

Rob the Bank

Preventing Seed Deposits Has Long-Term Payback

Keeping weeds under control has immediate returns as competition can reduce soybean yields. There are also long-term ramifications if weeds go to seed in the fall. Uncontrolled seed can come back to haunt farmers for years to come.

Just how long can they be an issue?

In 1976, researchers at the University of Nebraska buried seed from 41 economically important weed seeds at sites in eastern and western Nebraska. Weed seeds were exhumed annually and tested for germination each of the first nine years, then after years 12 and 17 with research concluding in 1992.

According to the Nebraska weed seed study, germinability in soil was greater in the reduced rainfall and more moderate soil temperatures of western Nebraska than in the greater rainfall and more fluctuating soil temperatures of eastern Nebraska.

Soil type and conditions can impact how long a seed stays viable, but some weed seeds like lambsquarters and velvetleaf can remain highly viable for 20 years or more.

“Grasses don’t tend to stay in the seed bank as long. After five years, a high percentage is lost, and most are gone in 10 years,” says Paul Johnson, South Dakota State University (SDSU) extension weed science coordinator. “Weeds like velvetleaf, pigweed and waterhemp can be in the soil for 50 to 75 years before they’re totally gone. Small-seeded broadleaf weeds are a long-term problem.”

Johnson says weed seed viability is a valid reason for farmers to prevent weeds from going to seed. Weed seeds buried deep in the ground because of tillage can resurface later as fieldwork brings them back up. Combines harvesting soybeans can spread seeds over a much wider area than the plant can on its own. Tilling those seeds into the ground can extend the area where seeds are stored in the soil.

Tillage is a factor in depositing seeds deeper into the ground. SDSU Extension Weeds Field Specialist Gared Shaffer says because of that, no-till farmers are less likely to have soil seed bank issues. Most weed seeds stay on the soil surface where they are exposed to the environment, including sun and predation by birds and insects. Additional organic matter like garden mulch also suppresses weeds. ■

WEED	YEAR 1	YEAR 2	YEAR 5	YEAR 17
	GERMINATION PERCENTAGE			
YELLOW FOXTAIL	73	48	9	0
YELLOW FOXTAIL	79	85	9	0
GREEN FOXTAIL	73	61	34	5
GREEN FOXTAIL	51	59	26	0
COCKLEBUR	60	36	4	0
COCKLEBUR	60	59	33	1
LAMBSQUARTER	53	43	17	28
LAMBSQUARTER	49	35	31	7
TALL WATERHEMP	38	10	10	3
TALL WATERHEMP	42	39	23	1
VELVETLEAF	32	23	40	25
VELVETLEAF	35	27	50	35
KOCHIA	0	2	0	1
KOCHIA	8	2	1	0
REDROOT PIGWEED	73	27	1	0
REDROOT PIGWEED	69	38	37	1
CANADA THISTLE	47	39	35	9
CANADA THISTLE	35	29	29	7
COMMON SUNFLOWER	1	2	15	3
COMMON SUNFLOWER	1	1	6	0

 SITE ONE: LINCOLN, NE

 SITE TWO: MITCHELL, NE

GRAPHIC: UNIVERSITY OF NEBRASKA

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