



A Quick Guide to Crop Disease Publications (Farmnotes, Bulletins and Agribusiness Crop Updates Proceedings)

Farmnotes and Bulletins

Wheat

[Managing stem rust of wheat](#) Farmnote 73/2004

This Farmnote covers risk factors, disease symptoms, yield losses, pre-season management, spring management and foliar spray strategies for stem rust (*Puccinia graminis f.sp. tritici*) in wheat.

[Managing stripe rust and leaf rust in wheat](#) Farmnote 43/2005

Stripe rust (*Puccinia striiformis f.sp. tritici*) and leaf rust (*Puccinia triticina*) can be a significant threat to wheat crops in WA in some seasons. This farmnote describes the symptoms, risk factors and management of these two diseases.

[Managing yellow spot and septoria of wheat](#) Farmnote 59/2005

Leaf spot diseases affecting wheat in Western Australia are septoria nodorum blotch (*Phaeosphaeria nodorum*), yellow spot (*Pyrenophora tritici-repentis*) and septoria tritici blotch (*Mycosphaerella graminicola*). This Farmnote details the symptoms, risk factors and management of the diseases yellow spot and septoria in wheat.

[Managing yellow spot and septoria of wheat : supplement to Farmnote 59/2005](#)

For fungicide application to be worthwhile for control of yellow spot and septoria nodorum blotch, there should be a reasonable likelihood of receiving around 100 mm of rainfall in the eight weeks after flag leaf emergence as this promotes disease and enables a good crop finish. This supplement to Farmnote 59/2005 provides these rainfall probabilities for 58 WA locations in relation to time of flag leaf emergence based on 51 years of rainfall data, 1954 – 2004.

[Wheat streak mosaic virus and wheat curl mite](#) Farmnote 342

Wheat streak mosaic virus (WSMV) is a seed and mite-borne virus that infects wheat causing severe leaf symptoms and reduced yields. Wheat is its most important host

although the virus also infects barley, oats, rye and a range of grass weeds. This farmnote describes virus symptoms, spread, yield losses and management options.

Barley

[Managing Barley Leaf Diseases](#) Note 288

This farmnote details disease management options for fungal and viral leaf diseases occurring in barley grown in Western Australia. Diseases covered include scald (*Rhynchosporium secalis*), spot-type net blotch (*Drechslera teres f.sp. maculata*), net-type net blotch (*Drechslera teres f.sp. teres*), powdery mildew (*Blumeria graminis f.sp. hordei* = Synonym *Erysiphe graminis f.sp. hordei*), leaf rust (*Puccinia hordei*) and barley yellow dwarf virus.

[Leaf diseases of barley](#) Farmnote 65/2001

This Farmnote illustrates the leaf diseases occurring in barley grown in Western Australia. Disease symptoms, effects and broad principles for control are discussed. Some of the diseases are common while others are rare. Other disorders may be caused by nutrient deficiencies or adverse weather conditions.

[Barley leaf and head diseases : barley yellow dwarf virus \(BYDV\), smut, leaf rust –](#)

DAFWA webpage Information on symptoms, source of infection and disease spread, conditions favouring disease, and control options for Barley Yellow Dwarf Virus, covered smut, loose smut and barley leaf rust.

[Management of barley powdery mildew in the face of fungicide resistance](#)

Barley powdery mildew resistance to the triazole fungicide tebuconazole has been detected in Western Australia. Cross resistance to other older triazole fungicides can be expected. This farmnote covers strategies for how to manage barley powdery mildew given some fungicides could be less effective than growers anticipate.

Oats

[Leaf diseases of oats](#) Farmnote 33/95

This Farmnote illustrates the leaf diseases of oats and discusses their symptoms and control measures. The diseases include septoria avenae blotch, stem and leaf rusts, barley yellow dwarf virus, ring spot and bacterial blights.

Cereals

[Cereal seed dressing and in-furrow fungicides : Farmnote 456](#)

Cereal seed dressing or fungicides applied at seeding are important tools in the management of bunts and smuts as well as wheat leaf and stripe rusts, barley scald and powdery mildew, and some cereal root rots such as take-all. This farmnote describes how seed dressings and in-furrow fungicides can be used to manage these diseases and includes a table of current registered seeding fungicides for cereals in WA.

[Biology, identification and management of cereal smut diseases: Farmnote 455](#)

Cereal smut diseases are caused by fungi which parasitise the host plant and produce masses of soot-like spores in the leaves, grains or ears. Smuts have one of two distinct life cycles. Covers bunt of wheat, flag smut of wheat, loose smut of oats, and covered smut of barley and oats.

[Barley yellow dwarf virus in cereals](#) Farmnote 19/1993

Barley yellow dwarf virus (BYDV) is the most widespread and damaging virus disease of cereals. It infects wheat, barley, oats and grasses and is transmitted by several aphid species. This Farmnote describes the symptoms of the virus on barley, wheat, oats and grasses; how it spreads; potential yield losses; and control measures.

[Fusarium head blight of cereals and stalk rot of maize, millet and sorghum and their identification](#) Farmnote 78/2004 (Revised 2009)

Fusarium head blight reduces yield and greatly reduces marketability of grain. Wheat, barley, oats, triticale and rye are susceptible to Fusarium head blight. Maize, millet, sorghum and related grasses are susceptible to stalk rot caused by the same fungus, *Fusarium graminearum*. This Farmnote describes disease symptoms, the infection cycle, potential losses and management of these diseases.

Lupin

[Lupin foliar diseases](#) – Farmnote 400

This farmnote describes symptoms and management of the major fungal and viral diseases affecting lupin stems, foliage and pods.

[Lupin root diseases](#) – Farmnote 401

This farmnote describes above and below ground symptoms of the common root and hypocotyl diseases occurring in lupins in Western Australia. Management recommendations for each are outlined.

[Lupin anthracnose - identification and management](#) Farmnote 15/2003

Anthracnose is a serious disease of lupins, caused by the fungus *Colletotrichum gloeosporioides*. All species of lupins including ornamentals are affected although the

albus lupin (*L. albus*) is the most susceptible. This Farmnote covers the symptoms, infection cycle and management options of this disease.

[Patch diseases of lupins in Western Australia](#) Farmnote 11/1997

Rhizoctonia bare patch and Eradu-patch both cause distinct patches of stunted plants in narrow-leafed lupins (*Lupinus angustifolius*). It is important to correctly identify which disease is present in a paddock as control strategies are different. This Farmnote covers the symptoms of each disease and the treatment options.

[Brown spot and Pleiochaeta root rot of lupins](#) Farmnote 5/96

This Farmnote outlines infection cycle, symptoms and regions of risk for brown spot and Pleiochaeta root rot in lupins. It presents a management package including rotation, stubble mulching, sowing date, tillage, depth of sowing, phosphorus nutrition, seeding machinery, seeding rate and suitable varieties.

[Growing Andromeda: an albus lupin variety with improved tolerance to anthracnose](#) Farmnote 84/2005

Andromeda is a new variety of albus lupin with considerably better tolerance to anthracnose than Kiev Mutant. This farmnote provides a basic guide to the production of Andromeda. Topics covers include disease management, yield and adaptation, time, depth and rate of sowing, fertiliser application, weed and insect control, harvest and marketing.

[Aphids in lupin crops : their biology and control](#) Farmnote 44/1999

Aphids are found in narrow-leafed, yellow and Albus lupins, and are most abundant during budding through to early pod stages. This farmnote describes aphid species - cowpea aphid, bluegreen aphid, green peach aphid, leafcurl plum aphid and the potato aphid - the feeding damage and potential virus spread they cause to lupin crops, and ways to manage the problem.

[Managing Cucumber Mosaic Virus \(CMV\) in lupin crops](#) **DAFWA webpage** - Covers cultural control, plant resistance, insecticides, biological control, integration of control methods, seed testing for CMV, tables of resistance and susceptibility to CMV and to aphids in commercial lupin varieties, and components of integrated disease management strategies devised against CMV in narrow-leafed lupin crops.

[Cucumber mosaic virus \(CMV\) and aphids in lupins](#) **DAFWA webpage**. This set of pages provides a forecast for CMV and aphid risk in WA lupins each year. It also provides background information about CMV and aphids in lupins in WA.

[Cucumber mosaic virus in lupins](#) Farmnote 402

This Farmnote covers the symptoms and spread of cucumber mosaic virus in lupins, yield loss and management options.

[Bean yellow mosaic virus in lupins](#) Farmnote 403

This Farmnote covers the symptoms and spread of bean yellow mosaic virus in lupins, yield loss and management options.

[Lupin seed testing and seed treatments](#) Bulletin 4720 (Chapter 5) Chargeable publication

This chapter discusses the management of lupin diseases through seed testing and application of seed treatments.

[Diseases of lupin](#) Bulletin 4720 (Chapter 9) Chargeable publication

Lupin species are susceptible to a wide range of diseases, most of which are caused by fungal or viral pathogens. Roots, hypocotyls, stems, pods and seeds of lupin are all subject to infection by disease organisms. This bulletin covers symptoms and key steps in the integrated management of lupin diseases.

Pulses

[Virus diseases of chickpeas](#) Farmnote 16/97

Alfalfa mosaic (AMV) and cucumber mosaic (CMV) viruses have been found in commercial crops and trial plots of chickpeas in Western Australia. However, their symptoms are often confused with those of nutrient deficiencies, physiological disorders, herbicide damage and waterlogging. This Farmnote describes the symptoms of these viruses, how they spread, potential yield losses and management strategies.

[Growing lentils in the wheatbelt : weeds, pests and diseases](#) Farmnote 71/2003

Ascochyta blight and botrytis grey mould (BGM) are the main diseases of lentils. This farmnote provides information on the symptoms and management of these diseases, as well as information on weed and insect management in lentils.

[Faba bean : ascochyta blight disease](#) Farmnote 57/96

Summarises the symptoms, disease risk and infection cycle, and control measures for ascochyta blight (*Ascochyta fabae*) in faba bean compared to alternaria and cercospora.

[Faba bean : chocolate spot disease](#) Farmnote 115/96

Summarises the symptoms, disease risk and infection cycle, and control measures for chocolate spot (*Botrytis fabae*) in faba bean.

[Faba bean : rust disease](#) Farmnote 114/96

Summarises the symptoms, disease risk and infection cycle, and control measures for rust disease (*Uromyces viciae-fabae*) in faba bean.

[Faba bean : fungicide control of leaf diseases](#) Farmnote 81/2002

This farmnote explains the use of fungicides for managing ascochyta blight, chocolate spot and rust in faba bean crops. It includes a method for estimating yield. Application rates of registered fungicides are given, as well as spray thresholds and application timings.

[Fungal and bacterial diseases of chickpea](#) – **DAFWA webpage** covering *Ascochyta rabiei* (Ascochyta Blight) and *Botrytis cinerea* (Botrytis grey mould), disease symptoms, spread and control strategies.

[Fungal and bacterial diseases of lentils](#) – **DAFWA webpage** covering *Ascochyta lentis* (Ascochyta Blight) and *Botrytis cinerea* and *fabae* (Botrytis grey mould), disease symptoms, spread and control strategies.

Canola

[Managing blackleg : a growers' guide to minimising risk from Blackleg disease of canola in Western Australia](#) - Bulletin 4571

Blackleg, caused by the fungus *Leptosphaeria maculans*, is the most serious disease of canola in Western Australia. Several factors contribute towards the development of the disease, such as seasonal conditions, infected residues, and infected seeds. This Bulletin covers: importance of seedling infection from blackleg; integrated management of blackleg; varietal response to different disease pressures; minimising the risk of blackleg spore showers; and fungicides for blackleg control.

[Fungal diseases of canola in Western Australia](#) - Bulletin 4406a

This Bulletin describes the symptoms and management strategies for the most important and most prevalent fungal diseases of canola in Western Australia - blackleg, white leaf spot, sclerotinia stem rot, white rust, alternaria black spot, downy mildew, hypocotyl rot and damping-off.

[Managing the sylvestris resistance breakdown risk in canola](#) – Farmnote 51/2004

Very high resistance to blackleg in canola varieties was developed from *Brassica sylvestris* and is based upon a single dominant gene. This resistance has been overcome by a more virulent strain of blackleg. This farmnote provides guidelines for managing the sylvestris resistance breakdown risk, and seed dressing options in canola

Root diseases and Nematodes

[Root lesion and burrowing nematodes in Western Australian cropping systems](#)
Bulletin 4698

Recent surveys have revealed that several highly damaging species of root lesion nematodes occur across different soil types in agricultural areas of Western Australia. This bulletin discusses nematode disease cycle, species, distribution, impact on crops, testing services and cultural control.

[Root disease under intensive cereal production systems](#) Bulletin 4732.

This Bulletin describes symptoms and control methods for the most commonly encountered cereal root diseases in Western Australia: rhizoctonia bare patch, root lesion nematode, take-all, fusarium crown rot, cereal cyst nematode, common root rot and pythium root rot.

[Stem nematode fact sheet](#)

Stem nematode (*Ditylenchus dipsaci*) is a soilborne pest of oat, pulse and some pasture crops. Crop damage from Stem nematode has not been recorded in Western Australia but it is a problem in other Australian states and overseas. This fact sheet discusses the symptoms, spread and how to protect your property from Stem Nematode.

General information

Cereals

[Wheat book : principles and practices](#) Bulletin 4443

A technical manual for wheat producers; A guide to growing wheat in Western Australia which covers environment, plant development, germination and growth, crop water use, nutrition, the role of wheat in farming systems, crop management, wheat quality and uses, tillage, diseases, pests and weeds, marketing and special wheats.

[Wheat variety guide 2011 Western Australia](#) Bulletin 4821

Wheat variety guide summarising performance characteristics of commercially available wheats and some precommercial lines, including variety summaries, agronomic, disease and herbicide tolerance characteristics, recommended planting times, medium- to long-term yield performance, 2011 time of sowing data and flowering data.

[Barley production in Western Australia](#) – The Barley site. **DAFWA webpage**

A guide to growing barley in Western Australia that include suggestions on varieties, crop production, pests, weeds and disease management, nutrition, harvesting, grain quality and economics.

[Barley variety guide for WA 2012](#) Bulletin 4804

Barley variety guide summarising performance characteristics of commercially available barley varieties and some precommercial lines, including variety summaries, agronomic, disease and herbicide tolerance characteristics, recommended planting times, medium- to long-term yield performance, 2012 time of sowing data and flowering data.

Lupins and Pulses

[Growing pulses in Western Australia - WA Pulses](#) DAFWA webpage

This webpage includes information on factors affecting the growth of pulses; benefits of growing pulses; pulse diseases; grain handling and storage; specific information on growing field pea, chickpea, faba bean, lentil, vetch, narbon bean and lathyrus; and available pulse publications.

[Producing pulses in the Northern Agricultural Region](#) Bulletin 4656 Pulse production guide for the northern agricultural region of WA. Information includes crop management/diseases/insect pests of chickpeas, field peas, faba beans, lentils, common vetch, narbon bean and lathyrus.

[Production packages for kabuli chickpea in Western Australia](#) Note 117

This farmnote discusses aspects of the production of quality kabuli chickpea, including rainfall, soil type, varieties, seeding practices, insects and diseases, harvesting, grain handling and markets. Presents tables on variety yields and seed size related to market value and registered herbicides for use with kabuli chickpea crops.

[Producing Lupins Bulletin 4720](#) chargeable publications

A 168 page book containing detailed information on lupin establishment, weed control, disease management and harvesting. A comprehensive guide to lupin production.

Oilseeds

[Profitable canola production in the Great Southern and Lakes District](#) - Bulletin 4411

Provides growers at a district level with an easy to follow overview of the best management practices for canola in the great southern and lakes district. Includes information on canola varieties, establishment, insect and disease management.

[Profitable canola production in the Northern Grainbelt of Western Australia](#) - Bulletin 4491

Provides growers at a district level with an easy to follow overview of the best management practices for canola in the northern grainbelt. Includes information on canola varieties, establishment, insect and disease management.

[Profitable canola production in the South Coastal Region](#) - Bulletin 4407

Provides growers at a district level with an easy to follow overview of the best management practices for canola in the south coastal region. Includes information on canola varieties, establishment, insect and disease management.

[Canola variety guide in WA 2010](#) –Farmnote 406

Canola variety guide for Western Australia 2010, includes blackleg disease ratings.

Agribusiness Crop Update Papers

[Agribusiness Crop Updates 2011](#): Disease papers in the proceedings produced for the 2011 Agribusiness Crop Updates.

Pests and Diseases:

- Common bunt resistance in Western Australian wheat varieties. pp104-107
- Infection of wheat by soil-borne common bunt and factors affecting its persistence in soil (error in printing meant it was excluded, available from author Ciara Beard, ciara.beard@agric.wa.gov.au).

[Agribusiness Crop Updates 2010](#): Disease papers in the proceedings produced for the 2010 Agribusiness Crop Updates.

Crop Specific Disease Updates:

- Fungicide management of yellow spot in wheat. pp. 26-29
- Resistance to infection by Beet western yellows virus in four Australian canola varieties. pp. 30-33
- Yellow spot carryover risk from stubble in wheat-on-wheat rotations. pp. 34-36
- Fungicide for the future: Management of Barley Powdery Mildew and Leaf Rust. pp. 37-40
- 2009 canola disease survey and management options for blackleg and Sclerotinia in 2010. pp. 41-44
- Impact of variety and fungicide on carryover of stubble borne inoculum and yellow spot severity in continuous wheat cropping. pp. 45-49
- Limitations to the spread of Wheat streak mosaic virus by the Wheat curl mite in WA during 2009. pp. 50-54

[Agribusiness Crop Updates 2009](#): Disease papers in the proceedings produced for the 2009 Agribusiness Crop Updates.

Crop Specific Disease Updates:

- Interaction between wheat varieties and fungicides to control stripe rust for grain yield and quality. pp. 49-51.
- Findings of canola disease survey 2008 and its implications for better disease management in 2009. pp. 52-54.
- Distribution and survival of wheat curl mite (*Aceria tosichella*), vector of Wheat Streak Mosaic Virus, in the WA grainbelt during 2008. pp. 57-61.
- Partial resistance to *Stagonospora* (Septoria) *nodorum blotch* and response to fungicide in a severe epidemic scenario. pp. 62-64

Farming Systems Disease Updates:

- Screening cereal, canola and pasture cultivars for Root Lesion Nematode (*Pratylenchus neglectus*). pp. 119-122.

[Agribusiness Crop Updates 2008](#): Disease papers in the proceedings produced for the 2008 Agribusiness Crop Updates.

Cereals Updates: Diseases

- Leaf disease management in continuous barley in the northern and central grainbelt of WA
- Temperature and moisture requirements of leaf, stem and stripe rusts of wheat
- Fungicide options for controlling diseases in oats
- Survey of wheat root diseases under intensive cereal production in Western Australia during 2005-2007
- Epidemiology studies on Wheat Streak Mosaic Virus
- Bacterial diseases that affect WA export hay quality

Lupins, Pulses and Oilseeds Updates:

- Application of 'Blackspot Manager' model to identifying a low risk sowing date for field pea in South Australia and Western Australia in 2007
- Field pea germplasm enhancement for black spot resistance

[Agribusiness Crop Updates 2007](#): Disease papers in the proceedings produced for the 2007 Agribusiness Crop Updates.

Cereals Update: Diseases

- Barley agronomy highlights: Canopy management
- Barley agronomy highlights: Leaf diseases and spots

- Fungicide applications for stripe rust management in adult plant resistant (APR) wheat varieties
- Effect of seed treatment with Jockey on time of onset and disease severity of stripe rust in wheat
- Rotations for management of Cereal Cyst Nematode
- Occurrence of Wheat streak mosaic virus in the Western Australian grainbelt during the 2006 growing season
- Development of a seed test for Wheat streak mosaic virus in bulk samples of wheat

Lupins and Pulses Update:

- Development of anthracnose resistant and early flowering albus lupins (Lupinus albus L.)
- Seed yield and anthracnose resistance of Tanjil mutants tolerant to metribuzin
- Development of a forecasting model for Bean yellow mosaic virus in lupins
- Ascochyta resistance in chickpea lines in Crop Variety Testing (CVT) of 2006
Yield evaluation of ascochyta blight resistant Kabuli chickpeas
- International screening of chickpea for resistance to Botrytis grey mould
- Field pea germplasm enhancement for black spot resistance
- Validation of Blackspot spore release model and testing of moderately resistant field pea line
- Yield losses from sowing field pea seed infected with Pea Seed-borne Mosaic Virus

Oilseeds Update:

- Future directions of blackleg management - dynamics of blackleg susceptibility in canola varieties

[Agribusiness Crop Updates 2006](#): Disease papers in the proceedings produced for the 2006 Agribusiness Crop Updates.

Plenary - The 2005 wheat streak mosaic virus epidemic in New South Wales and the threat posed to the Western Australian wheat industry.

Cereals Update: Diseases

- Comparative study of commercial wheat cultivars and differential lines (with known Pm resistance genes) to powdery mildew response.
- On farm research to investigate fungicide applications to minimise leaf disease impacts in wheat - part II
- Disease resistance update for wheat varieties in WA
- Effect of time of stripe rust inoculum arrival on variety response in wheat
- Fungicide seed dressing management of loose smut in Baudin barley

Lupins and Pulses Update:

- Impact of anthracnose on yield of andromeda lupins
- Survey of lupin root health
- Development of a generic forecasting and decision support system for diseases in the Western Australian wheatbelt
- Field pea blackspot disease in 2005: Prediction versus reality
- Pea seed-borne mosaic virus in pulses: Screening for seed quality defects and virus resistance
- Yield losses from sowing field pea seed infected with pea seed-borne mosaic virus
- Ascochyta management with new chickpeas
- Management of Ascochyta blight in improved chickpea varieties
- Botrytis grey mould of chickpea
- New Ascochyta blight resistant, high quality kabuli chickpea varieties
- Genetic dissection of resistance to fungal necrotrophs in *Medicago truncatula*

Oilseeds Update:

- Advances in canola blackleg epidemiology and its implication in understanding and managing the disease