

BUCKHORN PLANTAIN
(*Plantago lanceolata*)

BROADLEAF PLANTAIN
(*Plantago major*)



Plantains are perennials, reproducing mainly by seed, but also by new shoots from the fibrous roots of some species. They are found on rich soils of lawns and meadows, although they will tolerate drier conditions of roadsides and waste areas. Except for Rugel plantain, which is native to North America, these weeds were introduced from Asia and are now widespread throughout North America. They are uniquely characterized by a basal rosette of longitudinally veined leaves and erect leafless stems bearing many tiny green flowers.

Broadleaf plantain, *Plantago major*, has a long slender spike atop the stem. Leaves are slightly hairy, almost oval, and are borne on long petioles (leaf stalks). Both leaves and stalks are dull green in color. Each tiny flower will bear 6 to 20 seeds, which are about 1/16 inch long, variable in shape, angular on one side, and with ridges radiating from a central scar. Seeds are shed from a capsule which opens by a lid.

Buckhorn plantain, *P. lanceolata*, also has a long stem but it terminates in a short, almost cylindrical spike of flowers. Leaves are elongate and slender (lanceolate) and only slightly hairy. Flower parts have dry margins which give the spike a light brown appearance. The filaments which bear the stamens (male portion containing pollen) are very long and can be seen persisting on the spike. Each flower capsule bears two glossy brown, boat-shaped seeds, about 1/16 inch long.

A third species, Rugel plantain, *P. rugelli*, is similar to broadleaf plantain except that Rugel is less hairy, more stout, with wavy indentations on the shiny green leaves, and has a purplish petiole.

2,4-D applied in spring or fall will eliminate any of the plantains. Repeated spot treatments may be necessary. Dichondra, St. Augustine grass, and clover may be injured by this treatment.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

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Japanese Beetle Shows Changes

Japanese beetles in Connecticut are moving from good turf to rough turf, entomologist Raimon L. Beard reports. "There has been a sharp decline in the number of Japanese beetles in lawns and gardens, but more and more grubs are found in rough turf," Beard writes in the January issue of "Frontiers of Plant Science," publication of the Connecticut Agricultural Experiment Station.

Greater grub survival in rough grass areas probably results from natural selection, Beard suggests, whereby only individuals able to adapt to new surroundings survive to reproduce. "Japanese beetles have an amazing ability to adapt to changing environment," Beard notes.

Copies of "Frontiers of Plant Science," which include Beard's article, are available by writing Publications, Box 1106, New Haven 4, Conn.

Ortho Expands Research Units

New research facilities, including a biological laboratory, are being constructed at Tank Farm Hill, Richmond, Calif., for Ortho Division, California Chemical Co.

Planned complex of buildings is part of an expansion program begun during 1962 by Ortho Research & Development, and will supplement the central research facilities at Richmond headquarters, the firm reveals.

Ortho's new biological research lab will be 50' by 150', with two wings, one devoted to plant science and the other to entomology. To the rear of the main lab will be a 1,000 sq. ft. spray and incubator building and a 20' by 40' greenhouse, one of 6 greenhouses scheduled for completion at a later date.

Weed Society Sets 1964 Meet

Fifth Annual Conference of the Weed Society of America will be held at the Pick-Congress Hotel, Chicago, Ill., February 10-13, 1964, the public relations committee of that organization has confirmed.

More than 1,000 applicators, researchers, and education workers, representing colleges, chemical companies, weed control firms, public health and regulatory agencies, and others are expected to attend.