



17.9 Viral disease; color mottling on a rhubarb leaf.



18.1a Bacterial canker; lesions on tomato leaves; see also 25.1.



18.1b Bacterial canker; discoloration of stem tissues in tomato.



18.1c Bacterial canker; raised “bird’s eye” lesions on a tomato fruit.



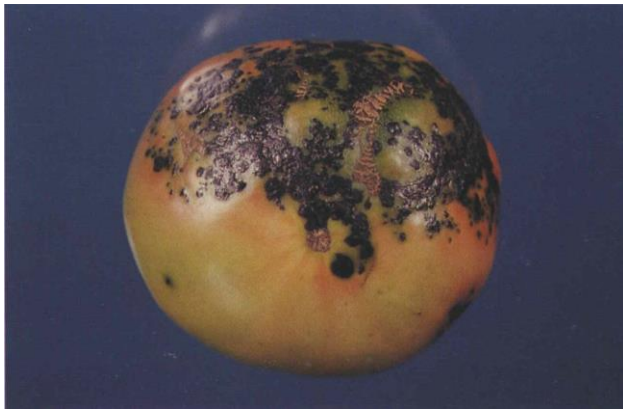
18.2 Bacterial soft rot; decay on ripe tomato fruits.



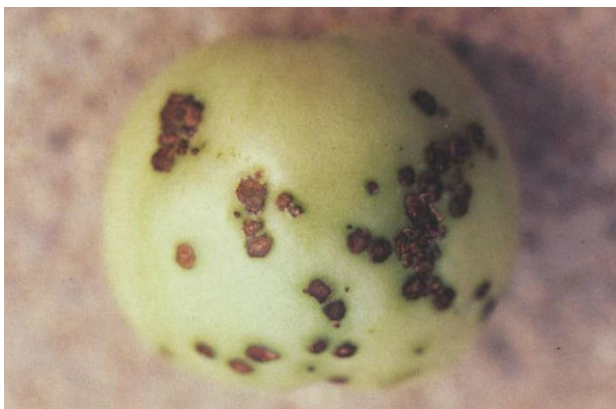
18.3a Bacterial speck; lesions on tomato leaves.



18.3b Bacterial speck; lesions on tomato fruits.



18.4a Bacterial spot; black lesions on tomato fruit.



18.4b Bacterial spot; corky lesions on tomato fruit.



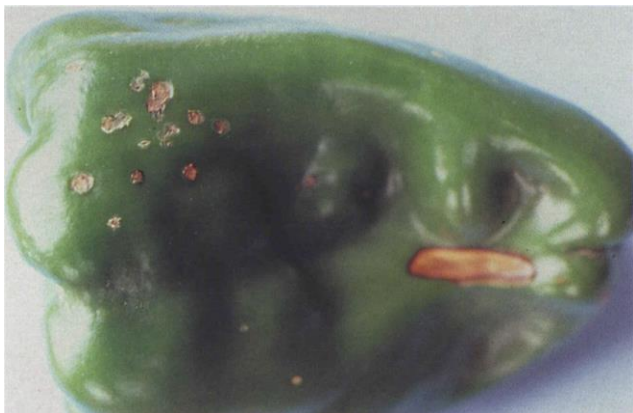
18.4c Bacterial spot; lesions on ripe tomato fruit.



18.4d Bacterial spot; lesions on pepper leaves.



18.4e Bacterial spot; lesions on pepper leaves.



18.4f Bacterial spot; lesions on pepper fruit.



18.6a Anthracnose; young lesions on ripe tomato fruit.



18.6b Anthracnose; sunken lesion on pepper fruit.



18.6c Anthracnose; mature lesions with dark centers on ripe tomato fruit.



18.8a Early blight; lesions on eggplant leaves.



18.8b Early blight; characteristic target-spot lesions on tomato leaves.



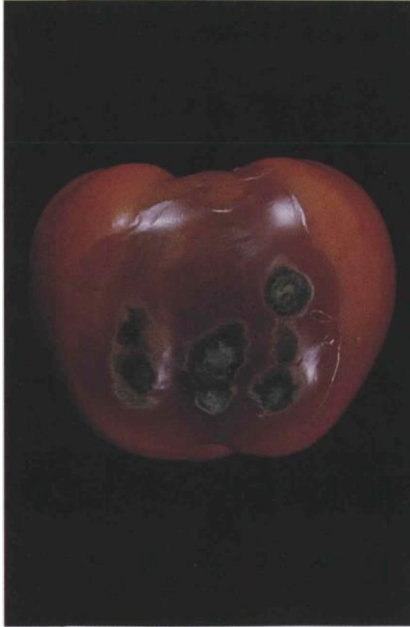
18.8c Early blight; tomato fruit rot caused by *Alternaria solani*; characteristic blackened area at stem end.



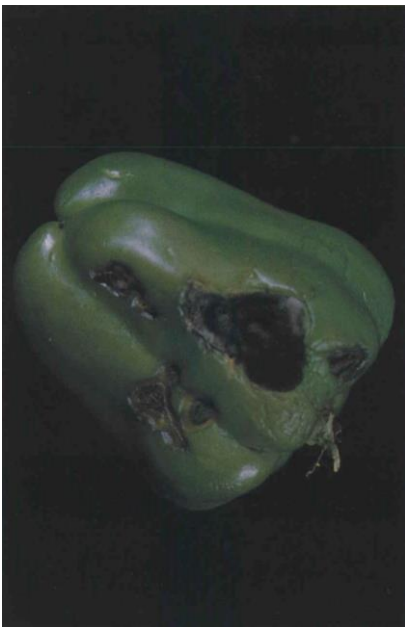
18.8d Early blight; lesions on eggplant fruit.



18.8e Early blight; lesions on pepper fruit.



18.8f *Alternaria* fruit rot; lesions on tomato fruit caused by *Alternaria alternata*.



18.8g *Alternaria* fruit rot; lesions on pepper fruit caused by *Alternaria alternata*.



18.11a Gray mold; leaf infection on tomato.



18.11b Gray mold; ghost spot lesions on tomato fruit; see also 25.12d.



18.11c Gray mold; advanced decay of tomato fruit.



18.12a Late blight; characteristic lesion on tomato leaf.



18.12b Late blight; mature lesions on tomato leaf.



18.12c Late blight; stem necrosis on tomato.



18.12d Late blight; advanced decay of tomato fruit; note white mycelium of *Phytophthora infestans*.



18.13a Septoria leaf spot; lesions on tomato leaf.



18.13b Septoria leaf spot; lesions with black pycnidia in tan centers.



18.13c Septoria leaf spot; lesions on tomato stem.



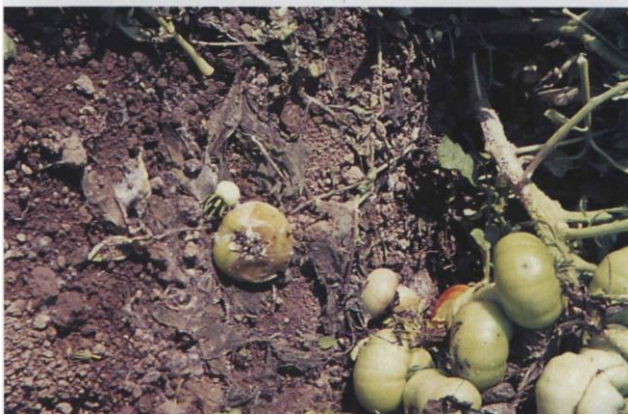
18.14a Verticillium wilt; general wilting, chlorosis and necrosis of eggplant foliage.



18.14b Verticillium wilt; early yellowing symptoms on eggplant leaves.



18.14c Verticillium wilt; wilted eggplant leaves with necrotic lesions.



18.15a White mold; tomato stem and fruit infected by *Sclerotinia minor*.



18.15b White mold; collar rot on tomato plants caused by *Sclerotinia minor*.



18.15c White mold; lesions on tomato stem and petiole near ground level.



18.15d White mold; tomato stems with gray mycelium and black sclerotia of *Sclerotinia sclerotiorum*.



18.15e White mold; infected tomato stems often turn white.



18.17 Cucumber mosaic; dual infection with tobacco etch virus in pepper.



18.18a Tomato mosaic; distortion and narrowing of leaflets; see also 25.18a, 25.21a-c.



18.18b Tomato mosaic; lesions on tomato fruit.



18.18c Tomato mosaic; fruit lesions following early infection of cotyledons.



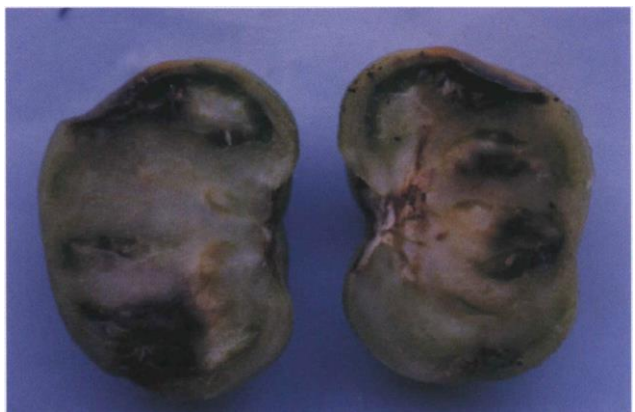
18.18d Tomato mosaic; grayish discoloration of green fruit caused by internal browning of the fruit wall.



18.18e Tomato mosaic; internal browning of fruit wall near stem end.



18.21a Blossom-end rot; symptoms on tomato fruit.



18.21b Blossom-end rot; internal breakdown of tomato fruit.



18.21c Blossom-end rot; early symptoms on pepper fruit.



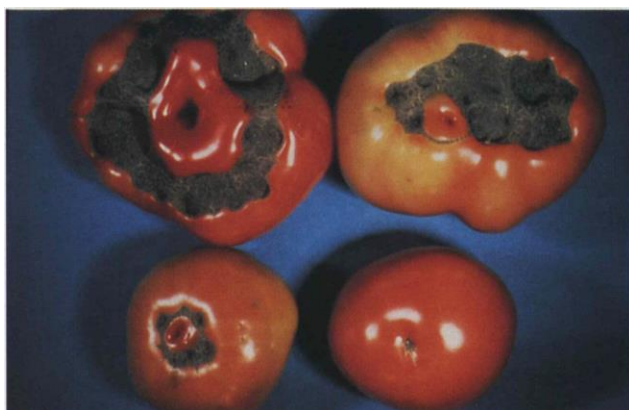
18.21d Blossom-end rot; sunken, brown lesion (advanced symptom) on pepper fruit.



18.22a Blotchy ripening; external symptoms on a ripening tomato fruit.



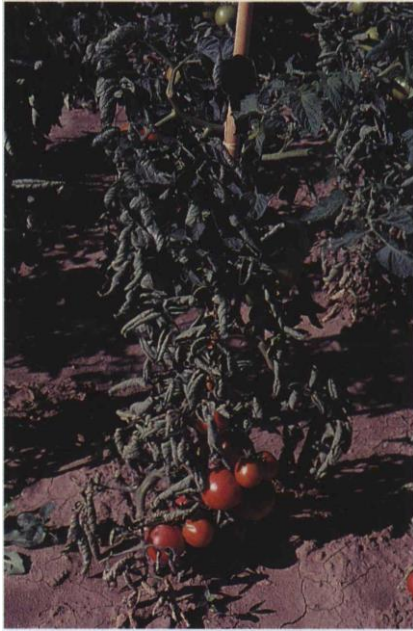
18.22b Blotchy ripening; uneven coloration of internal tissues of a tomato fruit.



18.23 Catface; symptoms on ripe tomato fruit.



18.25 Growth cracks; radial and concentric cracks on tomato fruit.



18.26a Leafroll; a response to moisture stress, cultivar related.



18.26b Herbicide injury; leaf cupping in tomato from 2,4-D drift.



18.26c Herbicide injury; pepper fruit deformed by 2,4-D.



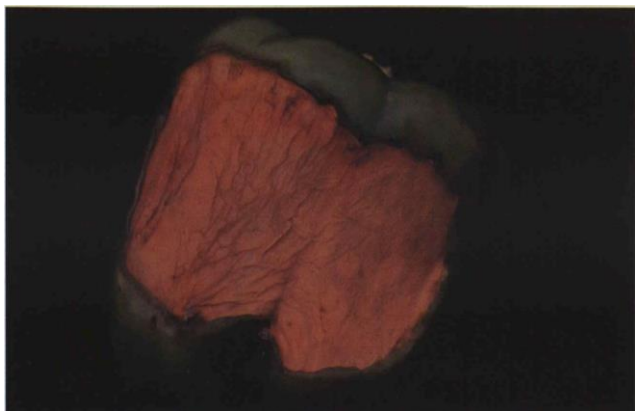
18.26d Herbicide injury (2,4-D); fruit (right) has over-developed placental tissues and lacks seeds and jelly.



18.28 Puffiness; symptoms in a green tomato fruit.



18.29a Sunscald; symptoms on tomato fruit.



18.29b Sunscald; severely affected pepper fruit.



18.30 Northern root-knot nematode; small galls and root branching symptoms on tomato.



18.35a Variegated cutworm; damage to tomato fruit.



18.35b Variegated cutworm; larva feeding on tomato fruit.



18.35c Variegated cutworm; larvae, showing distinctive back and side markings.



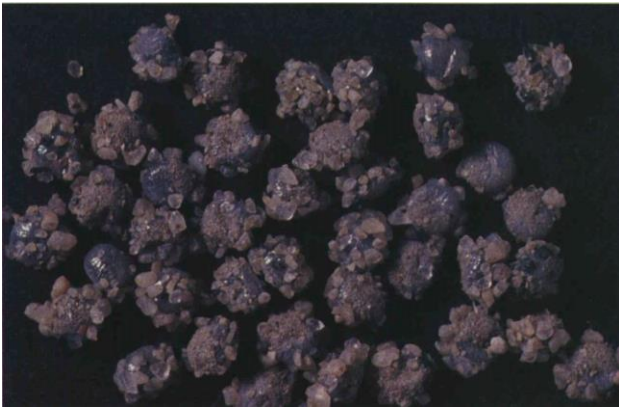
18.35d Dark-sided cutworm; larvae, showing range of color variation.



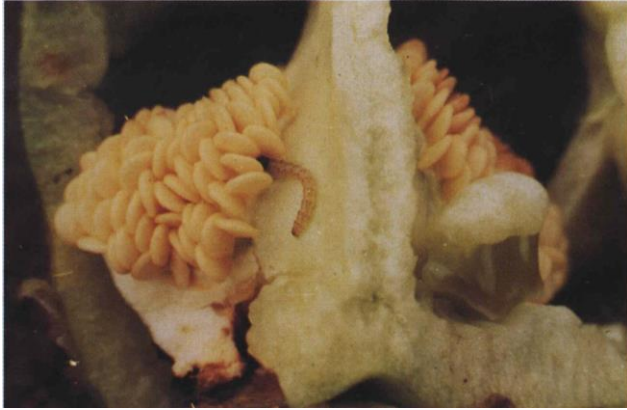
18.35e Dark-sided cutworm; pupa.



18.35f Dark-sided cutworm; adult; wingspan 35-40 mm.



18.35g Dark-sided cutworm; eggs with adhering soil.



18.36a European corn borer; larva feeding in a pepper fruit.



18.36b European corn borer; larval entry under pepper stem cap; note sawdust-like frass around entry hole.



18.37a Hornworm; adult moth, tomato hornworm; wingspan \pm 130 mm



18.37b Hornworm; larva (head at left).



18.37c Hornworm; extensive feeding damage on tomato fruit.



18.38a Pepper maggot; horse nettle (shown here) is an alternative host.



18.38b Pepper maggot; female laying an egg in pepper fruit.



18.38c Pepper maggot; damage to inside of pepper fruit.



18.38d Pepper maggot; adult female; length ± 7.5 mm.



18.38e Pepper maggot; egg in pepper fruit (cutaway view).



18.38f Pepper maggot; larva tunneling toward core of fruit after emerging from egg (above).



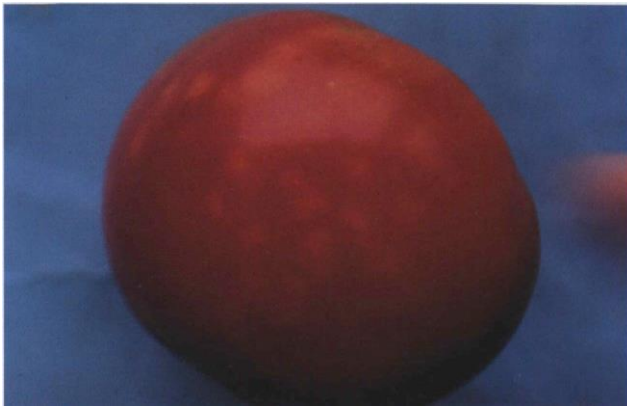
18.38g Pepper maggot; pupae, showing different shades of color; length \pm 8 mm.



18.39 Sap beetle; adult, four-spotted sap beetle; length 4-7 mm.



18.40a Stink bug; adult (length 10-15 mm) and cloudy spot feeding damage on tomato fruit.



18.40b Stink bug; cloudy spot damage on ripe tomato fruit.



18.42a Tarnished plant bug; feeding injury to tomato fruit.



18.42b Tarnished plant bug; nymph, 1st instar.



18.42c Tarnished plant bug; nymph, 5th instar.



18.42d Tarnished plant bug; adult; length 5-6 mm.



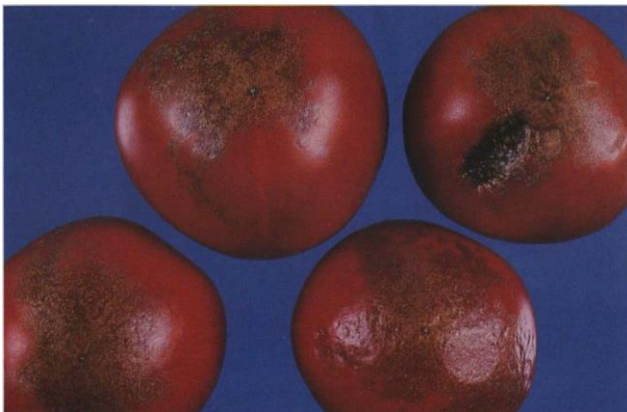
18.42e Tarnished plant bug; eggs.



18.42f Vinegar fly; larva (*Drosophila* sp.).



18.42g Vinegar fly; adult female (*Drosophila* sp.); length ± 2.5 mm.



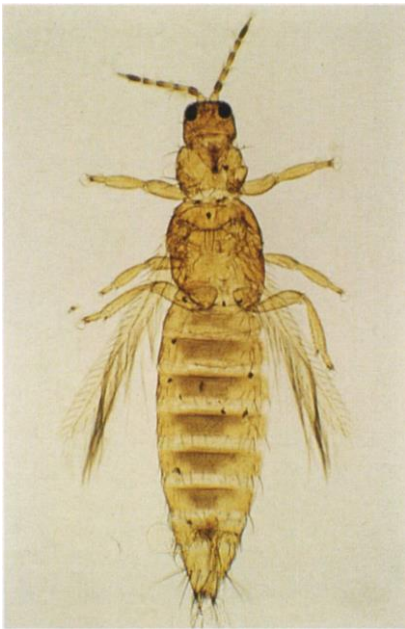
18.42h Western flower thrips; feeding damage to tomato fruit.



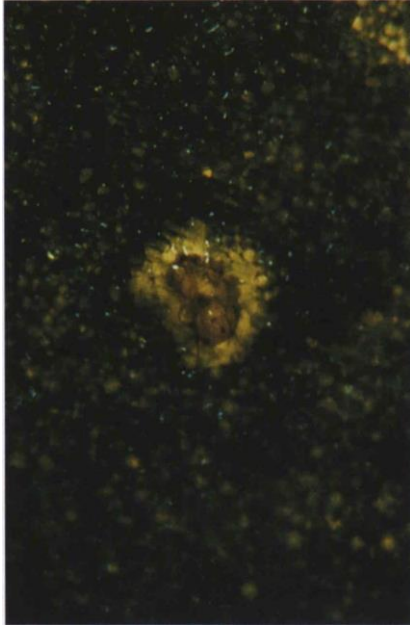
18.42i Western flower thrips; feeding damage to pepper fruit.



18.42j Western flower thrips; propupa; note wing buds; see also 22.34*e*.



18.42k Western flower thrips; adult; length 1-2 mm.



18.42m Western flower thrips; eggs inserted in leaf; note egg-laying scar.



18.43 Gray garden slug; adults, slime trails and feeding damage on tomato fruit.