



NaturErhvervstyrelsen

## Vurdering af relevante skadegørere for *Trifolium* planter

NaturErhvervstyrelsen (NAER) har med bestilling af den 20. november 2015 bedt DCA – Nationalt Center for Fødevarer og Jordbrug (DCA) om at kvalificere, hvilke planteskadegørere, der er relevante at nævne under danske væksthushold for *Trifolium repens*. Derudover ønskes det verificeret om de midler, gartnerierne har anført i oversigterne som brugt til behandling mod de nævnte skadegørere, er virksomme og om de er godkendt til behandling på planterne.

NAER har med bestillingen fremsendt et skema, som er anvendt til besvarelsen (vedlagt). Skemaet er udvidet med ekstra kolonner og besvarelser anført med blå skrift.

Besvarelsen er udarbejdet af akademisk medarbejder Klaus Paaske, sektionsleder Mogens Nicolaisen og seniorforsker Annie Enkegaard, alle Institut for Agroøkologi.

Besvarelsen er udarbejdet som led i "Aftale mellem Aarhus Universitet og Fødevareministeriet om udførelse af forskningsbaseret myndighedsbetjening m.v. ved Aarhus Universitet, DCA – Nationalt Center for Fødevarer og Jordbrug, 2015-2018" (punkt BP-13 i aftalens Bilag 2).

Med venlig hilsen

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Side 1/1

## Evaluation of relevant pests on *Trifolium* plants

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In the tables below the text in black is the original information received by Aarhus University, Department of Agroecology while the text in blue is the answers.

### *Trifolium repens*

Scientific name	<i>Is the pest relevant for the plant species?</i>	Management practices	<i>1. Are the pesticides effective? 2. Are they approved for use on the plant species in Denmark?</i>	Biological management	<i>Are the biological control methods relevant for the pest species?</i>	Other remarks
<b>Insects</b>			<i>Reference (10)</i>			
<i>Myzus persicae</i>	<i>Yes (1)</i>	Teppeki (flonicamid) 20 g/100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against aphids</i>
<i>Aulacorthum solani</i>	<i>Yes (1)</i>	Teppeki (flonicamid) 20 g/100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against aphids</i>
<i>Macrosiphum euphorbiae</i>	<i>Yes – the species is highly polyphagous and infests closely related plant species (1)</i>	Teppeki (flonicamid) 20 g/100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against aphids</i>
<i>Frankliniella occidentalis</i>	<i>Yes (2, 3)</i>	Conserve (spinosad) 75 mæ/100L water	<i>1. Yes 2. Yes</i>	<i>Amblyseius cucumeris and Hypoaspis miles</i>	<i>Yes</i>	

<i>Thrips tabaci</i>	<i>Yes – the species is highly polyphagous and infests closely related plant species (4)</i>	Conserve (spinosad) 75 mæ/100L water	<i>1. Yes 2. Yes</i>	<i>Amblyseius cucumeris and Hypoaspis miles</i>	<i>Yes</i>	
<i>Tetranychus urticae</i>	<i>Yes (5)</i>	Milbeknock (milbemectin) 50 ml / 100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against spider mites</i>
<i>Trialeurodes vaporariorum</i>	<i>Yes – the species is highly polyphagous and is able to other Fabaceae plant species (6)</i>	Confidor WG70 (imidacloprid) 35g / 100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against whiteflies</i>
<i>Bemisia tabaci</i>	<i>Yes (7)</i>	Confidor WG70 (imidacloprid) 35g / 100 L water	<i>1. Yes 2. Yes</i>			<i>Several biocontrol agents available against whiteflies</i>
<i>Sciaridae</i>	<i>Yes (8)</i>	Fastac 50 (alpha-cypermethin) 0,012%	<i>1. Yes 2. Yes</i>	<i>Nematodes (Steinernema feltiae) and Hypoaspis miles</i>	<i>Yes</i>	
<i>Lepidoptera</i>	<i>Probably – Trifolium repens may become infested with several species of Lepidoptera (9)</i>	Dipel 0,2% (200 ml/100 L water)	<i>1. Yes 2. Yes</i>			<i>Depending on the Lepidopteran species, biocontrol may be possible</i>
<b>Fungi</b>						
<i>Rhizoctonia solani</i>	<i>Yes. A cosmopolitan pathogen that may be found in a very high number of hosts and which can be found in the roots of many plants.</i>	Rizolex 50 ml / 100 L water	<i>1. Yes 2. Yes</i>			
<i>Cymadothea trifolii</i>	<i>Yes. Cymadothea</i>	Preventive treatment:	<i>1. Yes</i>			<i>No authorized</i>

	<i>trifolii is an obligate fungal pathogen causing sooty/black blotch of clover. However, the disease is not considered as a serious plant pathogen. The fungus is present worldwide.</i>	Folicur Xpert (160 g/l tebuconazol & 80 g/l prothioconazol) 0,5-1 L/ha	2. <i>Not authorized for use in glasshouse, the product has a minor use authorization for field use</i>			<i>pesticides for control of this disease in glasshouse</i>
<i>Fusarium sp.</i>	<i>Yes. A cosmopolitan pathogen that may be found in a very high number of hosts and which can be found in the roots of many plants.</i>	Prestop 0,5 % (Gliocladium catenulatum stem J1446)	1. <i>Yes</i> 2. <i>Yes</i>			
<i>Pythium sp.</i>	<i>Yes. A cosmopolitan pathogen that may be found in a very high number of hosts and which can be found in the roots of many plants.</i>	Proplant (propamocarb) 5-10 ml/m <sup>2</sup>	1. <i>Yes</i> 2. <i>Yes</i>			
<i>Botrytis cinerea</i>	<i>Yes. A cosmopolitan pathogen that may be (and is) found in a very high number of hosts and which can be found in the roots of many plants.</i>	Signum WG (pyraclostrobin +boscalid) 0,1-0,15%, 100-150 g/100 L water	1. <i>Yes</i> 2. <i>Yes</i>			
<b>Virus</b>			<i>No authorized pesticides</i>			
	<i>Most, if not all, information on Trifolium can be found as a pasture/fodder. Trifolium is susceptible to a high number of viruses, however, most</i>	<i>Using clean mother plants/seed and control of potential insect vectors will minimize problems with viruses (11)</i>				

	<p><i>relevant viruses infecting Trifolium as pasture are: Bean yellow mosaic virus, Alfalfa mosaic virus, Beet western yellows virus, Cucumber mosaic virus, Clover yellow vein virus, Subterranean clover red leaf virus, and Subterranean clover stunt virus (11)</i></p>					
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### Other pests or diseases that should be added?

#### **Pests**

*Limothrips cerealium* should probably be added. This thrips species is a pest of various grasses. In late summer (around harvest) it often invades greenhouses in numbers requiring treatments to avoid feeding damage. For control – see under *Thrips tabaci* / *Frankliniella occidentalis*

#### **References**

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