Emergence Traps for Detecting Orange Wheat Blossom Midge

Traps of different designs are used frequently to detect their presence. Emergence traps have been used to detect when Orange wheat blossom midge (OWBM) begin emerging from the soil in summer. When adult OWBM are observed in the emergence traps, then visual monitoring in the evening, of wheat fields that are in the heading to flowering stage, is very critical. Since distribution of midge through the field is not uniform, the traps are not a substitute for field scouting. The trap does provide help with accurate identification of OWBM and helps with timing scouting activities.

Emergence traps for OWBM have been used by Agriculture and Agri-Food Canada researchers in Saskatchewan during their studies on the biology of the OWBM. The general design of any emergence trap should provide for environmental conditions within the trap similar to the surrounding conditions so observations represent real situations.

Trap Construction

Materials:
- plastic tub with a snap on lid (6 to 8 inches in diameter, 8 to 10 inches in height)
- fine mesh screen
- hot glue gun
- vegetable oil (spray)

Procedure:
1. cut out the bottom of the tub
2. cut at least 2 circular holes in the sides of the tub and one hole in the lid. Diameter of the holes should be 2 to 3 inches on the side and 3 inches on the top. These holes allow for ventilation to reduce heat and moisture build up.
3. glue the screening over the holes to prevent escape of the midge.
4. spray the bottom of the lid and the side screens with the vegetable oil to provide a sticky surface for capturing OWBM.

Emergence Trapping Procedures

Traps should be placed in wheat fields where midge infestations occurred the previous year. In North Dakota, traps
should be in place before the last week of June to detect the earliest emerging OWBM. When OWBM emergence is forecast for the area, traps should be monitored daily. Once emergence of the midge is observed, scout fields that are at the susceptible growth stage (defined as wheat that is heading up to the time it is flowering). Randomly place several traps in fields to obtain a representative sample of OWBM emergence.

**Placing the Emergence Trap**

1. Select your trap location and clip away growing plants without disturbing the soil.
2. Carefully push the bottom of the trap into the soil by rotating and pushing downward to a depth of 2 to 3 inches. If the soil surface has crusted, place the trap on the surface and trace the outline of the trap with a pocket knife to break through the crust.
3. Pack soil against the outside of the trap to hold it in place. Disturb the soil inside the trap as little as possible.
4. Spray the bottom of the lid with a vegetable oil spray, and snap the lid in place.
5. Mark the location of the trap with a surveyors flag or flagging tape so the site can be easily found for checking.
6. Service the trap by removing the lid and inspecting the coated surfaces for stuck OWBM.
7. You may have to re-apply the vegetable oil to maintain a sticky surface.

**Management Guidelines**

When OWBM are detected in traps, begin evening scouting of fields that are in the susceptible growth stages. Wheat is susceptible to OWBM egg laying from heading to early flowering growth stages. If no OWBM have been found in traps yet reports around the area indicate midge activity has begun, begin scouting susceptible fields in the evening anyway.

**Treatment decisions are based on the number of adult OWBM found on wheat heads.** Treatment is recommended when an average of One Adult OWBM is found for every 4 to 5 wheat heads inspected.

If this threshold is reached, treat with Lorsban 4E-SG at a rate of 1 pint per acre. The treatment should applied according to these guidelines:

- Treat within 4 days of reaching the threshold
- The general timing of the treatment should coincide with 70 to 75% head emergence
- IF 30 to 60% of the main heads are flowering, treat within 24 hours
- IF 80% of the main heads are flowering, treatment is not recommended. Larvae of the OWBM will already be feeding on developing kernels and can not be controlled OR the field will no longer be attractive to OWBM for significant egg laying in the flowered heads.

*For more information on the Orange Wheat Blossom Midge, contact your local agricultural agent.*