

NORLAC RED CLOVER

Norlac is a cultivar of red clover (*Trifolium pratense* L.) developed at the Agriculture Canada Research Station, Lacombe, Alberta. It is a single-cut type that was selected primarily for resistance to northern anthracnose (*Kabatiella caulivora* (Kirchn.) Karak.).

Origin

Selections from the breeding programs at Lacombe, Alberta and Saskatoon, Saskatchewan, as well as some introductions, were established in a winter crown rot nursery at Lacombe in 1960. Thirty-three plants were selected in 1961 after a winter of severe killing. These were vegetatively propagated and grown in an isolation block to permit cross-pollination and obtain seed for progeny testing. Eleven plants were selected following repeated screening for resistance to northern anthracnose and progeny testing for desirable agronomic characteristics. Three of the plants were selections from the cultivar Altaswede, five were from Alaskaland an ecotype from Alsaska, one was from the cultivar Resistentia from Sweden, one from Karaby, a

high yielding local strain from Sweden, and one was from a winter crown rot resistant selection of unknown origin from Saskatoon. The 11 plants were vegetatively propagated again and grown in an isolation block. Seed was harvested separately from the individual plant lines.

The initial increase block of Norlac was established in 1966. The planting, about 1.25 ha in size, consisted of spaced plants with each of the 11 lines equally represented. In 1967, diseased and otherwise undesirable plants were rogued prior to flowering. The seed then was harvested in bulk.

The bulk seed was tested as Lacombe No. 1 and was licensed (No. 1493) as Norlac in November 1973.

Performance

Tests for forage yield were conducted at four locations in western Canada and three locations in Ontario. Yields of Norlac averaged 98% of Altaswede over 15 station-years in western Canada and 103% of Altaswede over 3 station-years in Ontario (Table 1). Norlac was superior to Altas-

Table 1. Forage yields (kg/ha) of Altaswede and Norlac red clover

Location	Seeding year	Harvest years	Altaswede	Norlac	Norlac as % of Altaswede
Beaverlodge	1968	3	2,910	2,700	93
Beaverlodge	1973	2	3,310	3,240	98
Chedderville	1969	2	5,410	5,480	101
Lacombe	1969	2	5,240	5,090	97
Lacombe	1970	2	5,160	5,100	99
Lacombe	1971	2	7,900	7,430	94
Lacombe	1973	1	8,060	8,130	101
Winnipeg	1969	1	4,640	5,000	108
W. Canada avg		15	5,030	4,930	98
Kapuskasing	1974	1	3,940	4,110	104
New Liskard	1974	1	4,190	4,610	110
Ottawa	1974	1	7,310	7,230	99
E. Canada avg		3	5,150	5,320	103

Table 2. Seed yields (kg/ha) of Altaswede and Norlac red clover

Location	Seeding year	Harvest years	Altaswede	Norlac	Norlac as % of Altaswede
Beaverlodge	1968	2	272	361	133
Beaverlodge	1973	2	460	487	106
Lacombe	1969	2	371	549	148
Lacombe	1970	1	428	470	110
Lacombe	1971	2	410	470	115
Melfort	1968	1	439	570	130
Melfort	1969	1	536	698	130
Melfort	1971	1	297	450	152
Average		12	393	493	125

wede in seed production, averaging 25% higher over 12 station-years at three locations (Table 2).

Ratings were made for resistance to northern anthracnose when a severe and uniform infection occurred in 1965. Each of the 11 lines had better resistance than Altaswede when rated on a 1-5 scale (1=best). The 11 lines averaged 2.8 compared with a rating of 4.0 for Altaswede.

Adaptation

Norlac is adapted to the red clover growing areas of western Canada and may be useful in those parts of Ontario where single-cut red clover is used.

Other Characteristics

Norlac reaches the 10% bloom stage 3-6 days earlier than Altaswede and is slightly shorter. It is similar to Altaswede in other

characteristics. Flower color ranges from white to dark red.

Maintenance of Pedigree Seed Stocks

Breeder seed will be maintained at the Lacombe Research Station. Breeder seed is being increased and distributed under the Canadian Forage seed Project.

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