

# Larkspur

PNW 101

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

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# Larkspur

(*Delphinium andersonii* and *Delphinium glaucum*)

Larkspur, *Delphinium* species, has been recognized as a medicinal and poisonous plant for generations. In the western rangelands, it is recognized as one of the major causes of cattle poisoning. Losses in horses and sheep rarely occur.

As a group, larkspurs are perennial, erect herbs from a single rhizomatous or clustered tuberous rootstalk. Leaves are simple, alternate, or clustered at the ground level, petioled, palmately lobed to deeply divided (depending upon species) into three to five primary divisions which are in turn slightly lobed to repeatedly redivided. Flowers are spurred and borne in erect terminal racemes.

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

There are other larkspurs in each group, but *Delphinium andersonii* and *Delphinium glaucum* above are among the most common. *Delphinium andersonii* is one of the most common members of the low larkspur group occurring east of the Cascade Mountains. *Delphinium glaucum* is in the tall larkspur group. It is commonly found at altitudes of 6,000 to 9,000 feet. Both are perennials.

**TALL LARKSPUR.** Tall larkspur generally grows from 2 to 7 feet tall. Stems are coarse, erect, smooth, and hollow. The roots are elongated but fibrous. Lower leaves are cut deeply into five to seven separate sections. Each section is from 2½ to 6 inches in diameter. Upper leaves are cut deeply 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 in-

dividually 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. 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 normally are 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 livestock losses result in the early spring before flowers have been produced, probably for two reasons: first, there is less other forage available at that time; and second, the first leaves of the plants are apparently the most poisonous. After the plants have matured, there is little danger of poisoning, even if cattle are grazed in heavily infested areas.

**SIGNS OF POISONING.** Delphinine, an alkaloid, is characteristic of the alkaloids in *Delphinium*. Signs of poisoning in cattle appear to be the result of a general weakness caused by the effect of alkaloids on the nervous system. They include uneasiness, stiffness of gait, and a straddled stance with the hind legs held far apart. The animal collapses suddenly, usually forelegs first. The severity of poisoning may be gauged by the position of the animal when prostrated. Slightly poisoned animals rest on

the sternum with the head erect. In more acute cases, the head rests on the ground, and in severe poisoning the animal lies on its side. Animals do not lose consciousness when paralyzed with larkspur poisoning. Death occurs quickly by either asphyxiation or respiratory paralysis. Nausea and abdominal pain are commonly observed in larkspur poisoning. If nausea results in vomiting, death is often due to asphyxiation when vomitus becomes lodged in the windpipe. Otherwise, death results from respiratory paralysis. Constipation always is

observed in larkspur poisoning and it has been found that if this condition can be relieved, the animal may normally be expected to recover.

**PREVENTIVE MEASURES.** Larkspur is most toxic in its early growth stage; therefore, the greatest danger from poisoning will be in the spring and will depend upon factors determining larkspur's growth. Generally, because of the nature of growth, low larkspurs produce poisoning early in the season and



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

disappear. Tall larkspurs are dangerous over the same period. Their toxicity will persist until fairly well into summer, especially at the higher elevations where growth starts later. Late-season livestock losses may occur from tall larkspur that has set seed.

Most larkspur in the Northwest is the low kind that dries up shortly after blooming. If cattle can be kept from the larkspur parts of a range until summer, there is usually no trouble. This is not always possible. If the weed is thick on a certain meadow, around some spring, or on only a few slopes, usually it will pay to fence those areas and graze them later in the season. Whenever possible, larkspur ranges should be used last.

Overgrazing probably is one of the most important factors leading to livestock loss from larkspur. Livestock losses can be reduced by keeping cattle off larkspur ranges until other forage is available. Larkspur is not distasteful to stock. Cattle seem to relish it under some conditions.

Treatment of animals is symptomatic. Relief of bloat, heart stimulants, warmth and nursing care may help. There is no specific treatment for livestock with larkspur poisoning. Bloating is common. On uneven ground, animals tend to fall. If they fall with heads downhill, they are often unable to relieve themselves of gas effectively and bloating results.

Too much handling of animals that have consumed a toxic amount of larkspur will intensify the severity of the symptoms. The benefits of treatment must be weighed against the damage which may be caused by its administration.

**LARKSPUR CONTROL.** Eradication of larkspur in large areas is difficult. Larkspur can be controlled in small areas by grubbing out the entire plant, making sure that all roots are removed. All pulled plants should be destroyed. The use of 2,4,5-T at the rate of 5 pounds acid equivalent per 100 gallons of water will provide fair control. Follow-up treatments are necessary until the plants are destroyed. Consult the label on the herbicide for grazing restrictions and other limitations on use.

Low larkspur can be controlled in sagebrush areas with carefully timed 2,4-D sprays. Use 2 pounds acid equivalent of 2,4-D ester. Consult the label for grazing restrictions. Check state regulations regarding local restricted areas in use of 2,4-D. Spray earlier (one to two weeks) than is normal for best control of sagebrush. This requires careful selection of low larkspur sites in order to get the best sagebrush control in areas not infested with low larkspur.

Care should be used when spraying near lakes, streams, and ponds to avoid drift of spray particles into the water.

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Prepared by Oregon State University Extension weed control specialists in consultation with Extension specialists at Washington State University and the University of Idaho.

Note: Some uses of 2,4,5-T and silvex have been suspended. If no other control is listed, consult your county Extension agent.  
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