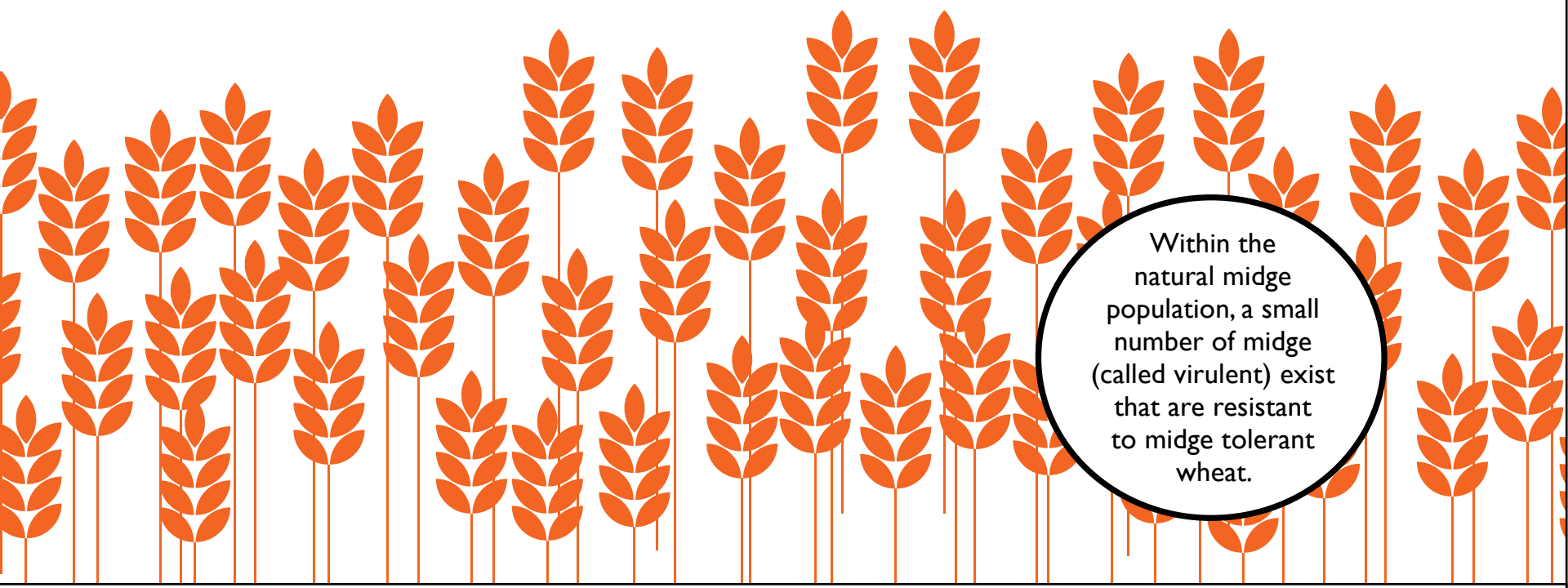
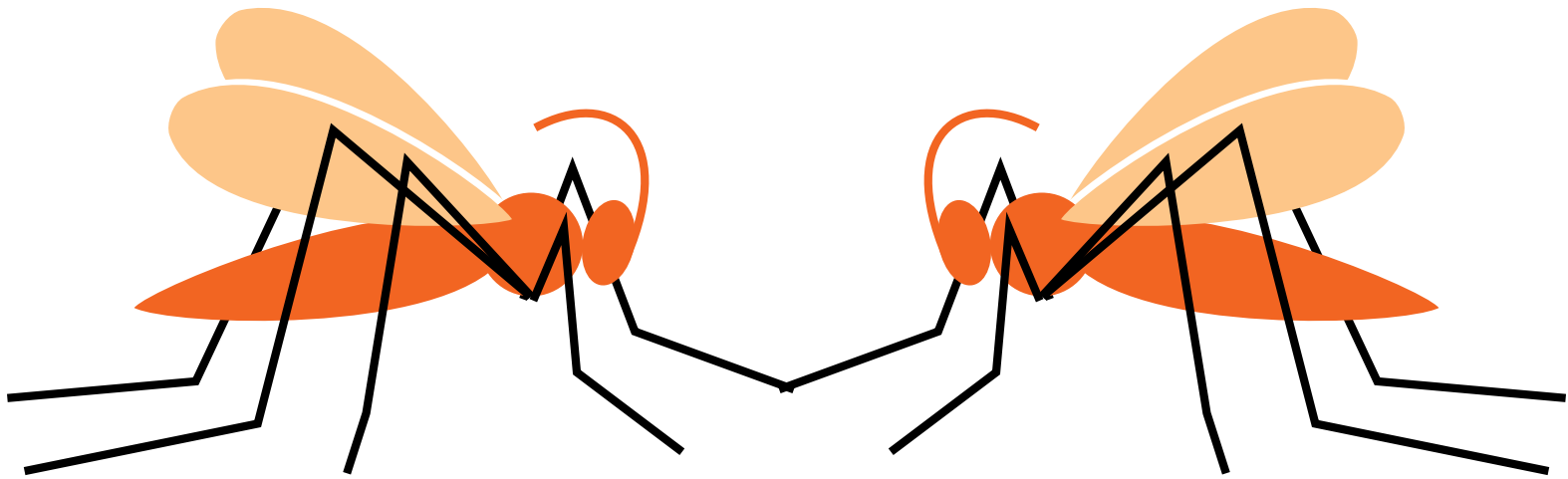


If midge tolerant wheat
is grown in a pure stand,
only virulent midge survive.



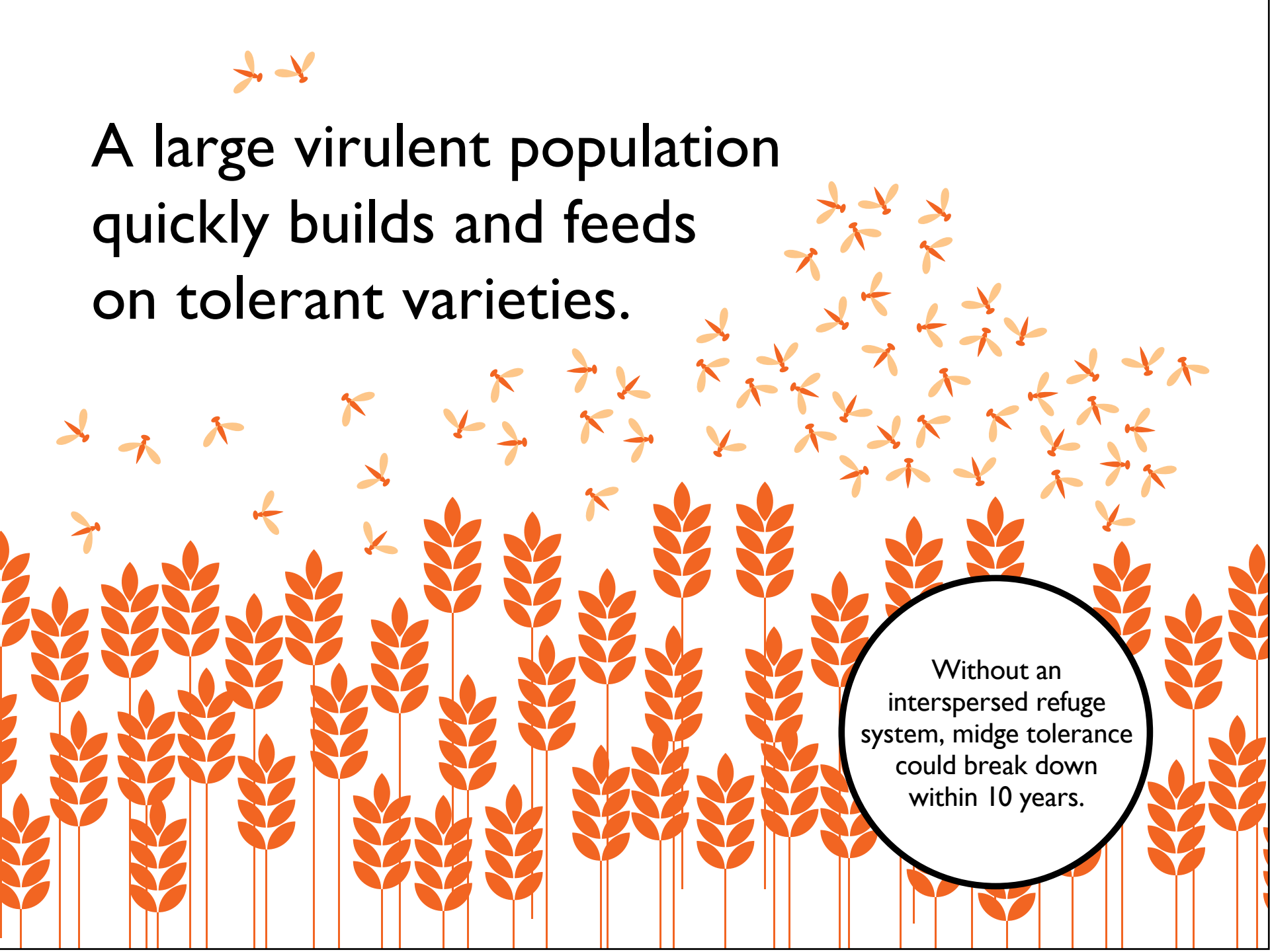
Within the
natural midge
population, a small
number of midge
(called virulent) exist
that are resistant
to midge tolerant
wheat.

The virulent midge would mate only with other virulent midge.





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

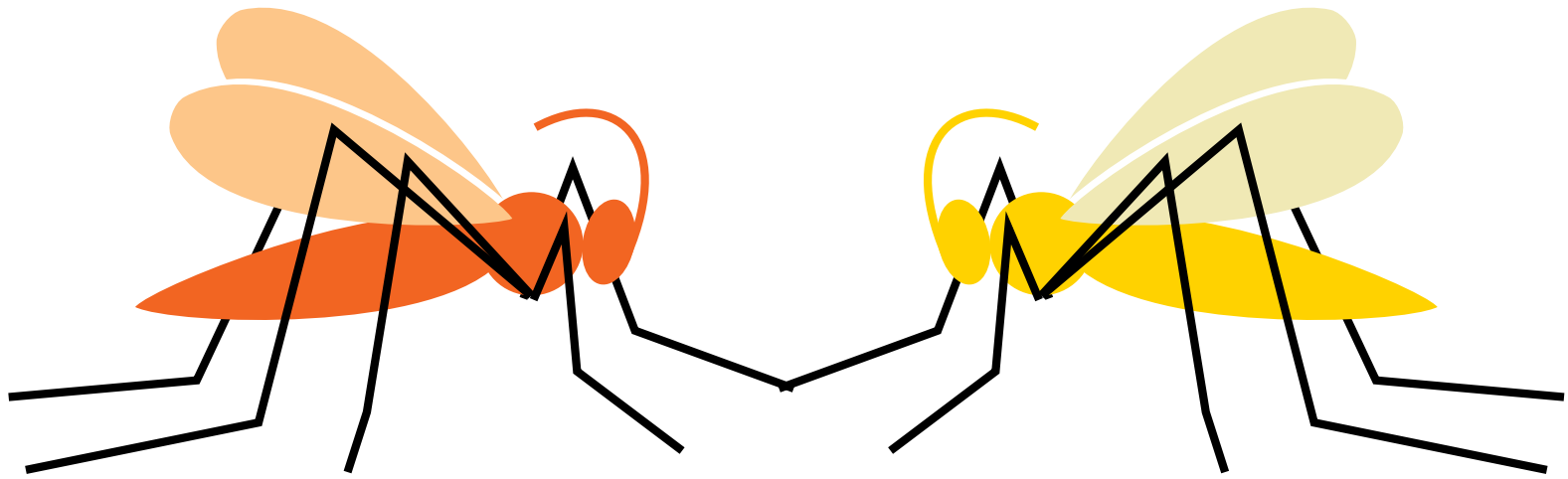


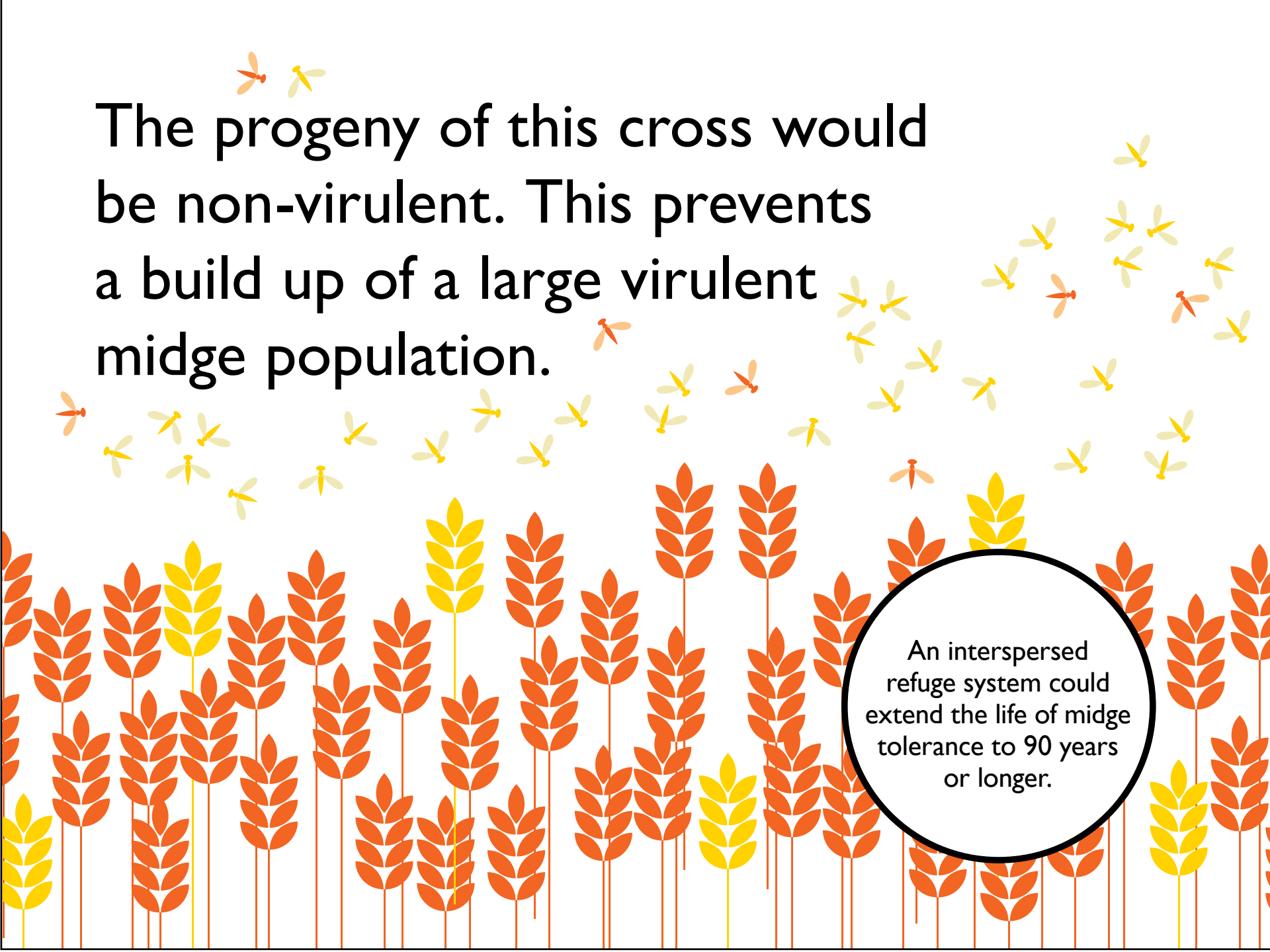
Without an interspersed refuge system, midge tolerance could break down within 10 years.

In an interspersed refuge system,
non-virulent midge survive on
the 10% susceptible plants.



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.

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