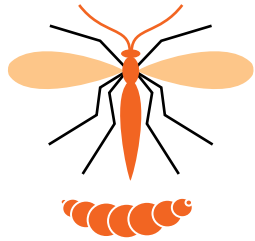
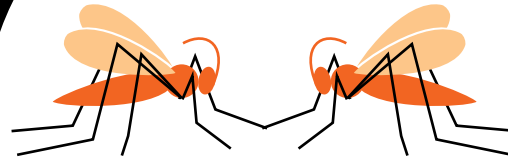


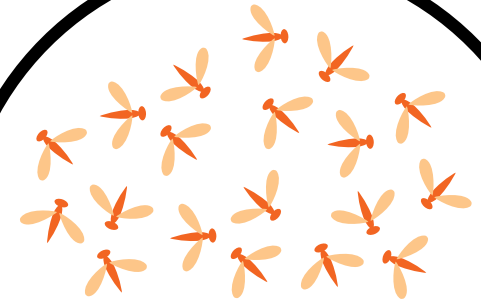
Without an interspersed refuge system, midge tolerance could break down within 10 years.



If midge tolerant wheat is grown in a pure stand, only the small number of naturally occurring virulent (resistant) midge survive.



The virulent midge would mate only with other virulent midge.

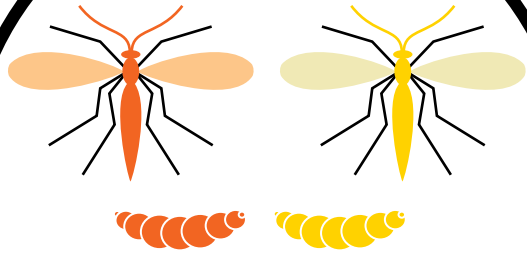


A large virulent population quickly builds and feeds on tolerant varieties.

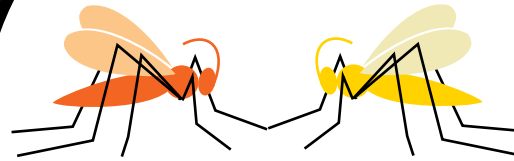


Virulent Midge Tolerant Wheat Non-virulent Midge Susceptible wheat

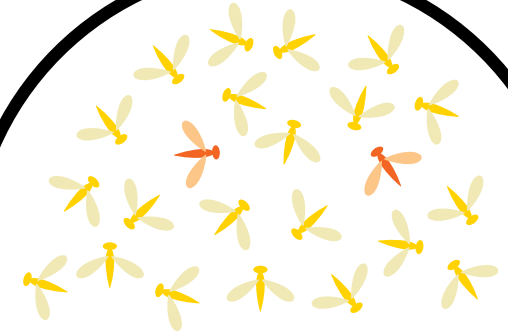
An interspersed refuge system could extend the life of midge tolerance to 90 years or longer.



Non-virulent midge survive on the 10% susceptible plants interspersed throughout the wheat field.



The non-virulent midge would inter-mate with virulent midge.



The progeny of this cross would be non-virulent. This prevents a build up of a large virulent midge population.



	Virulent Midge		Non-virulent Midge
	Tolerant Wheat		Susceptible wheat