

OREGON STATE UNIVERSITY

How long do weed seeds survive in the soil?

Last Updated:
February 19, 2003

CORVALLIS - Weed seeds can survive in the soil for years before they germinate and grow, according to Jed Colquhoun, weed specialist with the Oregon State University Extension Service.

Why should home gardeners care?

"If you combine the longevity of seeds in the soil with the fact that weeds such as common lambsquarters can produce over 500,000 seeds per plant, the incentive to hand weed your garden becomes much greater," said Colquhoun.

"Prevention is the most effective form of weed control," he said.

Here are some basics on weed seed biology:

Undisturbed weed seeds tend to persist longer than seeds subjected to periodic tillage. Weed seeds in deeply worked soil tend to last longer than seeds in shallowly worked soil. Seeds deep in the soil are "stored" below the germination zone.

Grass seeds tend to be less persistent than broadleaf weed seeds.

The number of surviving seeds of most weed species declines rapidly the first year. But thereafter the rate of weed seed decline slows. Some seeds can persist for decades.

As many as 130 million seeds per plow acre were found in a Minnesota study.

Different species of weeds have seeds that last varying numbers of years in the soil. The scientific literature provides some information about seed longevity, including:

Brome grass seed seldom lasts more than two years.

Annual ryegrass - up to nine years.

Perennial ryegrass - up to three years.

Annual bluegrass - up to about five years.

Wild oats - three to six years, but longer in deep soil.

Jointed goatgrass - three to five-and-a-half years.

Barnyardgrass - up to 13 years.

Quackgrass - up to four years.

Common velvetgrass - 10 years or more.

Mustards - are long lived. Seeds excavated from a monastery in Denmark were dated to be 600 years old and 11 of them germinated. More commonly, mustard seeds last for decades.

Lambsquarters - may last up to four decades.

Russian thistle (tumbleweed) - short lived, most live only a year.

Wild carrot - several years.

Curly dock - more than a decade.

Canada thistle - more than two decades.

Field bindweed - more than 50 years.

leafy spurge - at least a few years.

common groundsel - most die within a year.

Scientists found lotus seeds in Manchuria that germinated after over 1,000 years, said Colquhoun.

Author: Carol Savonen

Source: Jed Colquhoun