



# Indian Tobacco & Pale Spiked Lobelia



*Usually found in dry, open pastures and meadows.*

## Description: Indian tobacco

*Lobelia inflata L.:* Indian tobacco is an erect annual herb with a hairy, branched or unbranched stem up to 3 feet tall. The leaves are alternate, ovate, 1 to 33 inches long, and with toothed margins. They may be stalked or almost stalkless. Branches arise from the axils of the leaves. Racemes of pale blue or white flowers terminate the main stem and branches. Each flower is about ¼ inch long and 2-lipped but has 5 petals and is subtended by a bract. The lowermost flowers have leaf-like bracts; the upper bracts are greatly reduced. The fruit is a small capsule embedded in the calyx tube that becomes inflated at maturity. Each capsule produces numerous tiny, yellow-brown seeds.

## Description: Pale spiked lobelia

*Lobelia spicata Lam.:* Pale spiked lobelia is an erect perennial herb with a simple, smooth or slightly hairy stem up to 3 feet tall. It has alternate, lanceolate, oblanceolate, or obovate leaves up to 3 inches long, with scarcely toothed margins. The leaves are scattered on the stem and form a rosette at the base of the stem. Upper leaves are gradually reduced to bracts. Slender racemes crowded with pale blue or white flowers terminate the stem. Each flower is about 3/8-inch long and is subtended by a small bract. The calyx tube does not inflate in fruit.

## Occurrence

Indian tobacco, ranging from Labrador to Saskatchewan, south to Georgia, Alabama, Mississippi, Arkansas, and eastern Kansas, is found in open woods creekbanks, and pasturelands. It is sometimes a weed in gardens. Pale spiked lobelia is a plant of prairies, open woods, roadside ditches, railroad trackways, and pasturelands. It ranges from Quebec and New Brunswick to Saskatchewan, and south to Georgia and Arkansas.

## Conditions of Poisoning

Cattle or sheep in pastures infested with Indian tobacco or pale spiked lobelia do not usually browse these plants except accidentally or when other plants are dry or in short supply. Nevertheless, in heavily infested pastures or during very dry periods, enough of the plants may be eaten to cause serious poisoning.

## Toxic Principles

Indian tobacco, pale spikes lobelia, and other lobelias contain several alkaloids similar to nicotine in composition—among them lobeline and lobelanine—and a volatile oil.



Indian Tobacco Photo by:  
Thomas G. Barnes  
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### Clinical Signs

Diagnosis is supported by evidence that the affected animal has browsed these plants in pasture, or by finding recognizable parts of the plants in the animal's stomach. Clinical signs include dilated pupils, salivation, nausea, vomiting, diarrhea, ulceration about the mouth and on the eyes, nasal discharge, and coma. These signs are like those produced by an overdose of the alkaloid lobeline. Lobeline has been detected in the plants in a large enough quantity to account for poisoning.

### Necropsy

Lesions include ulcers in the mouth, on the cornea, and in the intestine, and hemorrhage in the intestine and kidney cortex. Edema in the conjunctiva and kidneys and fatty changes in the liver are consistent findings.

### Treatment

Atropine will relieve some of the clinical signs. A purgative may be administered if the animal shows signs of poisoning soon after eating the plants. Tannic acid given by mouth will combine with the toxic substances and delay absorption.

(for a description and discussion of great lobelia or blue cardinal flower, which is a plant of streams, ditches, ponds, springs, and swampy meadows, see "Great Lobelia.")

### 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.



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