KEY TO LARVAE ATTACKING SUNFLOWERS IN NORTH DAKOTA

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DAMAGE TO SUNFLOWER HEAD AND SEEDS

SUNFLOWER HEAD CLIPPED

- HAPLORYNCHITES AENEUS (HEAD CLIPPER WEEVIL)
  - BODY WITHOUT LONGITUDINAL STRIPES
    - LARVAE FEEDING ON SEED; SEED MAY HAVE SMALL HOLE
    - LARVAE MAY BE PRESENT IN SEED OR SMALL EXIT HOLE IN SEED
  - BODY WITH 4 LONGITUDINAL BLUE-GREEN STRIPES
    - LARVAE FOUND ON SURFACE OF SEED; SMALL HOLE ABSENT IN SEED
    - LARVAE BROAD AND STOUT, LONGER THAN 1/10 INCH
    - LARVAE SMALL AND THIN, ABOUT 1/10 INCH LONG

SUNFLOWER HEAD NORMAL, NOT CLIPPED OR GNARLED

- LARVAE NOT FEEDING ON SEEDS; SEEDS NOT DAMAGED
  - FEEDING IN FLESHY RECEPTACLE TISSUE
    - FRASS ASSOCIATED WITH RECEPTACLE; LEGS PRESENT, PROLEGS PRESENT
    - SULLEIMA HELIANTHANA
    - PHALONIA HOSPES SMICRONYX FULVUS
    - SMICRONYX SORDIDUS (SEED WEEVIL)

SUNFLOWER HEAD GNARLED

- CONTARINIA SCHULZI (SUNFLOWER MIDGE)
  - STRIPES ABSENT
  - BODY WITH 4 LONGITUDINAL BLUE-GREEN STRIPES
    - FRASS ABSENT; LEGS ABSENT, PROLEGS ABSENT
    - GYMNOGENA DIFFUSA
    - PHALONIA HOSPES (BANDED SUNFLOWER MOTH)
    - SMICRONYX SORDIDUS (SEED WEEVIL)
    - CONTARINIA SCHULZI (SUNFLOWER MIDGE)
    - PHALONIA HOSPES (BANDED SUNFLOWER MOTH)
    - SMICRONYX SORDIDUS (SEED WEEVIL)
DAMAGE TO SUNFLOWER FOLIAGE, STEM, AND ROOTS

YOUNG PLANT CUT AT SOIL SURFACE

- EUXOA MESSONIA (DARK-SIDED CUTWORM)
- EUXOA OCHROGASTER (RED-BACKED CUTWORM)

PLANT NOT CUT AT SOIL SURFACE

STEM DAMAGED OR LARVAE FOUND IN STEM, ROOTS, OR IN SOIL

- FRASS NOT VISIBLE EXTERNALLY

LL OF FRASS ON OUTSIDE OF STEM, USUALLY AT LEAF AXIS OR LOWER PORTION OF STEM; LARGE GAPPPING HOLE FORMED IN PLANT

- LARVAE FOUND IN SOIL
- LARVAE FOUND IN STEM

- FEEDING IN ROOTS
- NOT FEEDING IN ROOTS

- SULEIMA HELIANTHANA

- BARIS STRENUA (ROOT WEEVIL)
- SMICRONYX FULVUS
- SMICRONYX SORDIDUS (SEED WEEVILS)
- STRAUZIA LONGIPENNIS VAR. LONGITUDINALIS

- HEAD CAPSULE ABSENT
- HEAD CAPSULE PRESENT

- HEAD CAPSULE

- LEGS PRESENT, PROLEGS ABSENT
- LEGS ABSENT, PROLEGS ABSENT

- ZYGOSOMMA EXCLAMATIONIS (SUNFLOWER BEETLE)
- VANESSA CARDUI (PAINTED LADY BUTTERFLY)

- VARIOUS COLEOPTEROUS LARVAE
- CYLINDROCOPTURUS ADSPERSUS