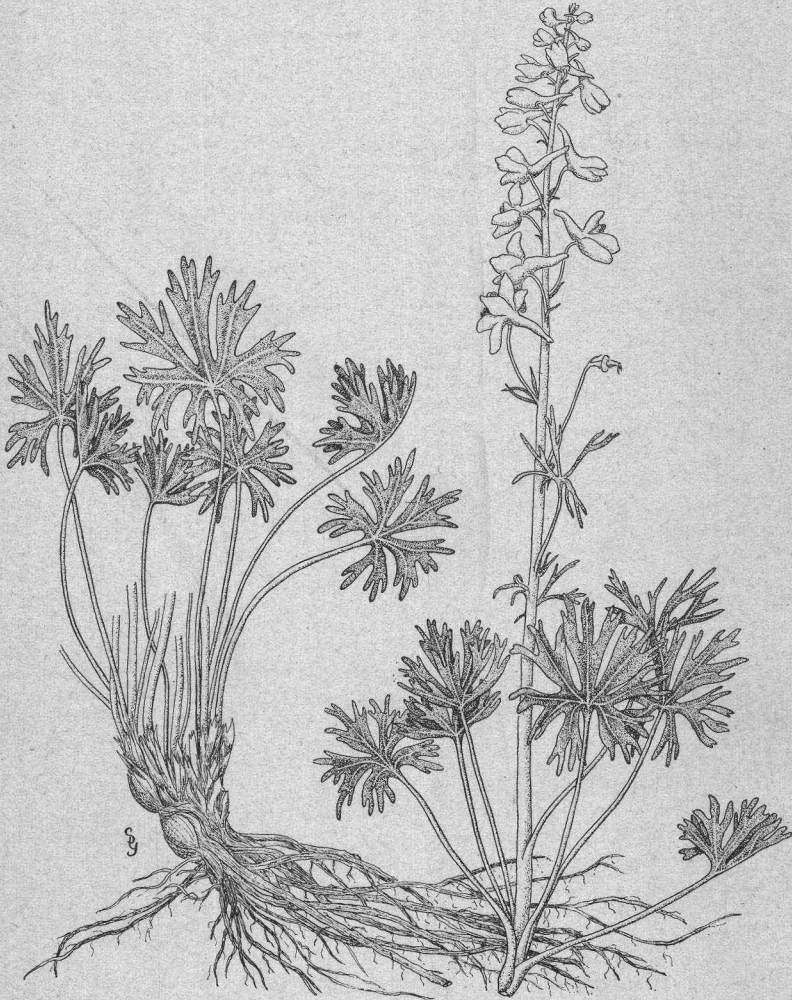


Larkspur

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LOW LARKSPUR—*Delphinium Andersonii*—Showing entire plant and root development.

Oregon State System of Higher Education
Federal Cooperative Extension Service
Oregon State College
Corvallis

Larkspur

(*Delphinium Andersonii* and *Delphinium glaucum*)

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Illustrations by Cathrine Davis Young

Other names: Poison-weed, Cow-poison, Staggerweed.

The many different species of larkspur are commonly divided into so-called "tall" and "low" groups; both will be discussed here. Tall larkspur is thus not one plant, but an entire group of plants having similar habits and appearance. Low larkspur is another group and is more prevalent in Oregon than tall larkspur. Probably all of them are poisonous, though in varying degrees.

There are other larkspurs in each group, but the two mentioned above are among the most common in Oregon. *Delphinium Andersonii* is one of the most common members of the low larkspur group in eastern Oregon. *Delphinium glaucum* is in the tall larkspur group. It is commonly found at altitudes of 6,000 to 9,000 feet. Both are perennials.

Larkspur is one of the most important villains in the Oregon weed drama so far as cattlemen are concerned. Many cattle die each year from eating it. Sheep are apparently able to eat quantities of the plant with very little, if any, ill effects.

Tall larkspur. Tall larkspur generally grows from 2 to 7 feet tall. Stems are coarse, erect, smooth, and hollow. The stems are sent up from a cluster of elongated perennial roots. Lower leaves are cut deeply into 5 to 7 separate sections. Each section is from 2½ to 6 inches in diameter. Upper leaves are cut into fewer and narrower sections and resemble the leaves of some varieties of geranium. Flowers are from ¾ to 1½ inches across and are different shades of red, blue, and white. They are borne individually along the top 8 to 24 inches of the short stem and have a characteristic spur. The blue varieties are the most common. Many are a deep, rich blue resembling the darker hues in Crater Lake. They are showy, beautiful flowers. Seeds are produced in small pods from ¼ to ½ inch long. Tall larkspur is commonly found at high altitudes, in moist soils in meadows, along streams and springs, in moist mountain ravines, and along creek bottoms. It grows until the foliage is killed by a fall frost. Tall larkspur is less poisonous after flowering.

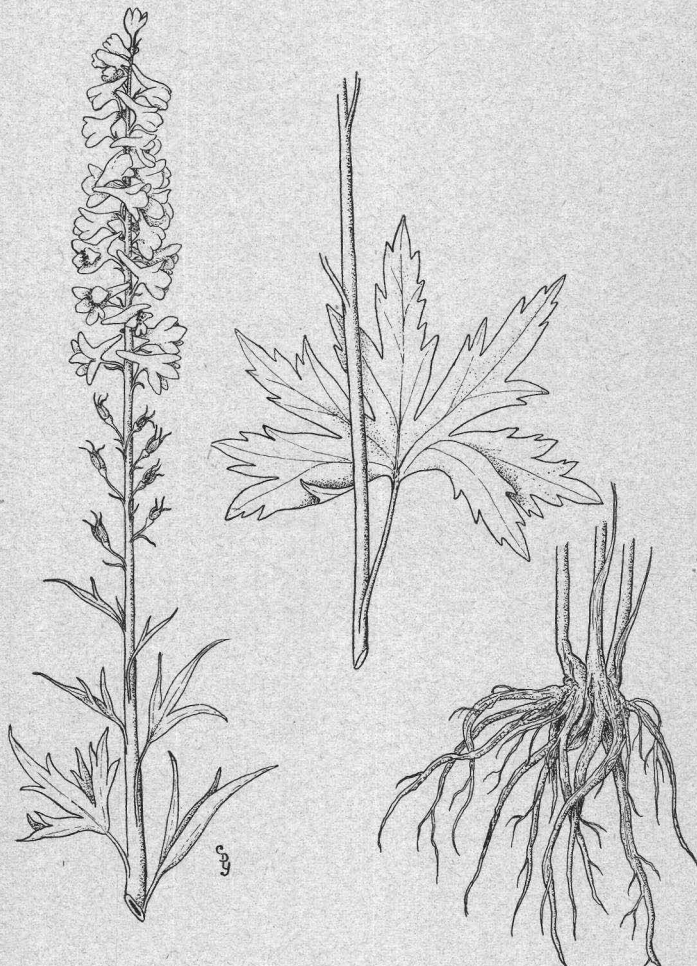
Low larkspur. Low larkspur usually grows from 10 inches to 3 feet tall and generally produces one stem. The leaves are thicker, smaller, more deeply cut, and have narrower sections than the tall larkspur. The flowers are about the same colors as tall larkspur. These plants are normally found in dry, open areas of sagebrush land, often at low elevations, but they may be found at as high elevations as tall larkspur. Low larkspur blooms early in the spring, and the top dies after flowering. This plant is poisonous throughout its life.

Most of the stock losses result in the early spring, probably due to two reasons: First, there is less other forage available at that time; and second, the first leaves of the plants are apparently most poisonous. After the plants have matured, there is little danger of poisoning even if cattle are grazed in heavily infested areas.

Symptoms of poisoning. Delphinin, an alkaloid, is reported to be the main poison in larkspur. It has a paralyzing action on the lungs and spinal cord. The symptoms of poisoning are the same for all larkspurs. Affected animals fall down and struggle to rise. Occasionally they may get up, walk

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away, and show no immediate further signs of poisoning. The animals may stagger and fall down many times until finally the lungs become paralyzed and death follows. Animals do not lose consciousness when paralyzed with larkspur poisoning. This distinguishes it from camas poisoning, which causes complete coma. Cattle usually vomit, and death is often due to strangulation from getting the vomited material into the windpipe.* Poisoned animals are always constipated.



TALL LARKSPUR—*Delphinium glaucum*—Showing flowering top of plant, single leaf, and nature of root growth.

Preventive measures. Since cattle are susceptible to poisoning from this plant and poisoning of sheep or horses is very rare, the larkspur ranges should be used for the latter animals if practicable. In the case of tall larkspur, there is little or no poisoning if cattle can be withheld until after the bloom period. Most of the larkspur in Oregon is the low kind that dries up shortly after blooming. If cattle can be kept from the larkspur parts of a range until sum-

* U.S.D.A. Farmers' Bulletin No. 988, "Larkspur or Poison Weed."

mer, there is usually no trouble. This is not possible in every case. If the weed is thick on a certain meadow, around some spring, or on only a few slopes, it will usually pay to fence those areas and feed them off later in the season. Whenever possible, use larkspur ranges last.

Overgrazing is probably one of the most important factors leading to livestock loss from larkspur. Dr. J. N. Shaw, Head of the Department of Veterinary Medicine at Oregon State College, states that in his experience, cattle suffer from larkspur poisoning only on pastures that are grazed too closely.

Cure. Animals that have fallen down and cannot get up should be placed with their heads higher than other parts of the body. They should be kept quiet and if badly bloated should be punctured, as is done for bloat from clover or alfalfa. The U. S. Department of Agriculture* recommends a hypodermic injection in the shoulder, using the following, dissolved in one tablespoon of water:

- 2 grains of pilocarpin hydrochlorid
- 1 grain of physotigmin salicylate
- $\frac{1}{2}$ grain of strychnine sulphate

This dosage is the right amount for a 500- to 600-pound animal and should be doubled for a 1000-pound animal. It should be given as quickly as possible. This medicine is sold in some drug stores, but if it is not at hand, give the animal oil or some other physic as promptly as possible.

According to Dr. Shaw, "Treatment should be directed toward the prevention of losses that might be due to bloat that accompanies the consuming of larkspur." His experiences indicate "if bloat could be prevented, animals would recover from quite large doses of this plant." The saving of one \$75 animal would pay for several visits by a veterinarian, so if available he should be called in to treat affected animals. Unfortunately most cases occur on mountainous range land and are not discovered until too late.

Control. The best method of control on range land from the standpoint of cost and effectiveness is to grub out by hand the entire plant, making sure all roots are removed. Some of the latter may be nearly a foot deep. *All pulled plants should be burned.* On infested cultivated lands it is possible to give the area a season of cultivation. Where practicable, cultivation is the easiest method of handling badly infested areas. The land should be plowed as deep as possible and then worked down with a spring-tooth harrow or other implement that will pull many of the roots to the surface. The roots should be raked up then and destroyed. Small areas may be treated with sodium chlorate. Care must be exercised in using this chemical so that fires do not result. Instructions on the use of sodium chlorate and other methods of controlling perennial weeds are given in Oregon Extension Bulletin 510.

Larkspur does not spread in a thick stand of grass. If the weed begins to appear around springs, salt or bed grounds, or on meadows where the grass has been killed by rodents, a practical control measure is to seed these places to hardy grasses such as brome grass, crested wheatgrass, Astoria bent, redtop, etc. The grass best suited will depend largely upon moisture conditions.

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* U.S.D.A. Farmers' Bulletin No. 988, "Larkspur or Poison Weed."