



## Seasonal Timing of Diseases - Vegetables

Pest Name	Host Crops	Causal Organism	Mode of Carryover	Mode of Transfer	Seedlings	Roots	Stems / Branch	Foliage	Flowers	Fruit	Seeds	Tubers	Storage	Timing	Control
<b>Aster Yellows</b>	Wide range	<i>mycoplasma-like organism</i>	Infected host plants	Aster Leafhopper	Y	Y	Y	Y	Y	Y	-	-	N	June to Sept	Control insect vector
<b>Bacterial Soft Rot</b>	Wide range	<i>Pectobacterium carotovora subsp carotovora or atroseptica</i>	Soil borne	Via wounds / weak points; in storage: wash water	N	Y	Y	Y	N	Y	N	Y	Y - spreads	Typically post-harvest	crop rotation; careful post-harvest handling;
<b>Botrytis Grey Mold</b>	Wide range	<i>Botrytis cinerea</i>	Spores; mycelium; sclerotia	Spores; mycelium	Y	-	-	Y	Y	Y	-	-	Y	Any point in the growing season with suitable conditions	Adequate fertilizer; protective sprays; timely harvests
<b>Clubroot</b>	Brassica crops	<i>Plasmodiophora brassicae</i>	Resting spore in soil	Germinating resting spores; transfer of spores in water, soil, etc.	Y	Y	-	indirect - stunting	-	-	-	-	N	Any point in summer - typically in early summer	Rigorous sanitation; Long rotations; Avoid contamination
<b>Common Blight</b>	Beans	<i>Xanthomonas campestris pv. phaseoli</i>	Infected seed; contaminated soil	Rain splash; physical contact; insects, etc.	-	-	-	Y	-	Y	Y	-	N	Any point in summer	Use clean seed; bury residues
<b>Common Scab</b>	Potato, beets, carrots, turnips, rutabaga, radish	<i>Streptomyces scabies</i>	Soil borne; infected seed	Soil to tuber (via lenticels)	-	-	-	-	-	-	-	Y	Visible; does not spread or increase	Infection occurs during 5 weeks (flowering onward)	Clean seed; seed treatments; even watering; variety selection
<b>Downy Mildew</b>	Beets, spinach, Cole crops, radish, rutabaga/turnip, lettuce, rhubarb, onion, garlic, peas	<i>Perenospora spp. (depends on host crop)</i>	Oospores in soil, debris, plant parts	Spores - water splash, wind	Y	Y - crown infect	-	Y	-	-	-	-	N	Depends on weather	Crop rotation; bury debris; protective sprays





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Early Blight	Potato, tomato, pepper, eggplant	<i>Alternaria solani</i>	Soil, crop residues, alternate hosts	Spores - soil to tissue transfer; rain splash	-	-	-	Y	-	Y	-	Y	Y - does not spread	Mid-late summer	Crop rotation; protective sprays; avoid plant stress
Fusarium dry rot	Potato	<i>Fusarium sambucinum</i> , <i>F. solani</i> , <i>F. coeruleum</i> , <i>F. avenaceum</i>	Contaminated soil or infected seed	Wounds	-	-	-	-	-	-	-	Y	Y; does not spread	Wounding during harvest or post-harvest	Careful handling during harvest & post-harvest
Halo Blight	Beans	<i>Pseudomonas syringae</i> pv. <i>phaseolicola</i>	Infected seed; contaminated soil	Rain splash; physical contact; insects, etc.	-	-	-	Y	-	Y	Y	-	N	Any point in summer	Use clean seed; bury residues
Late Blight	Potato, tomato, pepper, eggplant	<i>Phytophthora infestans</i>	On living tissues (tubers, etc.)	Sporangia; rain splash; on storm fronts	Y	-	-	Y	-	Y	-	Y	Y	Any point in summer - depends on point of infection	Monitoring / early detection; protective sprays; clean seed potatoes
Neck rots	Bulb veg	<i>Botrytis aclada</i> , <i>B. byssoidea</i> , <i>B. squamosa</i>	Sclerotia in bulbs, debris, cull piles, volunteers, soil	Spores via air; wounding at harvest	-	-	-	Y - bulbs	-	-	-	-	Y - increases in severity & as symptomless bulbs develop	Mid-late summer to harvest	Reduce inoculum; avoid wounding; cure after harvest
Pink Rot	Potato	<i>Phytophthora erythroseptica</i>	Soil borne	Infection of stolons, eyes, lenticels; via wounds at harvest	-	-	-	-	-	-	-	Y	Y - spreads in storage	Late summer; at harvest	Crop rotation; Cull after harvest; fungicides applied around planting or tuber set
Powdery Mildew	Cole crops, peas, lettuce, rhubarb, cucurbits	<i>Erysiphe polygoni</i> ; <i>E. cichoracearum</i>	Cleistothecia (sexual spores)	Windblown spores	-	-	Y	Y	-	Y	-	-	N	Spring or fall	Good airflow; crop rotation; remove inoculum





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<b>Pythium root rots</b>	Wide range	<i>Pythium spp.</i>	Soil borne mycelium, sporangia, oospores	Germinating oospores	Y	Y	-	Y - seedling - indirect	-	-	-	-	N	Early season or whenever young plants are present	Good drainage; seed treatments
<b>Rhizoctonia / Black Scurf</b>	Potato	<i>Rhizoctonia solani</i>	Sclerotia in soil or on seed tubers	Soil to plant parts	Y	Y	Y	-	-	-	-	Y	Y - visible - doesn't increase or spread	Early spring or late season	Seed treatments; good growing conditions
<b>Sclerotinia rot</b>	Carrots, lettuce, beans, Cole crops, potatoes, peas, cucurbits, solanaceous crops, etc.	<i>Sclerotinia sclerotiorum</i>	Sclerotia in soil or on plant debris	Spores; germinating sclerotia	Y	Y	Y	Y	-	-	-	-	Y	Any point in summer	Remove inoculum; protective sprays; manage in post-harvest
<b>Slippery Skin</b>	Bulb veg	<i>Pseudomonas gladioli pv. allicola</i>	Soil borne	Rain splash of soil; via wounds	-	-	Y - neck area	Y - bulbs	-	-	-	-	Y - doesn't spread	Mid-late summer	Careful irrigation; proper post-harvest handling
<b>Silver Scurf</b>	Potato	<i>Helminthosporium solani</i>	In soil or in debris in soil	Soil to tuber	-	-	-	-	-	-	-	Y	Y	Before or at harvest	Seed treatments; quick harvest; cold storage
<b>Verticillium Wilt</b>	Potato, tomato, pepper, eggplant, cucurbit crops	<i>Verticillium albo-atrum;</i> <i>V. dahliae</i>	Micro-sclerotia or mycelium on crop debris or in soil	Spores or spores in soil	Y	Y	Y - indirect	Y - indirect	-	-	-	-	N	Depends on weather & crop stage	Seed, soil treatment; clean plants

