was registered as Norin Synthetic No. 9 of orchardgrass by the Ministry of Agriculture, Forestry and Fisheries in 2001.

It was also recommended by the Hokkaido Prefectural Government in 2001.

Source and method of breeding:

'Harujiman' was bred as a synthetic using seven clones, which were selected from a basic breeding population, consisted of 648 superior clones based on winter hardiness, disease resistance and plant vigor. The origin of parental clones was as follows: cl. 1725 and cl. 2664 were derived from Canadian cultivar, 'Kay', cl. 1845 and cl. 1859 from P.I. 308793, the Indian strain and P.I. 315417, the former USSR strain which were introduced under a program of UJNR (U.S. - Japan Co-operative Program in Natural Resources), cl.

1708 from polycrossed progeny of cl. 372, cl. 2407 from polycrossed progeny of high digestible plants and cl. 2919 from Dutch cultivar 'DH-4'.

Characteristics:

'Harujiman' is a medium late flowering cultivar as same as 'Okamidori'. The date of ear emergence was one day later than 'Okamidori' in Hokkaido region (4th June, in average). 'Harujiman' shows same level of winter hardiness as winter hardy cultivar, 'Okamidori'. It has better snow endurance with good plant vigor in early spring than 'Okamidori' in the northern and eastern Hokkaido areas. 'Harujiman' is more resistant to the main leaf diseases such as leaf streak caused by *Scolecotrichum graminis*, scald caused by *Rhynchosporium orthosporum* and stem rust caused by *Puccinia graminis* than 'Okamidori'.

'Harujiman' showed 3% higher dry matter yield than 'Okamidori' at the average for 3 years in Hokkaido region. Its yield at the first crop was 6% higher than 'Okamidori' at the average of all experiments. 'Harujiman' shows higher spring performance than 'Okamidori' due to good recovery from winter injury.

Its grazing adaptability is nearly as good as that of 'Okamidori' and it also keeps good mixture ratio with forage legumes; alfalfa,

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red clover and white clover as 'Okamidori'. Forage quality of 'Harujiman' is almost same as 'Okamidori', however, for 3rd crop 'Harujiman' is slightly superior to 'Okamidori'. Leaf disease resistance of 'Harujiman' seems to contribute to such better forage quality. 'Harujiman' is more prostrate type, wider leaf width and lower plant height than 'Okamidori'. Seed production of 'Harujiman' is similar to 'Okamidori', 750 kg / ha at

Sapporo in three years average.

Adaptation areas of 'Harujiman' are Hokkaido whole area and the northern Tohoku district. It can use for hay-making, silage and grazing.

Breeder seed:

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