

Alnarp, Sweden, 5th of June, 2015

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EXPERIENCES WITH BYDV IN WINTER CEREALS IN DENMARK

BYDV IN DENMARK

- No problem in summer cereals.
- Normally a relatively small problem in winter cereals.
- Heavy attacks in winter barley and winter wheat in 2007 in the southern regions.

BYDV IN WINTER CEREALS

- Heaviest attacks ever in 2015.
- In many parts of Denmark.
- Also some winter rye fields with more widespread attacks.

A wide-angle photograph of a lush green winter barley field. In the background, a power station with several tall metal towers and insulators is visible, partially obscured by trees with some yellowing leaves. The sky is overcast. The text "BYDV in winter barley, November 2014" is overlaid in white in the upper right quadrant.

BYDV in winter barley, November 2014

Photo: H.C. Lassen, Landbosyd

BYDV in winter barley, April 2015





Around 90 per cent attacked winter wheat plants in April 2015. Sown 29 th August



Early attacks in winter wheat in April 2015

BYDV IN RYE

A close-up photograph of a rye field. The plants are green, but many show signs of being affected by BYDV (Barley Yellow Dwarf Virus). The leaves are distorted, curled, and have a reddish-purple or brownish tint, particularly at the tips and along the edges. Some leaves appear stunted and have a mottled appearance. The background is a dense field of similar plants, some showing similar symptoms.

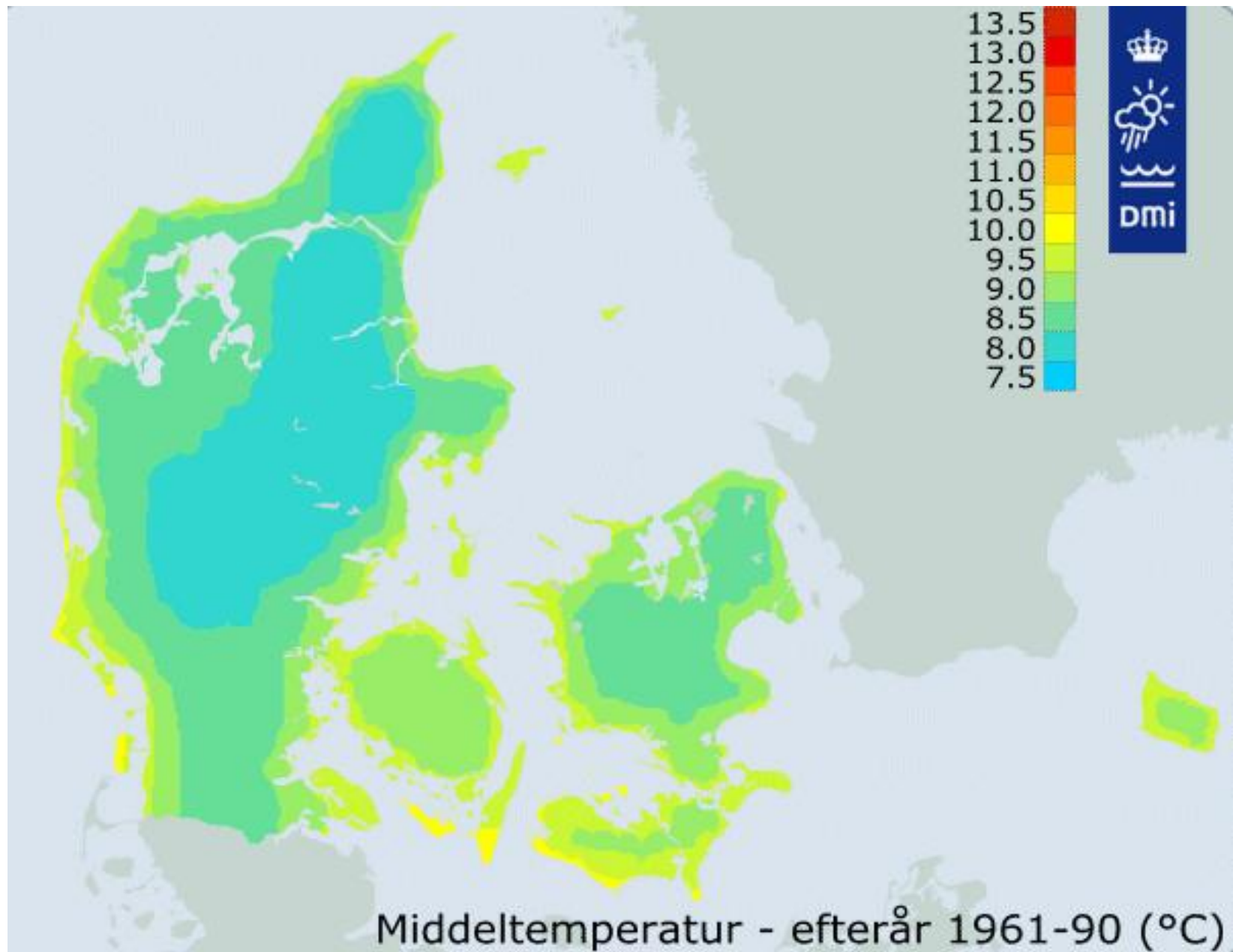
1. jul 2015



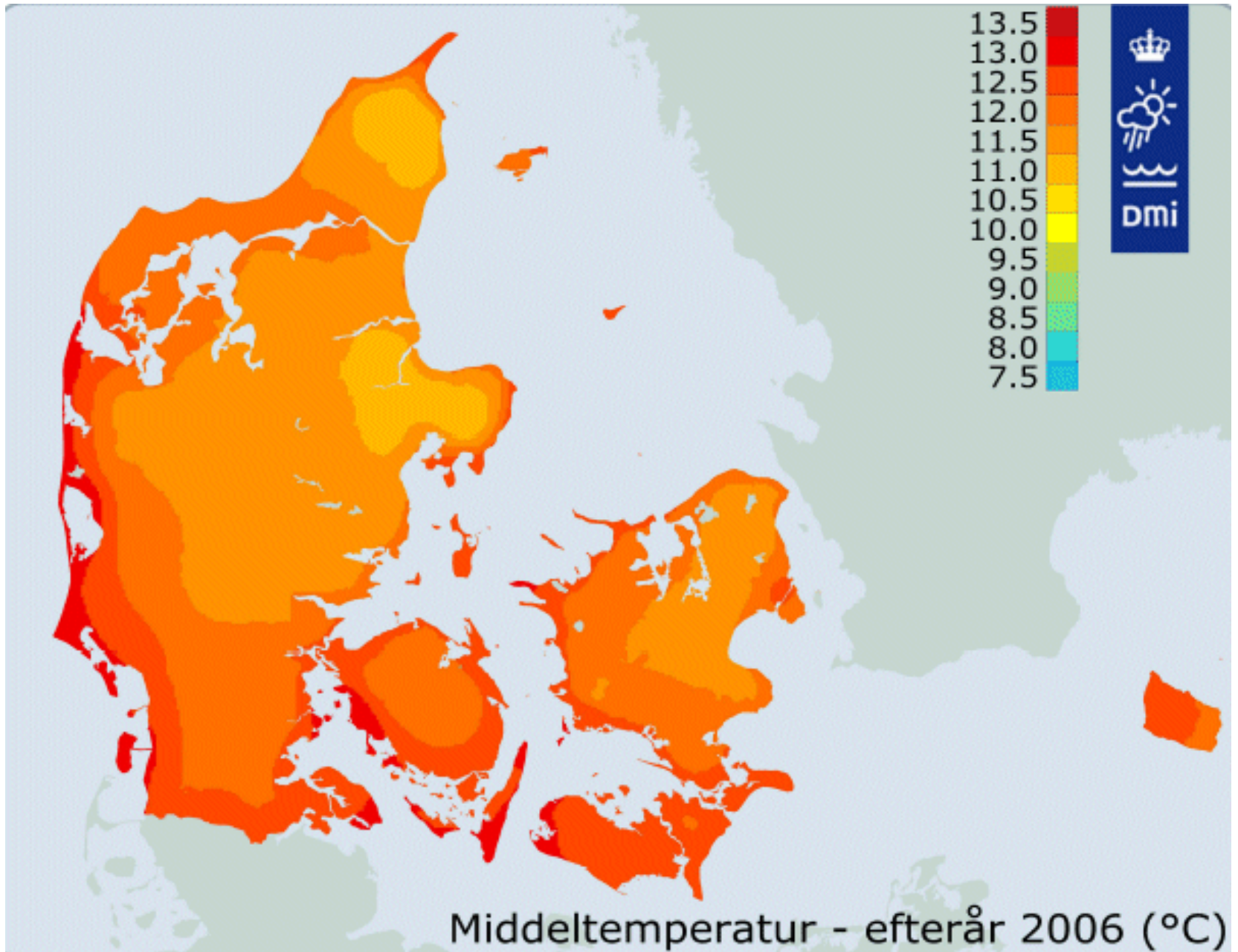
Around 80 per cent attacked rye plants in May 2015, sown 5 th
September

REASON FOR HEAVY ATTACKS IN 2015

- Very warm autumn 2014. Warmest since 1874.
- Many aphids.
- Early sowing possible.
- New in 2014: Fewer catch crops necessary when sowing winter wheat before 8 th September.
- Increased use of hybrids in winter barley and winter rye (expensive seed).



Temperature, C°, autumn, average 1961-90

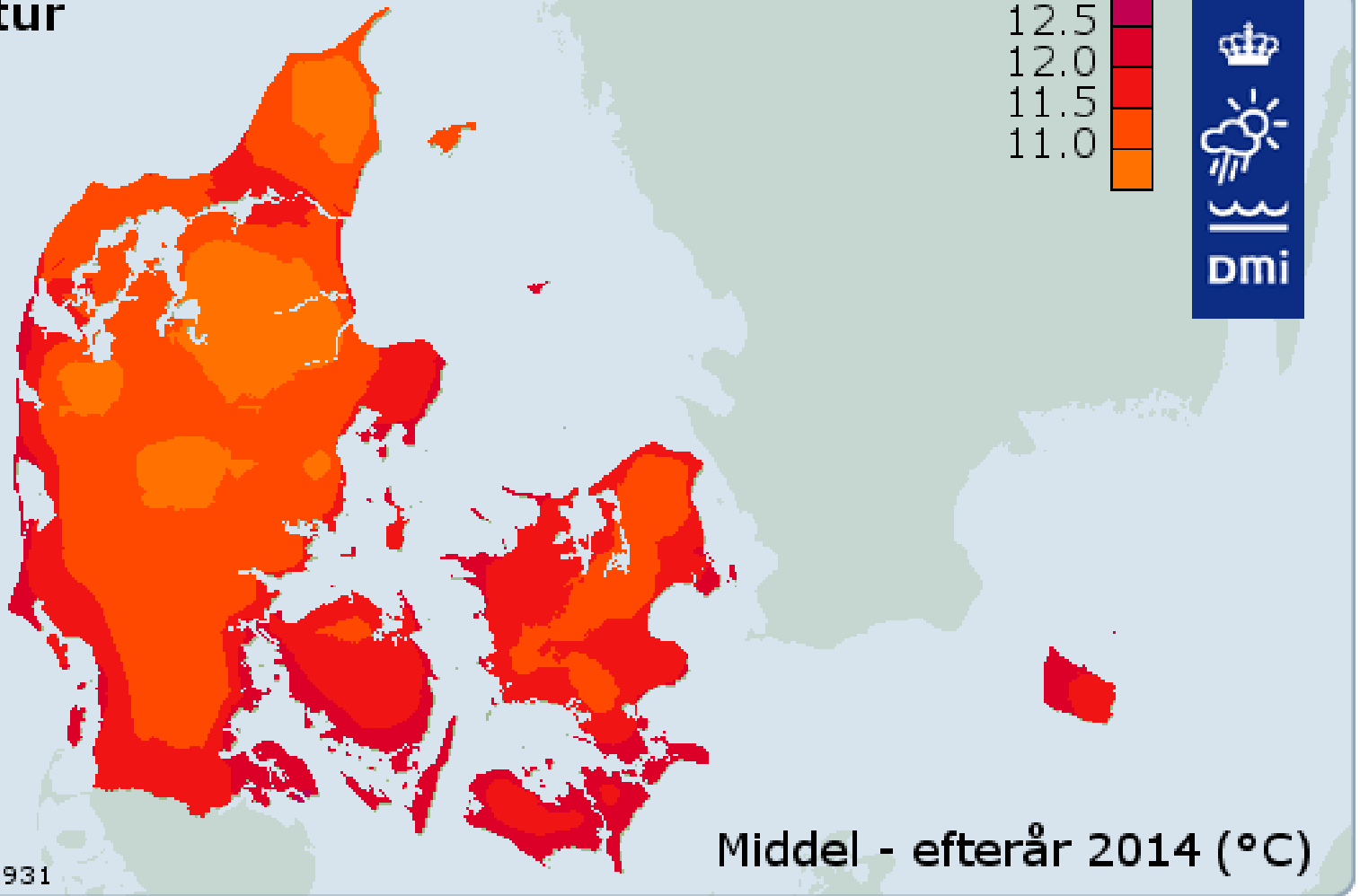


Middeltemperatur - efterår 2006 (°C)

Temperature, C°, autumn 2006

Temperatur

Foreløbige værdier

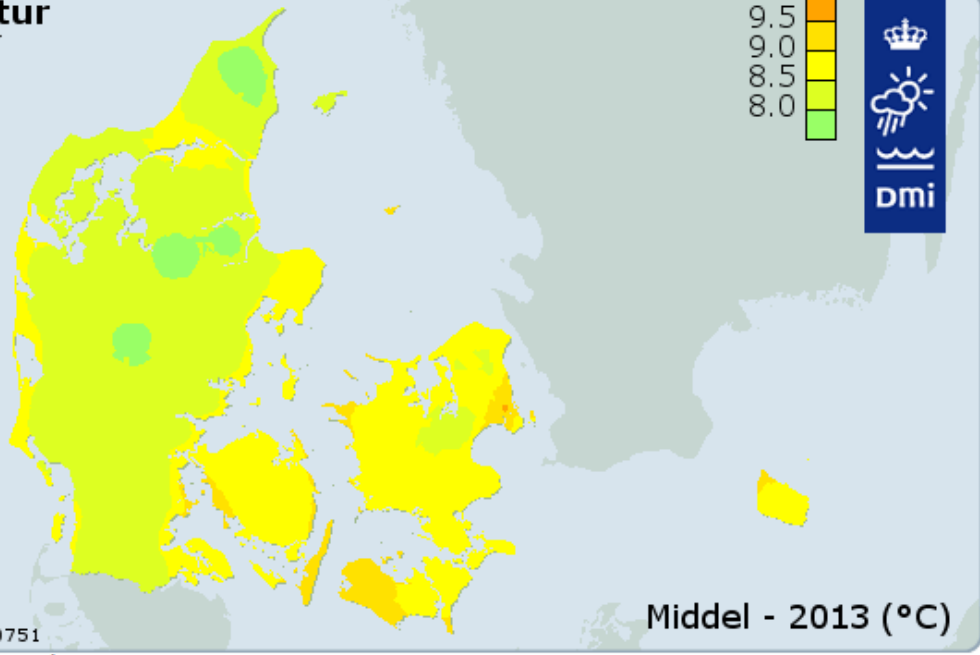
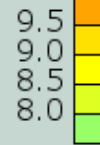


Temperaturen i Danmark i efteråret 2014.

Temperature, C°, autumn 2014

Temperatur

Foreløbige værdier



Middel - 2013 (°C)

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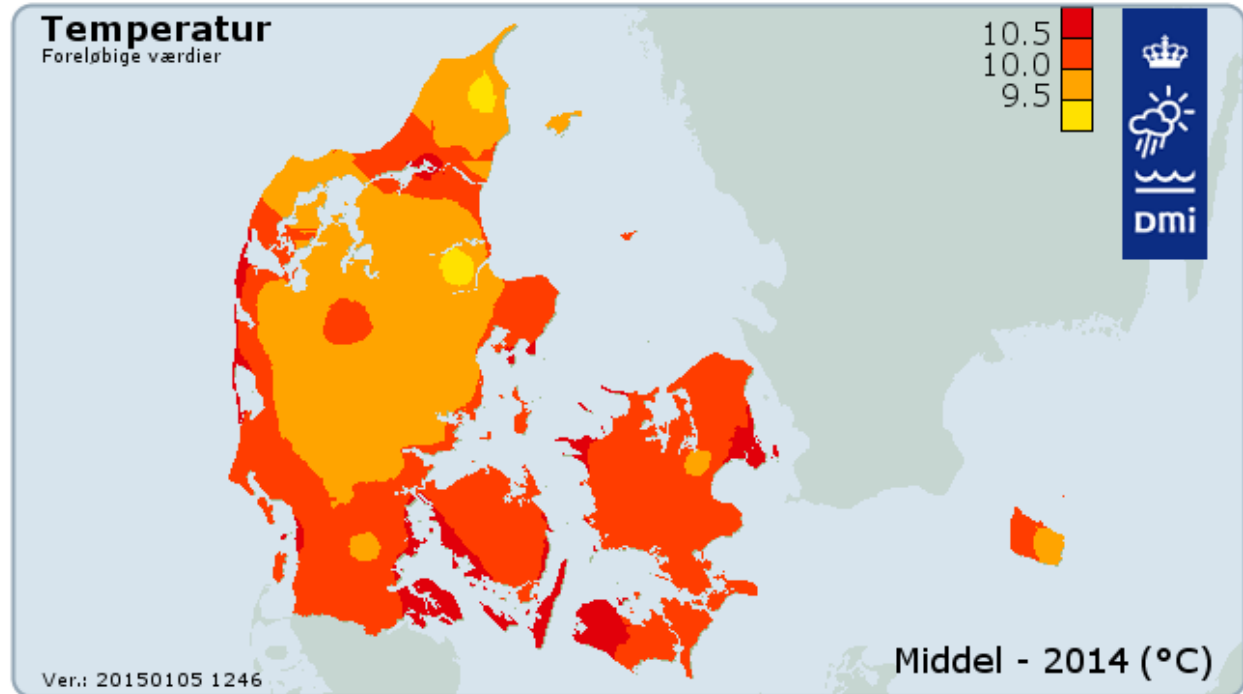
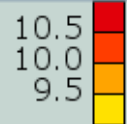
Temperaturen i Danmark i året 2013. Grafik Mikael Scharling.

Average temperature,
whole year

How important is the
weather in the summer
for the attacks with
aphids in autumn ?

Temperatur

Foreløbige værdier



Middel - 2014 (°C)

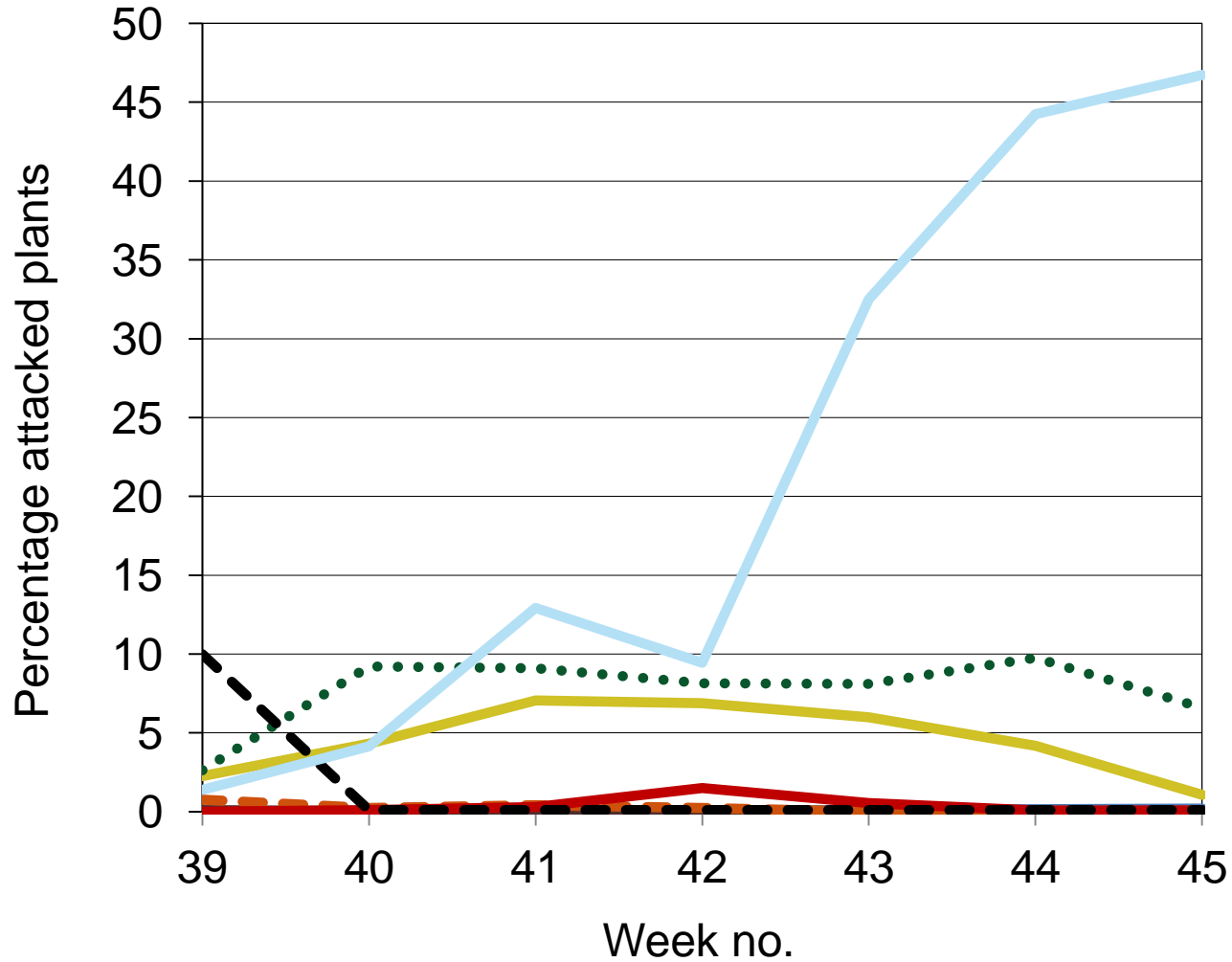
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Temperaturen i Danmark i året 2014. Grafik Mikael Scharling.

MONITORING OF APHIDS

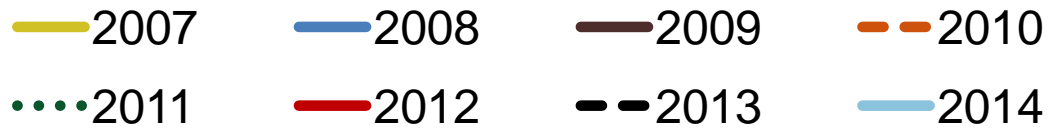
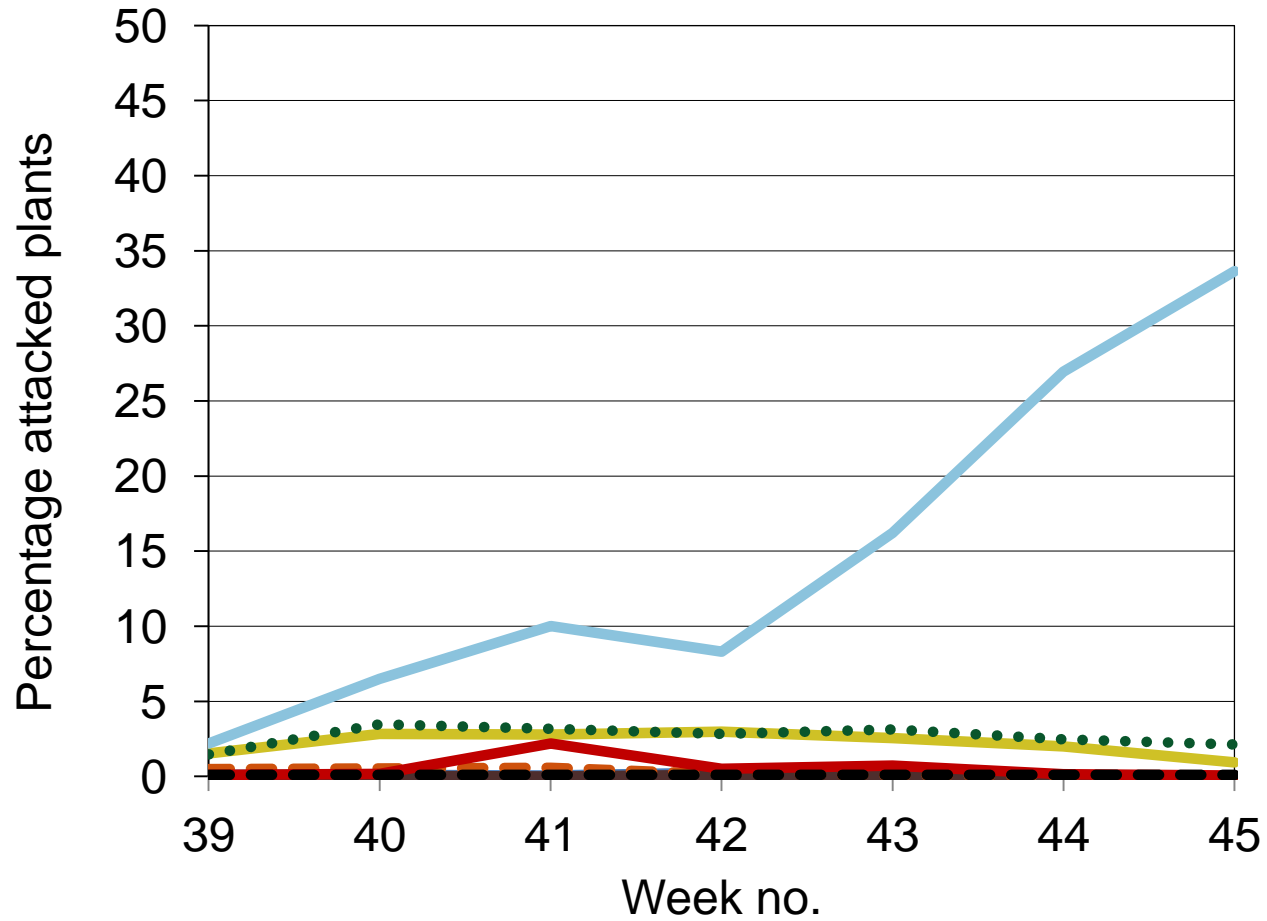
- Monitoring of aphids started in 2007 after the widespread attacks in the southern regions in 2007.
- Advisers monitor aphids from medio September to the beginning of November in around 25 winter barley fields and 35 winter wheat fields.
- Results on: www.landbrugsinfo.dk/regnet.
- Monitoring in "high risk fields"; sown before 15th of September and in mild coastal areas.
- An untreated area in all fields to see if advise was correct.

Aphids in winter barley, autumn 2007-2014



— 2007 — 2008 — 2009 - - 2010
••• 2011 — 2012 - - 2013 — 2014

Aphids in winter wheat, autumn 2007-2014





Aphids in winter barley medio November 2014



Medio November 2014

MONITORING SYSTEM

- 35 winter wheat fields and 25 winter barley fields.
- Treated and untreated



Sprayed 3 th and 13 th October

Blocked nozzle in the same field
with winter barley



QUESTIONNAIRE TO ALL ADVISERS IN JUNE 2015

- Percentage resown crops and percentage attack in fields in all areas in Denmark.
- Effect of:
 - Sowing date
 - Variety
 - Precrop
 - Soil cultivation
 - Spraying; dates and doses
 - Other experiences

DIFFERENCES IN SUSCEPTIBILITY ?

BYDV in 2 trials in winter barley 2015

Variety	2- or 6- rowed	Per cent attacked plants, BYDV	
		Trial 1	Trial 2
Mixture*	2	34	10
Quadra	6, hybrid	6	10
Trooper	6, hybrid	14	10
Wootan	6, hybrid	8	10
Matros	2	36	10
Padura	2	26	10
KWS Meridian	6	10	10

* Zirene , Padura, Frigg, Matros

BEST TIME OF SPRAYING ?

- Too early together with control of weeds.
- In the latter half of October a good time but variations.
- 2 sprays in October necessary in some fields.



Sprayed 6 th November



Sprayed October



BYDV in winter barley – how big is the yield loss ?

BYDV in winter barley



BYDV in winter wheat – how big is the yield loss?



YIELD LOSS IN 1 WINTER WHEAT FIELD IN DENMARK IN 2007

÷ BYDV

+ BYDV



Yield loss in attacked patches: 45 per cent

BYDV IN WINTER WHEAT

- Short straws
- Smaller roots
- Fewer and smaller ears
- Small kernels
- Secondary attack of:
 - Cladosporium, Alternaria

Symptoms similar to “Take All”



YIELD LOSS IN ATTACKED PLANTS

- Important to know because resowing necessary at heavy attacks.
- **Winter barley:** around 90-100 per cent yield loss (60-100 per cent in literature) .
- **Winter wheat:** around 50 per cent (20-80 per cent in literature).
- **Winter rye:** 15 per cent yield loss ?

TRIALS/STUDIES IN 2015

- Yield loss in attacked patches in 9 trials in winter wheat and 2 trials in winter rye.
- Yield loss in attacked areas in fields in our monitoring network.