

Plant protection challenges in organic fruit and berry growing



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Who am I

- Sigrid Mogan
- Office: Lier near Drammen
- From 2008 50-60% Coordinator for fruit and berry in NLR (Norwegian Agricultural Extension service)
- Responsible for plant protection tasks for both conventional and organic growing
- Adviser for ribes and cherries in NLR Viken 50-40%
- Worked with several organic projects and trials since 1998



Contentious inputs in fruit and berry growing?

- Foregangsfylkeprosjektet (motivation project):

Lack of plant protection preparats in Norway limit the organic fruit and berry production!

- Organic-Plus:

Pathways to phase-out contentious inputs from organic agriculture in Europe

Focus on:

copper

sulphur

mineral oil



Fruit and berry field as ecosystem

Ideal:

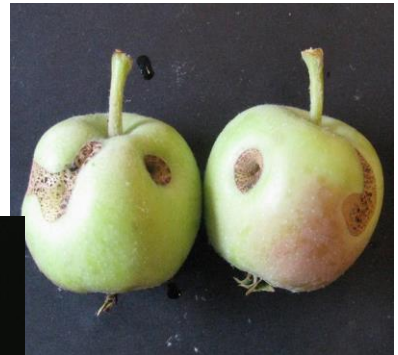
Balance between the living organisms and the abiotic factors

But:

Pests and fungi can be very harmful and cost big loss in yield and money for the grower



Pests and diseases



Plant protection - the principles

- Strong species and varieties
- Crop rotation
- Mechanical management
- Facilitate for beneficials
- Thermal treatment
-

Resistant varieties (black currant)

- Important to grow resistant or strong varieties
- But when we planted varieties strong against *Drepanopeziza ribis*, it turned out that they were very susceptible for *Mycosphaerella ribis*



Remove infected leaves early spring



But the fungi also survived on the cluster stems!
Copper was wanted – dispensation from May 2011

Facilitate for beneficials and pollinators



Beneficials for spider mite (black currant field)



Other beneficials



Plastic cover/ tunnel (red currant) for rain protection before and during harvest



Stikkelsbærbladveps - *Nematus ribesii*



Stikkelsbærbladveps - *Nematus ribesii*

- sprayed with Neem-oil (trial) to the right, unsprayed to the left



Restriction for approval of plant protection preparates for organic

- National legislation, strict praxis
- High applicationfee (feromones about 25 000 €)

Madex – against codling moth

Application (søknad) and approval (godkjent) in Norge, Sverige og Danmark. Not approved in Norway!

(Smartcrop, Valborg Kvakkestad)

År	DK	SE	NO
2005	Søknad for Madex3		
2007	Søknad godkjent		
2008		Søknad for Madex	Søknad for Madex
2010		Søknad godkjent	
2011	Søknad for Madex		
2012	Søknad godkjent		
2015			Søknad trukket [®]



1. Preparates from animal or vegetarian origin

red colour – not approved

green colour - approved

Preparat

NeemAzal (azadirachtin)

Basisstoffer – bakery
powder (Na-bikarbonat),

Feromoner

Plantoil

Pyretriner – Raptol

Kvassia

Crop

Fruit and berry crops

Apple

Apple

Fruit

Ribes, blueberry, raspberry

Fruit



2. Microorganisms and preparates produced by microorganisms

red colour – not approved

green colour - approved

Preparat

Granulosevirus (Madex)

Serenade

Bacillus thuringiensis

Preferal

Spinosad (Conserve)

Crop

Apple

Strawberry, black currant,
raspberry

Strawberry; indoor

Raspberry and blackberry indoor



3. Other preparates

red colour – not approved

green colour - approved

Preparat

Nordox (Cu)

Fatty acids (soap)

Green soap

Lime sulphur (Curatio)

Paraffin oil/ mineral oil (Fibro)

Crop

Fruit and berry

Apple

Fruit

Last word:

- We want
 - Resistant varieties
 - New methods for plant protection
 - Lower application fee
 - The same plant protection prepares as our neighbour countries
 - Still approval for Cu, sulphor and mineral oil

