



## Noxious/Invasive Species

# Rocket Larkspur

(Poisonous Plant)

Illinois

Plants of fencerows, roadsides, barnyards, fields, and waste places



### Description

*Delphinium ajacis* L.: Rocket larkspur is a branching annual from 12 to 28 inches tall, with alternately arranged leaves that are deeply dissected into narrowly linear segments. The flowers,  $\frac{3}{4}$  to 1- $\frac{1}{2}$  inches wide, are disposed in racemes, and have blue, violet, pink or white petals united into a single spur. Each flower produces a follicle  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long.

### Occurrence

A native of Europe, rocket larkspur has escaped from gardens in North America. It ranges from Nova Scotia to Minnesota and Montana, south to South Carolina and Texas.

### Conditions of Poisoning

The toxicity of larkspur plants under natural conditions depends upon seasonal variations in the amount of toxic principle, the species of animal, and the parts of the plant consumed. Although the minimum lethal dosage (MLD) of rocket larkspur has never been accurately determined for domestic animals, apparently an animal will be poisoned if it eats 0.5 percent of its body weight of the plant. The toxicity seems to be reduced as the plant reaches maturity. The seeds are quite toxic, however, and are often the cause of poisoning late in the growing season. For unknown reasons, sheep are much less susceptible than cattle and horses to the toxic action of the larkspur.

### Toxic Principles

The poisonous principle in larkspur is a combination of diterpenoid alkaloids. Some of these alkaloids, of which delphinine is a major one, have been identified, and structural formulas are known.

### Clinical Signs

The diterpenoid alkaloids seem to affect the central nervous system, and the poisoned animal will appear weak. The animal is uneasy at first, and then exhibits stiffness of gait and a characteristic straddles stance with the hind legs held far apart as though to prop up the body. There is usually twitching of the muscles, especially those of the muzzle, shoulder, flank, and hip. While the animal is standing, the back is arched. Occasionally, the animal will collapse when it attempts to walk backward. A severely poisoned animal will collapse suddenly; a less severely poisoned animal usually rests on its sternum with its head on the ground. In certain cases, the head may remain erect.

Immediately after collapsing, the animal frequently tries to regain its footing. It will often succeed in standing, but signs of weakness returns, and it collapses again. Excitement intensifies the clinical signs. Nausea, vomiting, and evidence of abdominal pain have been reported in pigs. During vomiting, ingesta may be drawn into the trachea, and the animal suffocates. In other cases, fatalities result from respiratory paralysis. The pulse and respiration are rapid and weak throughout the course of clinical signs. All animals poisoned with larkspur become constipated, and relief of this condition may hasten recovery. Bloating frequently occurs in ruminants.

-more-

**Necropsy** There are no diagnostic lesions produced by larkspur poisoning. Congestion of the internal blood vessels and various stages of irritation of the mucosa of the alimentary tract are practically the only findings observed.

**Treatment** The following prescription has been recommended: physostigmine, 1 grain; pilocarpine, 2 grains; strychnine, ½ grain. These drugs are dissolved in 20 milliliters of water and administered subcutaneously for each 500 pounds of body weight. Sheep require about ¼ of this dosage.

**References** Evers, Robert A., and Roger P. Link. Poisonous Plants of the Midwest and Their Effects on Livestock, 1972. Special Publication 24, College of Agriculture, University of Illinois at Urbana-Champaign.

December 2006