

Horsetail (*Equisetum arvense*)

Horsetail is a trouble-some weed in many parts of North America, Canada, and Europe due to its prolific rhizome and tuber system. This plant is native to both North America and Europe and is one of only a few *Equisetum* survivors from the dinosaur era. Tree-size horsetail fossils have been found in coal beds dating back to the Paleozoic Era.

Horsetail is also known as scouring-rush and plants have been used to scour pans, as fine sandpaper, and to polish metal. The furrowed stems are reinforced by silica grains.

Field horsetail is a perennial with a spreading rhizome system that produces numerous shoots and tubers. The rhizomes are dark brown or blackish and covered with brownish hairs that give them a felt-like feel. Rhizomes grow vertically to 6 feet deep and horizontally to depths of 10 to 20 inches. The horizontal rhizomes produce numerous shoots and form rounded tubers about ½" in diameter.

Rhizomes send up numerous aboveground shoots of two different types at various times of the year.

- **Fertile** stems appear in the early spring and are whitish to light brown, unbranched, hollow, cylindrical, leafless, jointed, and 6 to 12 inches long. The stem sections are easily pulled apart. Fertile stem tips end in a yellowish to brownish spore-producing cone (called a strobilus).
- **Sterile** stems emerge later than the fertile stems. Sterile stems look like miniature pine trees with their plume-like branches. Sterile stems are green, erect or somewhat prostrate, 6 to 24 inches tall and composed of slender, grooved, hollow joints. Sterile shoots appear in early May and reach a maximum growth rate in July, maximum shoot height in August, and maximum shoot number in September. Rhizome growth accelerates rapidly between June and July and peaks in October. Tubers appear in July and increase in weight until a killing frost occurs.

Horsetail only reproduces by spores, horizontal rhizomes and tubers. Fertile stems develop early in the spring and then wither and die after spores have been produced by early summer. A single spore cone can release millions of minute spores which are viable for about 48 hr and germinate only in damp soil. Because any soil tillage or herbicide application at this stage should destroy most potential horsetail plants, spores are not an important means of horsetail propagation in cropped land.

In general, horsetail appears most commonly in acidic and wet soil conditions, but it is at home in well drained fields and sandy or gravelly sites. Horsetail growth is optimal in soils with high potassium levels. Buds and tubers on the rhizomes are capable of reaching the surface from great depths.

They only tolerate shade for short periods unless they have sizable quantities of carbohydrates stored in their established rhizomes. Tuber production drops rapidly as shade levels increase and is optimized when plants grow in full sunlight.

Physical Controls: Horsetail's extensive and deep rhizome system means that tillage and cultivation only destroy the top growth and delay reestablishment. Repeated tillage will slowly weaken the plant.

Cultural Controls: These include improved drainage and adequate lime and fertilization programs.

Chemical controls: There are few herbicides that affect field horsetail in field crops. Even glyphosate (Roundup) fails to control horsetail.

¹ Adapted from http://ipcm.wisc.edu/uw_weeds/extension/articles/conhorsetail.htm, **Biology and Control of Field Horsetail** Jerry Doll

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