

INTERACTIONS between NUTRIENTS/SOIL CONDITIONS and PESTS, DISEASES & PHYSIOLOGICAL DISORDERS

PEST, DISEASE or CONDITION:	CROP	SOIL or NUTRIENT CONDITION	EFFECT on PROBLEM	REFERENCE
HULL ROT	ALMOND	Hi N	Worse	Teviotdale (1996)
BROWN ROT, BLOSSOM	ALMOND	Hi N	Worse	Teviotdale (1996a)
SHOT HOLE	ALMOND	Hi N	Worse	Teviotdale (1996a)
BACTERIAL CANKER	ALMOND	Lo N	Worse	UC IPM (2005)
APHID	APPLE	Hi N	Worse	U Mass (2004)
BITTER PIT	APPLE	Hi N, Lo Ca	Worse	Bacon (1996)
BITTER PIT	APPLE	Hi N, Lo Ca	Worse	Shear (1975)
DELAYED MATURITY	APPLE	Hi N	Worse	Bacon (1996)
EUROPEAN RED MITE	APPLE	Hi N	Worse	van de Vrie, McMurty, Huffaker (1972)
POSTHARVEST ROT	APPLE	Hi N	Worse	Bacon (1996)
PREMATURE FRUIT DROP	APPLE	Lo B	Worse	Turner (1970)
REPLANT DISEASE	APPLE	CaCO3	Better	Utkhede (1989)
TWO SPOT MITE	APPLE	Hi N	Worse	van de Vrie, McMurty, Huffaker (1972)
EUROPEAN RED MITE	APPLE	Hi N – egg laying	Worse	Brunkel, Post (1959)
2 SPOT MITE	APPLE	Hi N	Worse	Rodriguez (1958)
FIREBLIGHT	APPLE	Hi N	Worse	Hildebrand, Heinicke (1937)
FIREBLIGHT	APPLE	Hi N	Worse	Fallahi, Mohan, (1991)
FIREBLIGHT	APPLE	Hi N	Worse	van der Zwet, Keil (1979)
FIREBLIGHT	APPLE	Hi N	Worse	Hildebrand, Heinicke (1937)
BROWN ROT	APRICOT	Lo K	Worse	Griffith (1975)
DELAYED MATURITY	APRICOT	Hi N	Worse	Bacon (1996)
PIT BURN	APRICOT	Hi N	Worse	Bacon (1996)
FRUIT CRACKING	CHERRY	Ca foliar	Better	Westwood (1978)
PHYTOPHTHORA	CHERRY	Poor drainage	Worse	Mircetich, Schreader, et al (1979)
SOFT FRUIT	CHERRY	Hi K, Lo Ca	Worse	Curwen, McArdle & Ritter (1966)
STECKLENBERG DISEASE	CHERRY	Lo P, Ca, & Mg	Worse	Baumann, von Olfers (1976)
POST HARVEST DECAY	CHERRY	Ca foliar	Better	Rupert, Vikiputz, Southwick, et al (1997)
PRE HARVEST CRACKING	CHERRY	Lo Ca	Worse	Shear, (1975)
PHYTOPHTHORA	EUCALYPTUS	Good N/P Balance	Better	Halsall, Forrester, Moss (1983)

2 SPOT MITE	FRUIT TREES	Lo P	Worse	Harries (1966)
MITES	FRUIT TREES	Low N	Better	Post (1961)
WINTERKILL	FRUIT TREES	Low K	Worse	Griffith (1975)
MEALYBUG	FRUIT TREES	Hi vigor	Worse	Wamer (1992a)
LEAFHOPPERS	FRUIT TREES	Hi N:C ratio	Worse	Brodbeck, Andersen, Mizell (1996)
BLACK LEAF	GRAPE	Lo K	Worse	Pearson, Goheen (1988)
BLOSSOM SHATTER	GRAPE	Hi N, Lo Zn or B	Worse	Christensen, Kasimatis, Jensen (1978)
BLOSSOM SHATTER	GRAPE	Lo P	Worse	Cook, Ward, Wicks (1983)
BOTRYTIS ROT	GRAPE	Hi N	Worse	Delas, Molot, Soyer, (1982)
BOTRYTIS ROT	GRAPE	Hi N, Poor Ca:Mg:K	Worse	Fregoni (1983)
BOTRYTIS ROT	GRAPE	Hi N, Lo K	Worse	Munson (1985)
BOTRYTIS ROT	GRAPE	Hi N Lo Ca & K	Worse	Young (1988)
CROWN GALL	GRAPE	Ni N, Lo K	Worse	Munson (1985)
DELAYED MATURITY	GRAPE	Hi N	Worse	Bacon (1996)
DOWNEY MILDEW	GRAPE	Hi N	Worse	Bavaresco, Eibach (1987)
LEAFHOPPER	GRAPE	Hi water & vigor	Worse	Daane, Williams, Yokota, Steffan (1995)
LEAFHOPPER	GRAPE	Hi N	Worse	Mayse, Roltsch, Roy, (1991)
NEMATODES	GRAPE	Lo Ca	Worse	Traynor (1986)
PACIFIC MITE	GRAPE	Hi N	Worse	Wilson (1988)
MITES	GRAPE	Hi N:P ratio	Worse	Chaboussou (1960)
PHOSMOSIS CANE SPOT	GRAPE	Hi N	Worse	Bacon (1996)
PHOSMOSIS CANE SPOT	GRAPE	Hi N	Worse	Katz (1999)
PHYTOPHTHORA	GRAPE	Wet, acid soil	Worse	Wolpert, Walker, Weber (1992)
POWDERY MILDEW	GRAPE	Hi N	Worse	Bavaresco, Eibach (1987)
POWDERY MILDEW	GRAPE	Foliar P	Better	Reuveni, M. Reuveni, R (1995)
POWDERY MILDEW	GRAPE	Hi N	Worse	WSU (1995).
RACHIS NECROSIS	GRAPE	Hi N, poor Ca:Mg:K	Worse	Cline (1987)
WATER BERRY	GRAPE	Hi N	Worse	Christensen, Boggero (1985)
BUD & STEM NECROSIS	GRAPE	Hi N	Worse	Bacon (1996)
FROST RESISTANCE	GRAPE	Hi Ca, P	Better	Eifert, Szoeko, Varnai, Nagy (1986)
BOTRYTIS ROT	GRAPE	Hi Ca	Better	Chardonnet, Doneche (1995)
BOTRYTIS ROT	GRAPE	Pre harvest Ca spray	Better	Miceli, Ippolito, Linsalata, Nigro (1999)
YOUNG VINE DECLINE/ESCA	GRAPE	Low Zn, B, Mg, K	Worse	Stamp (2003)
BOTRYTIS	KIWI	Hi N:Ca	Worse	Prasad (1992)

BROWN ROT	NECTARINE	Hi N	Worse	Daane et al (1995)
BROWN ROT	NECTARINE	Ca spray	Better	Adaskaveg (1996)
PEACH TWIG BORER	NECTARINE	Hi N	Worse	Daane et al (1995)
PEACH TWIG BORER	NECTARINE	Hi N	Worse	Weinbaum, Johnson, DeJong (1992)
POWDERY MILDEW	NECTARINE	Foliar P	Better	Reuveni, M. Reuveni, R (1995)
NECTARINE POX	NECTARINE	Hi N,K, Mg; Lo Ca, B	Worse	Ogawa, et al (1995)
ROOT ROT	ORANGE	Lo Ca, Hi P	Worse	Chapman (1965)
THRIPS	ORANGE	Hi N	Worse	Bacon (1996)
ORCHARD DECLINE	ORCHARDS	Lo Ca	Worse	Traynor (1986)
BROWN ROT	PEACH	Ca sprays	Better	Adaskaveg (1996)
SPLIT PIT	PEACH	Hi N	Worse	Bacon (1996)
PHYTOPHTHORA	PEACH	Poor drainage	Worse	Burnham (1996)
BLACK END	PEAR	Lo Ca	Worse	Peterson & Stevens (1994)
FREEZE DAMAGE	PEAR	Ca sprays	Better	Raese, Drake (1992)
BLOSSOM BLAST	PEAR	Lo B	Worse	Turner (1970)
CORK SPOT	PEAR	Lo Ca	Worse	Westwood (1978)
EUROPEAN RED MITE	PEAR	Hi N	Worse	van de Vrie, McMurty, Huffaker (1972)
FIREBLIGHT	PEAR	Hi N	Worse	Lewis, Kenworthy (1962)
FIREBLIGHT	PEAR	Hi N	Worse	Toenjes, W. (1949)
FIREBLIGHT	PEAR	Hi Ca	Better	Lewis, Kenworthy (1962)
PEAR PSYLLA	PEAR	Hi N	Worse	Flint (1991)
POSTHARVEST ROT	PEAR	Lo N, Hi Ca	Better	Sugar, Righetti, et al (1992)
POSTHARVEST ROT	PEAR	Lo N, Hi Ca	Better	Wamer (1992)
POSTHARVEST ROT	PEAR	Hi N	Worse	Bacon (1996)
2 SPOT MITE	PEAR	Lo N	Worse	Hokusima (1958)
PEAR PSYLLA	PEAR	Hi N	Worse	Alston, Evans, Roe, Jenkins (2001)
SPIDER MITES	PEAR, PLUM	Hi N	Worse	Post (1962)
STICKTIGHT	PECAN	Hi N	Worse	Goldberg (2001)
BARK BEETLE	PINE	Hi N	Worse	Jones, Paine, Fenn, Poth (2004)
VERTICILLIUM WILT	PISTACHIO	Lo P or K	Worse	Ashworth, Morgan, Surber (1986)
SHOT HOLE	PLUM	Hi N	Worse	Lamey, Stack (1991)
DIE-BACK	PRUNE	Lo K	Worse	Dixon (1990)
CYTOSPORA CANKER	PRUNE	Lo K	Worse	Bertand. English, Carlson. (1976)

CYTOSPORA CANKER	PRUNE	Lo N, Lo K	Worse	Ogawa, et al (1995)
BACTERIAL CANKER	PRUNE	Lo N	Worse	Southwick, Kirkpatrick, Westerdahl (1996)
APHID	VARIOUS	Hi N	Worse	Denno (1985)
APHID	VARIOUS	Hi N	Worse	Strauss (1987)
LEAFHOPPER	VARIOUS	Hi N	Worse	Brodbeck, Mizell, Andersen (1993)
ANTHRACNOSE	WALNUT	Increased N	Better	Jones, Mueller, Van Sambeek (1998)