

Sunflower XIV-14

Key to Field Problems Affecting Sunflowers

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Problems affecting seeds and seedlings

Plants missing or cut at base. Chewing injury may be present on leaves. Damage usually patchy, not uniform throughout field. Caterpillar-like larvae usually cream color to gray-brown, often with dark mottling or stripes can be found in soil or under debris.

.....**Cutworms**

Poor emergence; stunted leaves, stems, and roots; and yellowed and/or burned leaves.

.....**Herbicide**

carryover injury

Younger leaves pale yellow to white. A portion of first affected leaf may be yellow, but subsequently-formed leaves are uniformly chlorotic, including veins. Seedlings are stunted and usually die. Affected plants are usually scattered throughout a field, occurring singly or in small groups within a row.

.....**Apical**

chlorosis

Older leaves yellow with large necrotic patches. Leaf cupping, both upward or downward, occurs toward the tip of the leaf. Leaf senescence may occur.

.....**Potassium**

deficiency

Interveinal chlorosis on the youngest leaves.

.....**Iron**

deficiency

Seedlings exhibit damping-off, root rot, or stem rot symptoms. May be fairly uniform throughout field.

.....**Seedling blights and**

seed rots

Seedlings with light green-yellow areas spreading from the midribs of leaves. During wet conditions, a downy, whitish, fungal growth develops on the lower surface of leaves.

.....**Downy**

mildew

Missing plants usually associated with a pattern of one or more rows.

.....**Planter**

problems

Problems affecting foliage

Light brown to black, spiny caterpillars, with a pale yellow stripe on each side, feeding on leaves in late June or early July. Larvae can often be detected by webbing.

.....**Thistle caterpillar**

Defoliation caused by ¼ to ½ inch long beetles with reddish-brown head, cream-colored back with three dark reddish-brown stripes on each wing cover and/or yellowish-green, hump-backed larvae during June and July.

.....**Sunflower beetle**

Sudden death of plants (sunflower and weeds) in the affected circular area (50 to 100 feet in diameter). Stalks often have a brown to black pith.

.....**Lightning**

Brown pustules on lower leaves and sometimes stems later in the season. Severely diseased leaves yellow, dry up, and die.

.....**Rust**

Creamy white, blisterlike pustules on lower leaves. Tissue on upper leaf surface opposite the pustule is raised and yellow green.

.....**White rust**

Lower leaves mottled by yellow or brown tissue between veins. Black areas on stem near soil line. Stem interior brown to black. Severely infected plants are stunted and may ripen prematurely or die before flowering.

.....**Verticillium wilt**

Water-soaked, circular spots, gray with a dark margin and perhaps surrounded by a diffuse narrow yellow ring. Defoliation may occur.

.....**Septoria leaf spot**

Lighter green to definite yellowing of leaves. Definite chlorotic yellowing of lower leaves later in season.

.....**Nitrogen deficiency**

Stunted plants. Necrotic gray lesions possible on older leaves.

.....**Phosphorus deficiency**

Plants stunted, upper leaves distorted, leaves may wilt.

.....**Zinc deficiency**

Problems affecting the stem

Small spotted weevils found on plants of two to four leaf stage from June to July. Creamy white, C-shaped, ¼ inch larvae found in stem, forming pupation chamber at base of plant at end of season.

.....**Sunflower**

stem weevil

Stalks black on the outside, hollow inside with ink-black, watery tissue breakdown. Lodging after flowering, heads with soft rot.

.....**Bacterial**

stalk rot

Premature ripening of stalks and poor filling of heads. Stalks with gray basal discoloration and shredded internal tissue with small black flecks.

.....**Charcoal rot**

Lower leaves mottled by yellow or brown tissue between veins. Black areas on stem near soil line. Stem interior brown to black. Severely infected plants are stunted and may ripen prematurely or die before flowering.

.....**Verticillium**

wilt

Leaves first develop petiole lesions, then large dark patches on leaves and flowers, then leaves wilted and dry. Stalks often dark-brown to black. Premature death may occur in a circular patch in the field, although scattered plants may die. Associated with moist conditions at flowering.....

.....**Phoma**

black stem

Brown areas surrounded by yellow tissue on the apical end or edge of the leaf. Leaf veins and petioles dark. Brown to black cankers at petiole base, later turning ash gray. Stem spots girdling stem. Internodes may be discolored and hollow. Plants ripen prematurely with reduced oil content.

.....**Phomopsis brown**

stem canker

Wilted plants with soft, water-soaked canker girdling the stem for at least two to four feet above soil line. A white, cottonlike mold may grow over the diseased area. Heads may rot and shred. Seed hulls may be discolored and scurfy. Sclerotia bodies replace the pith.

.....**Sclerotinia**

Problems affecting the roots

Black, oval, ¼ inch weevils found at the soil surface in June. Larvae found in stalks by mid-July. Forms pupation cell around roots in fall. Associated with stalk breakage and Phoma black stem disease.

.....**Sunflower root weevil**

Oval, ½ to 1 inch reddish-brown to black beetle gouging roots.

.....**Carrot beetle**

Problems affecting the head

Tan-gray moths present at bloom. Caterpillars with dark and light stripes on body found tunneling in seeds during July, August.

.....**Sunflower moth**

Moths with two dark bands on front wings. Cream-colored caterpillars found feeding in receptacle area in July or August.

.....**Sunflower bud moth**

Yellowish moths with brownish-black band on front wings. Pink- to reddish-brown caterpillars feeding on heads to early October.

.....**Banded sunflower moth**

Small grey or reddish-brown weevils on heads. Small, white larvae feed in interior of seed.

.....**Seed weevils**

Shiny-black, ½ inch weevil found clipping heads in mid-July to early August. Cream-colored, C-shaped grubs found in fallen heads.

.....**Head-clipper weevil**

Flies with brown lace-like wings in early July and again in August. Cream-colored, headless maggots found either tunneling in corolla of young blooms or in seeds.

.....**Sunflower seed maggot**

Flies with bright green eyes and yellowish-brown mottled wings on buds in July. Cream-colored, headless maggots tunnel in spongy tissue of the receptacle.

.....**Sunflower receptacle maggot**

Brown discoloration of disk flowers and bracts that turn black after rain, associated with temperatures above 100 F.

.....**Bract**
necrosis

Flowers remain green, because small, leaflike structures replace floral parts. Affected portions die with a narrow brown stripe extending down the stem. A black slimy rot on the stalk below the head may replace the head symptoms. Infected plants may be stunted or break over.

.....**Aster**
yellows

Leaves wrinkled, distorted and plant may be stunted. Normal-sized heads remain upright and contain mostly empty seeds.

.....**Downy**
mildew

Abnormal bending or twisting of stems and/or leaf petioles. Growth slowed or stopped with young leaves cupped and/or elongated. Plants may die, remain green without further growth, or later resume growth. Multiple heads may develop, and heads may be malformed or partially filled.

.....**Herbicide**
drift

Younger leaves with mosaic and chlorotic rings. Plants are stunted, perhaps with narrow, light brown streaks on petioles and stems. Malformed heads producing shriveled seed.

.....**Sunflower**
mosaic

Dark-brown, oval, necrotic spots occur on the heads, leaves, petals, petioles, and stems. Stem lesions eventually girdle stem. Plant death, defoliation and lodging common.

.....**Alternaria**

Wilted plants with soft, water-soaked canker girdling the stem for at least two to four feet above soil line. A white, cottonlike mold may grow over the diseased area. Heads may rot and shred. Seed hulls may be discolored and scurfy.

.....**Sclerotinia**

Brown, soft head tissue. Strands of fungus visible in wet weather or in receptacle. Tissue appears to shred as head dies.

.....**Rhizopus**
head rot

Categories: Sunflower, Diseases, Insects, Nutrient Deficiencies, Environmental, Field Key, Sunflowers

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