

## Breeding of Red Clover 'Natsuyu' and its Characteristics

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### Summary

'Natsuyu', a new diploid variety of red clover (*Trifolium pratense* L.), was developed by the National Agricultural Research Center for Hokkaido Region and Hokkaido Prefectural Konsen Agricultural Experiment Station.

'Natsuyu' was bred by random crossing of four maternal lines that were selected from 44 varieties / lines.

The characteristics of 'Natsuyu' are low competitive ability for timothy and good overwintering ability.

The yield ability for dry matter of 'Natsuyu' was similar that of 'Hokuseki'. In the mixed

sown sward, the yield of timothy with 'Natsuyu' in the third year was 20% higher than that of timothy with 'Hokuseki'. The red clover ratio of 'Natsuyu' was lower than that of 'Hokuseki' and higher than that of 'Kurano'. It seemed that the reasons of the low competitive ability of 'Natsuyu' for timothy were the lower degree of flowering and the lower plant height in the second crop.

'Natsuyu' showed better vigorous and re-growth in the early spring than 'Hokuseki' and 'Kurano'. It also showed stronger cold hardiness than 'Hokuseki'. These results indicated that 'Natsuyu' had good overwintering ability.

Since the flowering date of 'Natsuyu' was similar to that of 'Hokuseki', 'Natsuyu' considered to be an early flowering type. The growth type of the first autumn was more rosette type than 'Hokuseki' and more flowering type than 'Kurano'.

'Natsuyu' had more resistance than 'Hokuseki' and 'Kurano' to powdery mildew and sclerotinia crown and stem rot. The tolerance to black leaf bright and rust of 'Natsuyu' was the same as that of 'Kurano' and slightly weaker than that of 'Hokuseki'.

'Natsuyu' showed similar seed yield and chemical composition compared to 'Hokuseki'.

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