20/20 Seed Labs Inc.
never stop growing

MIDGE TOLERANT WHEAT
Plant · Protect · Preserve

Wheat Midge Resistance Testing

Orange wheat blossom midge (Sitodiplosis mosellana) is a field pest known to cause significant damage to wheat crops in Western Canada. A single known midge tolerant gene (SM1) is present in tolerant Canadian wheat varieties. Overuse of tolerant genetics without proper refuge management can lead to midge populations developing resistance and reducing the effectiveness of this vital trait.

PCR (polymerase chain reaction) test methods are used at 20/20 Seed Labs Inc. to determine the percentage of refuge and midge tolerant wheat in the seed lot. These methods have been subject to proficiency testing and approved by the relevant authorizing bodies.

20/20 Seed Labs Inc. is continuously working with industry partners, wheat breeders, and seed growers to develop and validate testing for new varietal blends on the market. Refuge testing and stewardship of Midge Tolerant Wheat is vital to protecting the effectiveness of the SM1 gene against the wheat midge pest.

20/20 Seed Labs is accredited to test the following varieties:

AAC LeRoy / AAC Redberry	AAC Rimbey / AAC Penhold	CDC Landmark / AAC Viewfield
AAC Awesome / AC Andrew	AAC Russell / AAC Brandon	AAC Weyburn / Precision
AAC Paramount / AC Andrew	AAC Starbuck / AAC Brandon	AAC Wheatland / AAC Brandon
AAC Brigham / AAC Schrader	AAC Succeed / CDC Alloy	AC Sadash / AC Andrew
AAC Hodge / AAC Hockley	AAC Ahead VB / AAC Ellie	CDC Adamant / CDC Bradwell
AAC Darby / AAC Hassler	AAC Stoughton / AAC Westking	AAC Galore / AC Andrew
AAC Walker / AAC Hockley	AAC Oakman / AAC Brandon	
Fierce - CS Accelerate	KWS Sparrow / KWS Alderon	

If your variety is not on this list please contact us directly, we are continuously working to add varieties.

Midge Tolerant Wheat Stewardship Team www.midgetolerantwheat.ca

1-877-420-2099 www.2020seedlabs.ca support@2020seedlabs.ca

Wheat Midge Resistance Testing

Submitting Samples:

1. Take a 500 gram or 2.5 cup representative seed sample.
2. Contact support@2020seedlabs.ca for a **Wheat Midge Sample Submission form.**
3. Ship or drop off your sample to one of our labs:

    *20/20 Seed Labs Inc. 507-11 Avenue Nisku, AB T9E 7N5

    *20/20 Seed Labs Inc. 3489 Pembina Hwy Winnipeg, MB R3V 1A4

Stewardship Principles

The Stewardship Agreement for Midge Tolerant Wheat limits the use of farm-saved seed to one generation past Certified seed. It's a simple step that keeps the interspersed refuge system at the proper level, preventing build-up of resistant midge. Without the refuge, we risk losing the one and only tolerance gene.

The varietal blends provide an "interspersed refuge system" that disrupts the midge's ability to produce resistant offspring, preventing a buildup of a resistant midge population. Without an interspersed refuge system, midge tolerance could break down within 10 years.

Farmers and seed growers are responsible for maintaining this refuge system to preserve midge tolerance because:

- The tolerance is based on a single gene – Sm1 – the only known source of midge tolerance.
- It took researchers more than 15 years to move this single gene into spring wheat varieties using traditional plant breeding techniques.