WILD OAT SEED PRODUCTION and THE SOIL SEEDBANK

Wild oat seedbanks vary within a field; however, densities can be extremely high in densely infested areas. ***A seedbank of 3600 seeds per square meter*** was recently measured on a farm near Daysland, AB.

A single wild oat plant produces about

20 to 150 seeds

in a competitive crop, but can be >1000 in a non-competitive environment.

SEED LONGEVITY TENDS TO INCREASE WITH BURIAL DEPTH.

30% - 70%

The percentage of seeds that shatter prior to wheat harvest in western Canada.

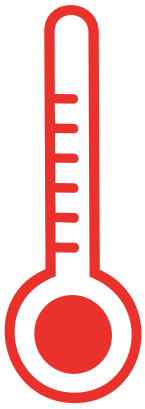
Intensive tillage *(summerfallowing) can reduce the overall seedbank, but over time increases the percentage of persistent seeds remaining.*

Wild oat viability can deteriorate quickly if left on the soil surface, but wild oat seed has adaptations to enable seed movement and burial. ***Hygroscopic awns present on the seed twist and bend in response to changes in humidity which enable the seed to move along and bury into the soil.*** Studies in North Dakota found that soil cracking was necessary for self-burial of the seed. Greater self-burial occurred on a silty clay soil than a sandy loam soil due to higher levels of cracking.

Wild oat has a moderately persistent seedbank (4 to 5 years)

but a small proportion (< 1%) may persist longer, particularly in clay soils. A high percentage (>90%) either germinate or lose viability within the first 12 to 24 months after seed shed.

Wild oat can germinate over a wide range of temperatures **(5 to 30 C)** resulting in early spring emergence as well as flushes throughout the growing season.



GERMINATION AND EMERGENCE *is greatest from soil depths of 2 to 5 cm (1 to 2 inches). Emergence declines at depths of 10 to 15 cm (4 to 6 inches); however, wild oat emergence has been noted from depths of 20 cm (7.8 inches).*

For more information on Wild Oat management, visit: **weedscience.ca/wild-oat-action-committee/** or scan the QR code with your smartphone.

RESISTANT WILD OAT ACTION COMMITTEE

2021