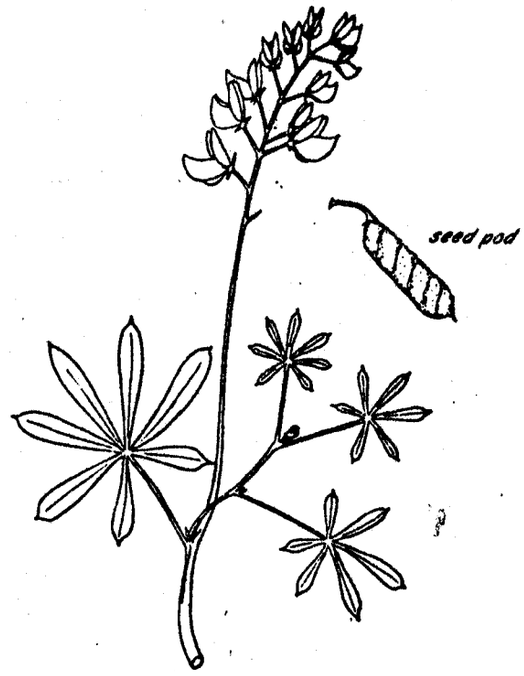
TECHNICAL NOTES
U.S. DEPARTMENT OF AGRICULTURE Portland, Oregon SOIL CONSERVATION SERVICE

Plant Materials No. 59

sickle-keeled lupine

Culture and uses of SICKLE-KEELED LUPINE



In the State of Oregon

Sickle-keeled lupine, Lupinus albicaulis Dougl., is a biennial or short-lived perennial legume, native west of the Cascade Mountains in Washington and Oregon. It is a biennial in seed production fields at the Corvallis Plant Materials Center. The first year vegetative growth is followed by flowers and seed production the second year. Stems are strong and erect to as much as 60 inches. Flowers are borne in loose racemes, The blue to bluish-white flowers fade brown, as is typical of lupines. A very large and deep tap root develops, and new growth the second year emerges from the year-old stems, as well as the crown at ground level. Leaflets number from six to nine, are equal to, or longer than, the petiole, and are appressed-hairy on both sides. Large diameter stems develop and are hollow.

Seedling growth is rapid and vigorous.

ADAPTATION

The adaptation limits of sickle-keeled lupine are not known. It occurs on well-drained roadsides and in open areas throughout western Washington and western Oregon. It apparently tolerates full sun very well, and seems to thrive on low fextility sites. It appears to have excellent drought resistance, as well as hardiness for the coldest temperatures west of the Cascades. It survived recent winter temperatures of -7° Fahrenheit with no apparent damage. It has survived in bank trials on a hot south exposure, better than other legumes it has been compared with, Sickle-keeled lupine is adapted to MLRA 1, 2, and 3.

It makes rapid growth and soon dominates low fertility sites, which are devoid of vegetation. Grass and other plants usually invade the area and sickle-keeled lupine goes out. This makes it appear ideally suited as a pioneer species on disturbed sites, where it is replaced by other species higher in the order of ecological succession. Field plantings are needed to determine its adaptation, and potential for roadside seeding.

USES

Sickle-keeled lupine has shown promise for controlling erosion on cuts and fills in Oregon State Highway Department seedings. It is being tested on roadside cuts and fills, logging roads, and similar sites to provide cover temporarily until other permanent legumes become established. Recommended fox use on dredge spoils and secondary stabilization for coastal sand dunes.

Sickle-keeled lupine does not have any special value for big game forage. Tests conducted by the poisonous plant research laboratory in Logan, Utah, failed to produce toxic symptioms in a sheep or calf. Therefore, grazing should not be a hazard.

Initial trials have indicated it has a potential for winter cover on logging roads at high elevations, on low fertility sites, draughty sites, and south exposures. It should be used in a mixture to provide first year erosion control.

ESTABLISHMENT

Seed can be drilled on moderate slopes, or broadcast on slopes too steep in drilling. Seedings are made using 20 pounds per acre in a mixture with trefoils, or a grass mixture. Seedings should have a fertilizer application of 0-60-60 at the time of seeding on critical area planting. Seedlings make a rapid growth and provide a quick cover until other slower developing legumes become established.

Plantings can be made during fall or spring planting season depending on site conditions, Seed should be inoculated with an inoculant for lupines at the time of seeding. There are 29,500 seeds per pound.

No maintenance is required except the prevention of damage from seed spray,

Sickle-keeled lupine seed is easily produced from seed increase fields. The plan growth is rank, and seed stalks are up to 60 inches tall. Seed yields range up to 600 pounds per acre. There is a ready volunteer growth of seedlings, however, seed harvests at Corvallis are made on fields established by conventional planting methods.