1. Corn Rootworm Larva, *Diabrotica spp.* Rootworm larvae, about 1/2 inch long when fully grown, are creamy-white and slender, with brown heads and a dark plate on the top side of their "tails." They are found below the soil surface inside or near damaged corn roots.  

2. Corn Rootworm Pupa. Creamy-white, 1/4-inch long pupa are the transition stage between the larva and the adult beetle. Observing pupa while inspecting larval-damaged plants indicates that root feeding is nearing completion and beetles will soon be emerging.  

3. Lodging in Rootworm-Infested Corn. "Goose-necking" is a common symptom resulting from rootworm damaged roots. It is caused by partial destruction of the root system, which allows the stalks to lean or to be blown over. Then, if enough roots remain or if new roots develop, the corn again grows upright, resulting in bent or goose-necked stalks. Not all goose-necking is due to rootworm damage; healthy plants can be blown over by high winds following heavy rains. Rootworm-damaged fields are difficult to harvest if plants are lodged. Damaged plants may be weak and prone to stalk rots, and produce poor ears.  

4. Root Damage by Corn Rootworms. Very small, newly hatched larvae initially feed inside root hairs. As larvae grow, they tunnel through roots and feed on outer tissue. Larval feeding is most severe after the secondary root system is destroyed and brace roots are damaged where they contact the soil surface. Roots will appear brown, contain tunnels, or be chewed back to the base of the plant.  

5. White Grubs, Family Scarabaeidae. There are many species of white grubs. Grubs with a 2-3 year life cycle often build up in large numbers in uncultivated land, and severe damage may result when sod or set-aside acres are planted to corn. Significant annual grub infestations occasionally occur in corn and soybean rotations, but infestations are often found in silk lined tunnels near the base of damaged plants. Adults of multi-year grubs are the May/June beetles. Those with a 1-year grub cycle are Japanese beetle and masked chafer.  

6. Black Cutworm, *Agrotis ipsilon* (Hufnagel). This is the most common of the many species of cutworms that damage corn in Indiana. Black cutworm moths, arriving in the spring from southern-Gulf states, are typically attracted to green vegetation for egg laying. Because of this, infestations of larvae usually first appear in weedy areas of fields. Newly hatched larvae feed on weeds and/or emerging corn plants, leaving small, irregular holes in the leaves. Larger larvae may notch the stems of seedlings or immediately below the soil surface, causing the plants to wilt and die. Stand reductions will occur if their cutting occurs below the plant's growing point. Cutworms are usually found near damaged or adjacent plants, just under the soil surface. Black cutworm feed at night; sometimes they drag cut plants under ground to continue their feeding during the daylight hours.  

7. Corn Root Aphid, *Anuraphis maidiradicis* (Forbes). Corn plants infested by the corn root aphid grow normally until they are 4 to 10 inches tall. Then, especially under dry conditions, plants become stunted, and the leaves take on a yellowish or reddish appearance. These bluish-green aphids are about the size of a pinhead and feed by sucking plant juices while clustered on the roots. They cannot exist without the corn field ant. This small, brownish ant places the aphids on corn roots and feeds on their exudates or "honeydew." Ant hills will often be seen at the base of infested corn plants. They are most likely to cause damage on light soils and in dry years.  

8. Grape Colaspis, *Colaspis brunnea* (Fabricius). Also called the "clover white grub," this comma-shaped larva is only 1/8 of an inch long when full-grown. Fields with damaging populations typically follow clover, occasionally soybean or smartweed patches. Corn planted on infested soil suffers root damage, most notably on the root hairs. When dry conditions persist, plants begins to wilt, stunt, and turn purple when just 6 to 10 inches tall. Infested fields usually show a great variation of stunted and normal plants in the same field. By the time damage is apparent, the grubs have likely matured, pupated, and emerged from the soil as clay-colored beetles.  

9. Wireworms, Family Elateridae. Wireworms occur in all soil types and especially land that has been in sod or pasture or where a green manure crop is plowed under annually. In summer, the insects move down into the damper, cooler parts of the soil. Wireworms are slow to mature and most remain in the soil from 4 to 6 years before emerging as the adult or "click-beetle." Wireworms damage corn early in the season by feeding on germinating seeds and roots, and boring into the below-ground portion of the seedling, causing stunted or missing plants. Infestations are often spotty, with only small areas in a field seriously damaged.  

10. Seedcorn Maggot, *Delia platura* (Meigen). The legless and headless seedcorn maggot consumes and destroys seeds before germination is complete. Attack is most likely to occur in years when the soil is cold and germinating conditions are poor. Soils high in manure or decaying residue also favor infestation, because the house fly-looking adults are attracted to these areas for egg laying.  

11. Seedcorn Beetle, *Stenolophus lecontei* (Chadour) and Slender Seedcorn Beetle, *Clivinia impressilabris* LeConte. Occasionally, when cold, wet weather delays corn emergence, these small beetles consume and destroy the seed's germ, resulting in poor or no emergence. Damaged seed will be hollowed-out. They may also feed on the mesocotyl of emerging plants, causing stunting and/or reduced plant populations.  

12. Webworms, several species. Webworms vary in color from cream to dark gray and have many prominent black spots and bristly hairs. The larvae measure up to 1 inch (25 mm) in length and are often found in silk lined tunnels near the base of damaged plants. Feeding damage ranges from ragged leaves to whole plants cut-off at or below ground level. Damage is most common following sod.  

Further Information:  

The information and color illustrations presented here are designed to help you correctly identify some of the more common insects that attack corn underground. Further information on these and other insect pests' appearance, life history, damage, sampling methods, and management guidelines are available in the *Field Crops Pest Management Manual (IPM-1).* Copies of this publication, revised periodically, and other related materials are available through the Agricultural Communication Media Distribution Center, 301 South 2nd Street, Lafayette, IN 47901-1232, Phone: 765-494-6794, Fax: 765-496-1540, E-mail: Media.Order@ces.purdue.edu
CORN INSECTS - BELOW GROUND

Pest management begins with correctly identifying the problem.

1. Corn rootworm larva
2. Corn rootworm pupa
3. “Goose-necking” of corn caused by rootworm larval feeding
4. Severe corn rootworm damage
5. White grub
6. Black cutworm larvae, exposed larva at base of cut plant, and damaged plant pulled underground
7. Corn root aphid (greatly magnified)
8. Grape colaspis grub and pupa (greatly magnified), and damaged field
9. Wireworm
10. Seedcorn maggot
11. Seedcorn beetle and slender seedcorn beetle
12. Webworm in tunnel and damaged plant