PestFax

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Do you have patches of red and dying subterranean clover?

- Brookton
- Williams
- Mount Barker

A farmer has reported to the department that he is seeing patches of subterranean clover (sub-clover) turning red and dying on his Brookton property. This is a concern as it is reducing what limited pasture he currently has on offer to feed his sheep. The farmer did a quick survey of other farmers in the shire and red sub-clover appears to be widespread in the Brookton shire this year.

Another farmer has also reported red sub-clover on his property west of Williams. The red sub-clover is visible in paddocks that have had 3-4 consecutive years of sub-clover.

Farmer Stuart Irwin also currently has patches of sub-clover that are dead or very red in colour across his property that is located west of Mount Barker. Stuart says in some areas 100% of the sub-clover has died and this is the worst year for this occurrence. Stuart suspected that the clover had sub-clover red leaf virus (SCRLV) but virus testing by the department's Diagnostic Laboratory Services (DDLS) Plant Pathology services revealed that the sub-clover plants did not have SCRLV and were more likely to be stressed.

What causes red colouration and death in clover?

There are many other factors that can cause sub-clover to turn red and die, these include;

- Moisture stress. A dry June-July can be a major contributor to the death of many sub-clover plants, particularly on the sandiest soils with the poorest water-holding capacity. Sub-clover is a relatively shallow-rooted species and often fails to persist on sandy soils following intermittent periods of moisture stress. This is likely to be exacerbated by poor root growth, resulting in moisture stress and an inability to extract nutrients.
- Waterlogging. Prolonged wet conditions can cause this condition particularly in combination with cold temperatures.
- Nutritional stress. Generally low phosphate levels and even boron deficiency can lead to red leaves and stunted plants. Nitrogen stress leads to red clover plants. Poor nodulation can be secondary to a variety of causes. Fertiliser application is not expected to alleviate symptoms in most cases particularly during dry conditions and winter.
- Cold stress.
- Soil acidity.
- Fungal root rotting organisms, such as rhizoctonia. A suite of fungal root rotting organisms can be present in older pastures reducing root growth and root hairs which are the site of nodule initiation. Without root hairs there is no nodulation. Fungal root rot stress mainly occurs in paddocks with continuous (3-4 years) sub-clover pasture, as organisms accumulate.
- Herbicide damage. Either within-season from herbicides that affect sub-clover or from residues, particularly from sulfonylurea herbicides, that have been carried over from the previous season.
- Sub-clover red leaf virus (SCRLV).

What is sub-clover red leaf virus and how can I test for it?

Symptoms of SCRLV on sub-clover include intense reddening of the older leaves starting at the leaf margins before extending across the whole leaf. However the symptoms vary depending on variety. Infected plants may be stunted and fail to set seed. While there are many causes of red leaves in sub-clover, only virus testing can confirm the presence of SCRLV.

SCRLV is a luteovirus which needs a constant green host for survival. It is not carried in seed. In irrigation or wet areas it persists in a range of perennial clovers including white clover, red clover and strawberry clover which when infected do not show any symptoms. The virus is spread persistently by aphids, which means that once an aphid becomes infectious it can spread the virus for the rest of its life.

Although SCRLV may be present in pastures it may only be part of a number of attributing factors which cause reddening of clover leaves and stunted growth. The virus alone is unlikely to cause plant deaths or lack of nodules on roots.

Fertiliser application (phosphorus, potash or nitrogen) does not alleviate virus symptoms.

Spraying aphids to prevent the spread of the virus is not recommend, especially at this time of the year as virus spread is most likely to have occurred much earlier in the season even though the symptoms are only becoming apparent now (late winter). Low numbers of aphids are often sufficient to vector the virus from nearby over-summering sources and these levels often go unnoticed during autumn.

Only virus testing can confirm the presence of SCRLV. Fresh clover plants can be submitted to the department's Diagnostic Laboratory Services – Plant pathology services to be tested for SCRLV (and fungal disease) and confirm if it is present or not. Collect 10 red or dying sub-clover plants from different locations across the paddock, including their root symptoms. Shake off excess soil and place in a plastic bag. Fill out the lab form, if possible provide the name of the sub-clover sown, and mail to; DDLS Plant Pathology, DDLS - Specimen Reception C Block, Department of Primary Industries and Regional Development, 3 Baron-Hay Court, South Perth WA 6151.

For more information on SCRLV refer to Agriculture Victoria's Subterranean clover: Virus diseases page.

How can farmers manage this season's and future red sub-clover occurrences?

If testing reveals that SCRLV is not the cause of red leaf symptoms, the surviving sub-clover plants may recover and lose their redness with warmer spring weather, provided soil moisture remains adequate for plant growth. However, they will not be as productive as plants that have remained healthy and will most likely hay off earlier as soils start drying off.

There are several management options that will reduce the likelihood of future occurrences of sub-clover red leaf syndrome. These include;

- Crop older pasture paddocks to reduce the build-up of root rot diseases or sow grasses, such as annual ryegrass or forage oats, for winter and spring feed.
- Ensure sulfonylurea herbicides are not used in the year before a pasture phase.
- Sow an alternative legume, such as yellow or French serradella, which are well adapted to sandy soils on which sub-clovers often get stressed.
- If the clover pasture has not been inoculated recently with rhizobia, and poor nodulation is suspected, the new Group C strain can be introduced using granular inoculants or by sowing more clover.

For more information on managing sub-clover contact Phillip Nichols, Senior Research Officer, South Perth on +61 (0)8 9368 3547 or Paul Sanford, Senior Research Officer, Albany on +61 (0)8 9892 8475.

For more virus information contact Benjamin Congdon, Plant Virologist, South Perth on +61 (0)8 9368 3499.

Barley and wheat disease update

Barley leaf rust

- Narrogin

Barley leaf rust on Compass barley. Photo courtesy of: Blakely Paynter (DPIRD).

Senior research officer Blakely Paynter (DPIRD) has found barley leaf rust (BLR) in Compass barley in a trial near Narrogin. The trial was sown on 14 April and was at milk development.

Compass barley is susceptible (S) to BLR throughout all its growth stages and can suffer significant yield losses from this disease.

If rust is found growers and consultants are strongly urged to participate in the Australian cereal rust survey and submit samples to the University of Sydney, Private Bag 4011, Narellan NSW 2567 for pathotype testing.

For more information on BLR and how to manage it refer to the department's Diagnosing barley leaf rust page.

Barley powdery mildew

- Brookton
- Kojonup
- Tenterden
- Gnowellen

Senior research officer Blakely Paynter (DPIRD) has found powdery mildew (PM) in Bass barley in trials near Brookton and Kojonup. The plants were at stem elongation at both locations. The trial near Brookton was sown in late May with no seed dressing and had not had any fungicide applied to date.

Plant pathologist Kith Jayasena (DPIRD) has found PM in Bass barley at Tenterden. The crop is at early stem elongation and was going to be sprayed with a fungicide. The crop had received a Hombre® seed treatment and Uniform® in-furrow.

Kith has also reported PM on Baudin barley trap plants in a trial near Gnowellen. The plants had not been seed dressed.

Bass is moderately susceptible to susceptible (MSS) to PM at the seedling stage and moderately susceptible (MS) after flag leaf emergence. Baudin is very susceptible (VS) to PM at all growth stages.

For more information on barley powdery mildew refer to the department's Management of barley powdery mildew in 2017.

Barley spot-type net blotch

- Narrogin
- Scaddan

Senior research officer Blakely Paynter (DPIRD) has reported finding spot-type net blotch (STNB) in a barley trial near Narrogin. The trial was sown on 25 May and plants were at stem elongation. The barley varieties infected were; RGT Planet, Spartacus CL, Compass, La Trobe, iGB1305, Scope CL. Infection appeared most severe in RGT Planet.

Crop protection officer Jolie Delroy (DPIRD) has reported finding STNB in tillering La Trobe barley near Scaddan. Jolie estimates 10-30% of the crop was infected.

Compass has some resistance to STNB in the seedling stage (MRMS) but less so as an adult (MSS). The majority of current varieties are susceptible to STNB, ranging between MS to SVS as seedlings and S to SVS as adult plants.

For further information on symptoms and management of STNB see the department's Managing spot type net blotch in continuous barley page.

Wheat powdery mildew

- Gnowangerup
- Grass Patch
- Esperance area

Theo Van Niekerk (Katanning Soil Nutrition Service) has reported finding powdery mildew (PM) in Zen and Scepter wheat near Gnowangerup. The crops were at stem elongation.

A grower east of Grass Patch has also found PM in his Scepter wheat, which is at flag leaf and will apply fungicide.

Plant pathologist Andrea Hills (DPIRD) says that wheat PM is widespread around the Esperance area at the moment.

Scepter and Zen are both rated SVS to PM, indicating that under favorable weather conditions infection could multiply rapidly in these varieties.

For more information on wheat powdery mildew refer to the department's Managing powdery mildew in wheat page.

Fungicide application information

Fungicide choice needs to take into account the diseases present in a crop. Where a variety is susceptible to both of the diseases present, a fungicide that is registered to control both of them is required. For more fungicide information refer to the department's Registered foliar fungicides for cereals in Western Australia page.

For more information contact Kithsiri Jayasena, Plant Pathologist, Albany on +61 (0)8 9892 8477, Geoff Thomas, Plant Pathologist, South Perth on +61 (0)8 9368 3262 or Andrea Hills, Plant Pathologist, Esperance on +61 (0)8 9083 1144 or Ciara Beard, Plant Pathologist, Geraldton on +61 (0)8 9956 8504.

Aphid activity update

Canola aphids

- Canna
- Mingenew
- Kellerberrin
- Central agricultural region

Peter Eliott-Lockhart (Elders) has found turnip aphids in an early flowering canola crop near Canna (north of Mingenew).

Entomologist Dusty Severtson (DPIRD) has found clusters of cabbage aphids along the edge of an early flowering canola crop near Mingenew.

Mike Southall (Farmer) has found green peach aphids (GPA) in early flowering Bonito canola near Kellerberrin.

The GPA were found on the lowest leaves and 3-6 in heads of canola plants.

Brad Joyce (ConsultAg) has noticed that GPA have been dying off from a naturally occurring fungus throughout the central agricultural region. Brad also noticed that some cabbage and turnip aphid clusters on racemes were infected with fungus, but the most infection was seen in GPA on the underside of leaves.

There are a number of naturally occurring aphid-killing fungus species throughout the regions, and it is common for the fungus to kill off many of the GPA this time of year if condition are right. Conducive conditions occur when rainfall or dew allows continually moist conditions in the crop canopy and days are not too cold.

Growers are urged to check canola crops for fungal infections in aphids before deciding to invest in an insecticide spray. For more information see the department's Know what beneficials look like in your crop.

Cereal aphids

- Gnowangerup

Theo Van Niekerk (Katanning Soil Nutrition Service) has reported finding oat aphids in Zen wheat near Gnowangerup. The wheat was at the stem elongation stage and one to 10% of tillers were infested

Remember, if you are unsure of what aphid species you are finding in your crops you can use the PestFax Reporter app to attach up to three images of the aphid(s) and request that a department entomologist identify or confirm the aphid species via an email or phone response.

For more information on aphids refer the department's;

- Protecting WA Crops Issue 3 newsletter Aphids – WA's insect problem children
- Aphid management in canola crops page
- Diagnosing cereal aphids page.

For a list of insecticides registered for use on aphids in canola and cereals see the departments Winter/Spring Insecticide Guide 2017.

For more information contact Svetlana Micic, Research Officer, Albany on +61 (0)8 9892 8591 or Dustin Severtson, Development Officer, South Perth on +61 (0)8 9368 3249.

Native budworm moth activity and trapping results

- Binnu
- Eradu

A farmer has found seven native budworm caterpillars (5-10mm in length) in 10 sweeps in his lupin crop west of Binnu.

A budworm moth trapper has found two caterpillars (5-10mm in length) per 10 sweeps in a lupin crop near Eradu.

Native budworm moth trap numbers recorded this week by volunteer farmers, agronomists and DPIRD staff indicates that native budworm flights into agricultural areas have been patchy and generally low. The higher captures this week include; Binnu (30 moths), Doodlakine (eight), Eradu (22), Kellerberrin (23), Merredin (eight) and Wyalkatchem (nine).

Results of this week's trapping are available at the department's Native budworm moth numbers 2017.

Native budworm moth flights are often variable and unpredictable.

Field pea, faba bean, lentil and chickpea crops are very susceptible to budworm as their pods are attractive to all sizes of caterpillars. These crops need to be checked regularly after the commencement of flowering. The trap numbers only provide an indication of the pests activity and cannot be relied upon for control decisions. Only the use of a sweep net to regularly check crops can give growers confidence in the levels of budworm present.

The economic spray threshold levels will vary with crop type, grain price and control cost. These thresholds can be calculated for each grower's particular situation using a simple formula outlined in the department's How to use the threshold table.

Detailed information on this pest can be found at the department's Management and economic thresholds for native budworm.

Pesticide options for the control of native budworm can be found in the department's Winter/Spring Insecticide Guide 2017.

For more information contact Alan Lord, Technical Officer, South Perth on +61 (0)8 9368 3758 or +61 (0)409 689 468.

All Page Links

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[2] https://www.agric.wa.gov.au/sites/gateway/files/SRLV%202%20Stuart%20Irwin%208Aug2017.JPG
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[5] mailto:phil.nichols@agric.wa.gov.au
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