

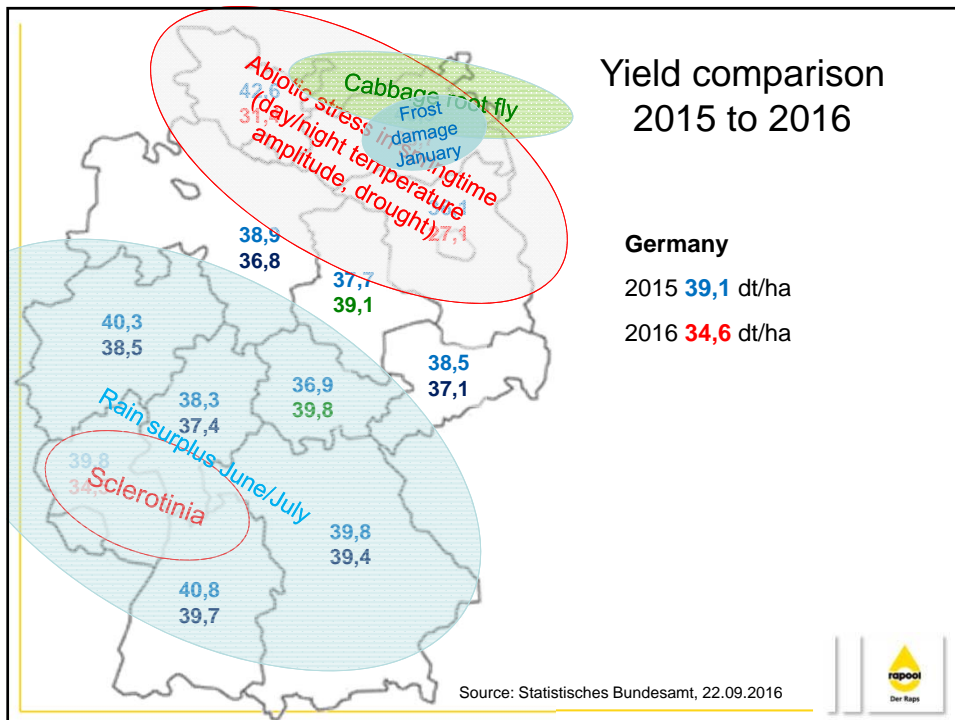
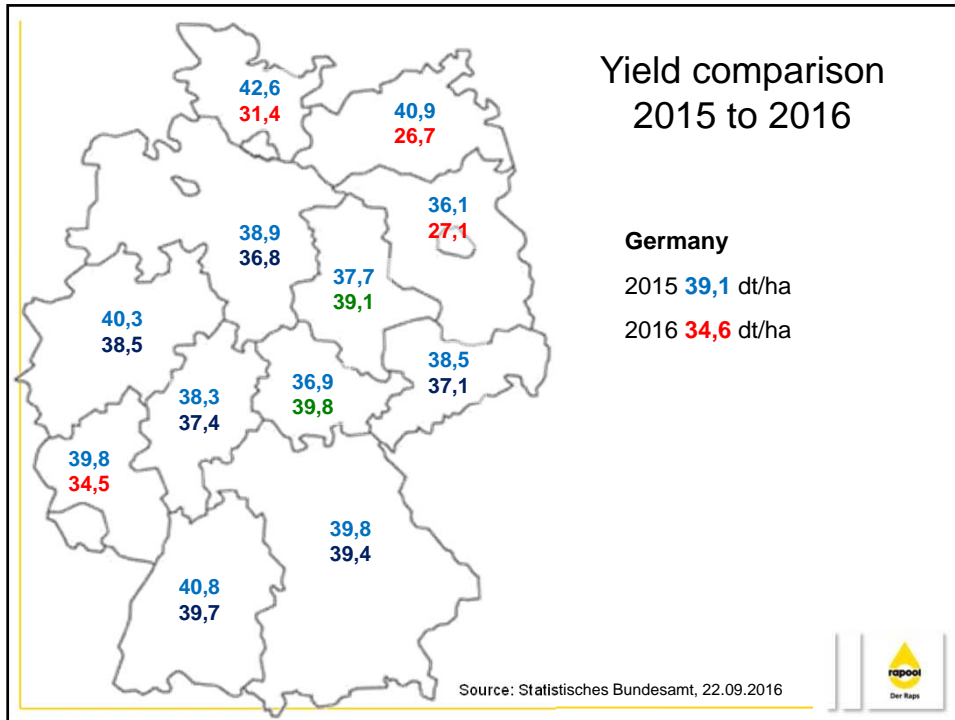


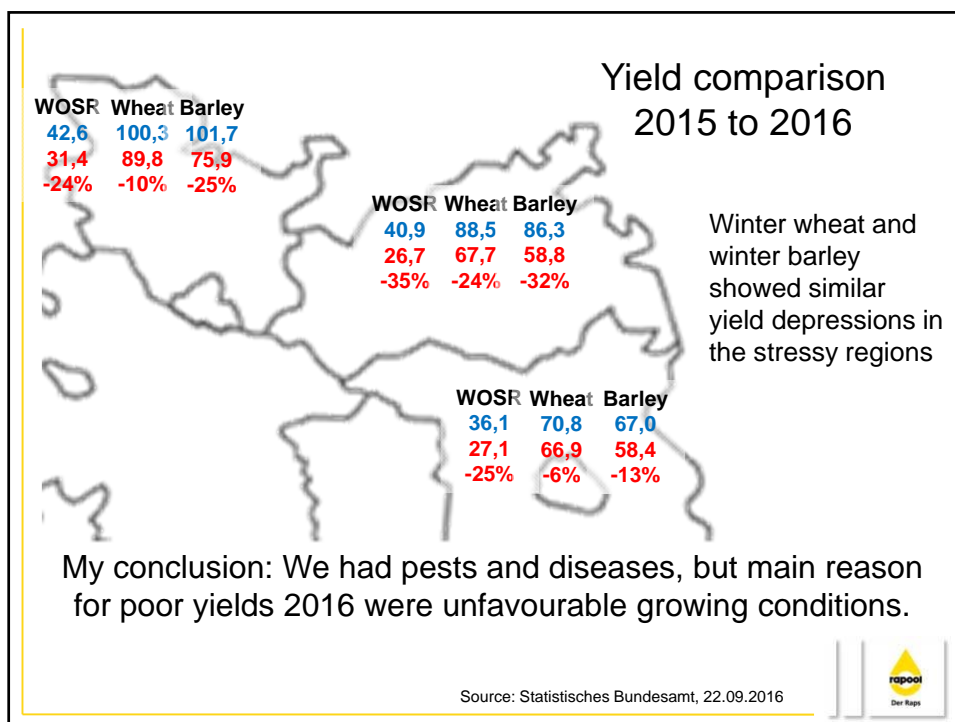
Rainer Kahl

- 50 years old
- Come from a small farm in the north of Germany
- Studied agriculture in Kiel
- Work since 20 years for Rapool shareholder companies
- Rapool is sales unit of 3 private owned german breeding companies , specialized on OSR, founded 1974


NPZ Lembke
DSV Deutsche Saatveredelung
WvB Eckendorf



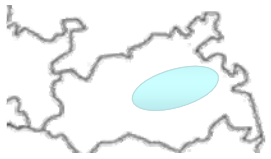




Warm winter 2015/16, but...




Nov./Dec. warmest months ever, full growth, no winter hardiness.




Sharp temperature decline (from +15 to -15°C in 5 days) together with constantly sharp eastern winds

Only small region with severe problems.

Several poor fields with Clubroot and/or cabbage rootfly damage were ploughed in spring.



pictures: R. Kahl





Raps Sternberg

Raps Stavenhagen

Getreide Stavenhagen

pictures: R. Kahl



N-fertilizer
February


N-fertilizer
March

Location Thüle, 08.03.2016

pictures: R. Kahl

Timing of first N-fertilization difficult

- delayed by moist conditions in February
- was important for regeneration in spring 2016 and presumably yield relevant.



Poor growing conditions spring 2016

February too wet, late fertilisation.


March and April dry and cold.
Delayed N-mineralisation.

Very high temperature amplitude with night frosts,
high radiation and strong eastern winds = stress.

Snow in flowering period.

Very poor regeneration after winter. Plants often
have „no power“, remain shorter than normal with
poor podset.

pictures: R. Kahl



Mistakes in crop management:

Poor straw/swath distribution, extensive seedbed preparation and late removal of cereal weeds

picture: R. Kahl





Abiotic stress in June/July


2 heat waves in June / July with temperatures clearly above 30°C induce premature seed ripening.

Many crops with healthy green stems start second flowering even before harvest.

Translocation of assimilates is disrupted too early resulting in low TGW.

End of ripening period with below normal radiation limits also oil content which remains average.

picture: R. Kahl

Harvest 2016

Northern Germany with partly very poor yields.


Stacking of several limiting abiotic and biotic factors.


High yield gap in official variety trials. Some „modern“ varieties (i.e. ATORA – genetics) have performed clearly better.

In average 500 – 600 kg/ha more yield with higher intensity. „Sensitive“ varieties up to 800 kg/ha better with treatment.

- Intensive = growth regulator/fungicide autumn + spring, fungicide in flowering. Insecticides when over thresholds.
- Extensive = only fungicide in flowering when risk of sclerotinia. Insecticides when over thresholds.

picture: R. Kahl





Actual problems in autumn 2016


Sowing campaign in many regions dry

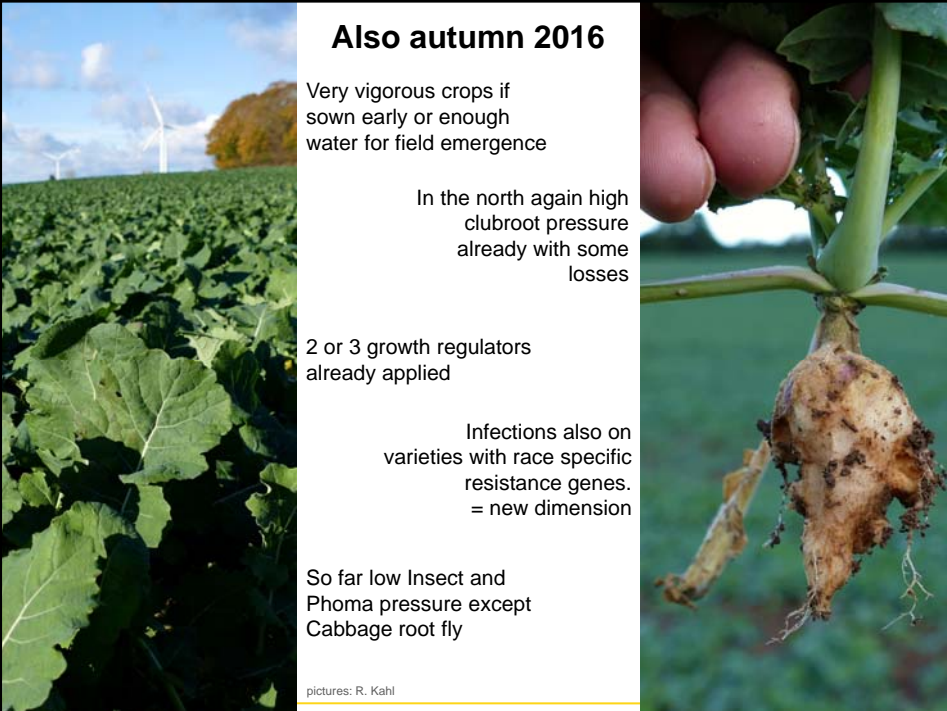
Extremely high temperatures (>30°C) in September

Poor or irregular field emergence due to drought

Sufficient rainfalls in some regions mid September, Northeast only begin October lead to very late emergence.

pictures: R. Kahl





Also autumn 2016

Very vigorous crops if sown early or enough water for field emergence

In the north again high clubroot pressure already with some losses


2 or 3 growth regulators already applied

Infections also on varieties with race specific resistance genes.
= new dimension

So far low Insect and Phoma pressure except Cabbage root fly

pictures: R. Kahl







pictures: R. Kahl

Future limiting factors growing OSR in Germany

Novellation of fertilizer law

- Restricts N and P fertiliation
- Increased bureaucracy and official controls
- Higher costs for administration
- Reduction of yield and yield safety
- Will require high crop protection use for better N-values

Comes on top of other restrictions


- Losses of crop protection products
- Greening
- Poor public image
(industrial farming, animal cruelty, pesticides, bee health, biodiversity,...)



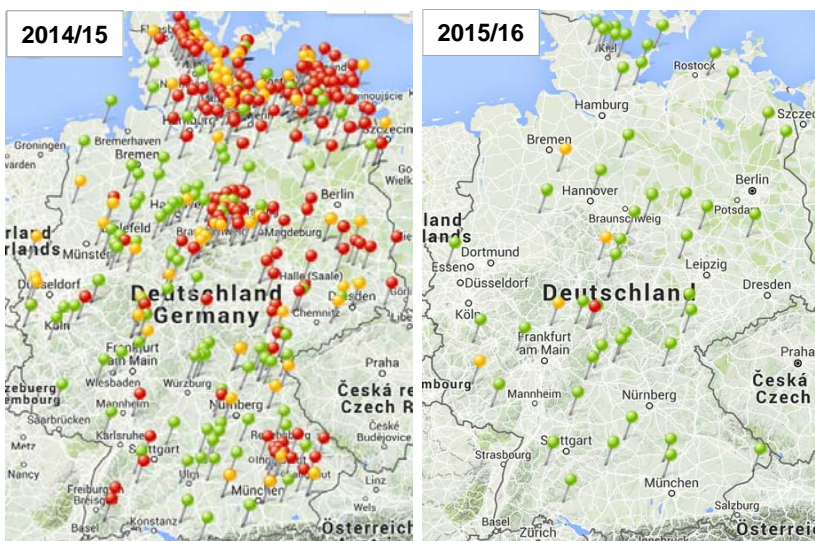


	<p>Rapsjirdloppa (Psylliodes chrysocephala)</p> <p>Increased discussion since ban of neonics in 2014, but damage not new.</p> <p>April 2000</p> <p>Much damage in autumn 2014 with some destroyed fields.</p>
	<p>KDR Resistance widespread in North and Northeast</p> <p>Farmers tend to spray (too) early and miss check end of growing season.</p> <p>Oct. 2014</p>
	<p>So far no catastrophe, but higher efforts and reduced yield / yield safety.</p> <p>Sept. 2016</p>

pictures: R. Kahl



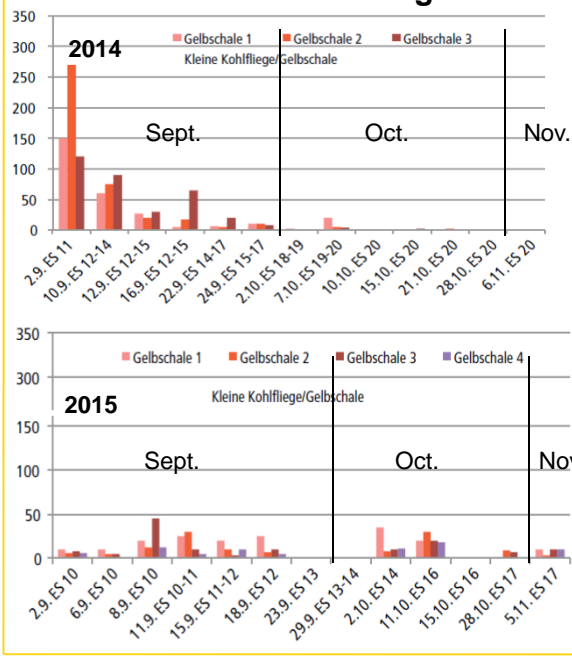
Rapsjordloppa (Rapool-Monitoring)



- 554 Teilnehmer (27.08.14 - 04.06.2015)
- 65 Teilnehmer (30.07.15 - 31.12.2015)
- Höchster Schaden in Nord und Ost
- Nur vereinzelt höhere Schäden.



Liten Kållfluga – Delia radicum



2014 1st year without insecticide treatment
 Massive and early attack, massive root damage
 High yields at harvest 2015

2015 low pressure in September, but partly high larvae number in Nov./Dec.
 4 generations
 Late root damage not deadly, but increasing stress problems
 Poor yields at harvest 2016

Location Fahrendorf, Schleswig-Holstein
 Source: M. Landschreiber, BB 27.08.2016



First weevils in spring

	Rape stem weevil <i>Ceutorhynchus napi</i>	Cabbage stem weevil (Fyrtrandad rapsvivel) <i>Ceutorhynchus quadridens</i>
yellowdish trap without grid cover	10 adults in 3 days	15 - 30 adults in 3 days
yellow dish trap with grid cover	5 adults in 3 days	10 - 15 adults in 3 days

Treatment immediately after exceeding threshold



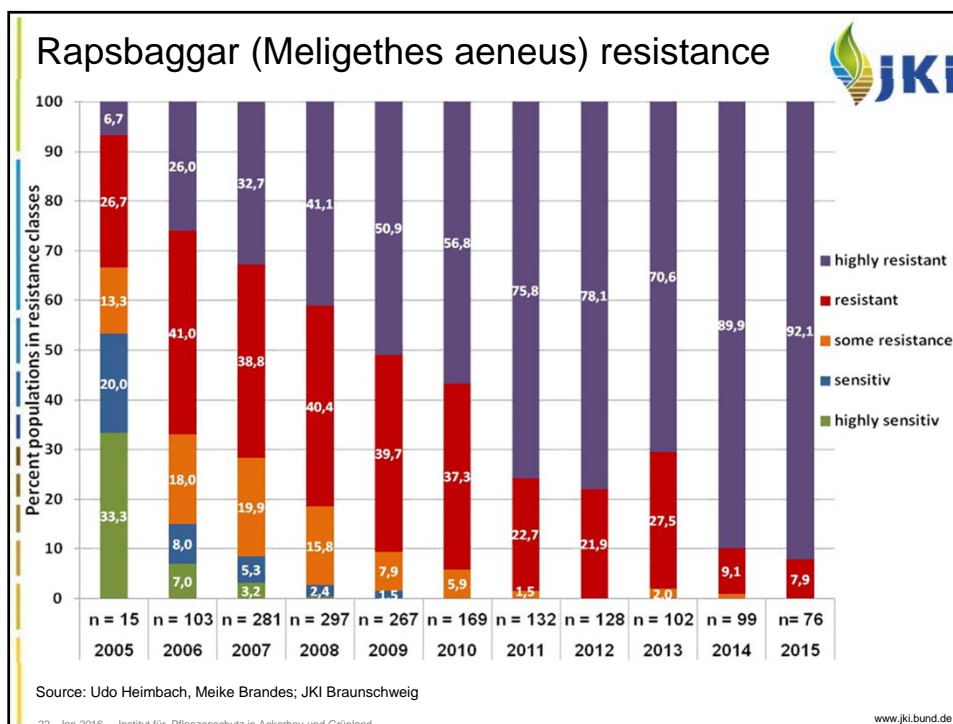


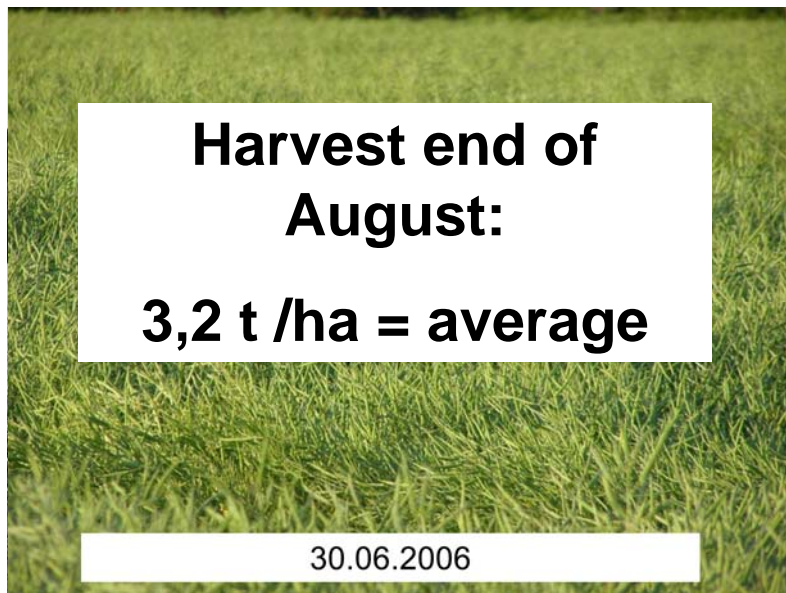
Foto: R. Kahl

Need time for feeding before laying eggs, treatment about 10-14 days after first appearance





Rapsbaggar (Meligethes aeneus) damage



pictures: R. Kahl



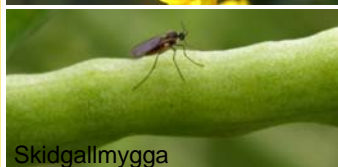
Spraying in flowering time



Sclerotinia



Blygrå rapswivel



Skidgallmygga

Farmers prefer to spray early at begin flowering, afraid of crop damage at later spraying times.

Pests and diseases with different development rhythm.

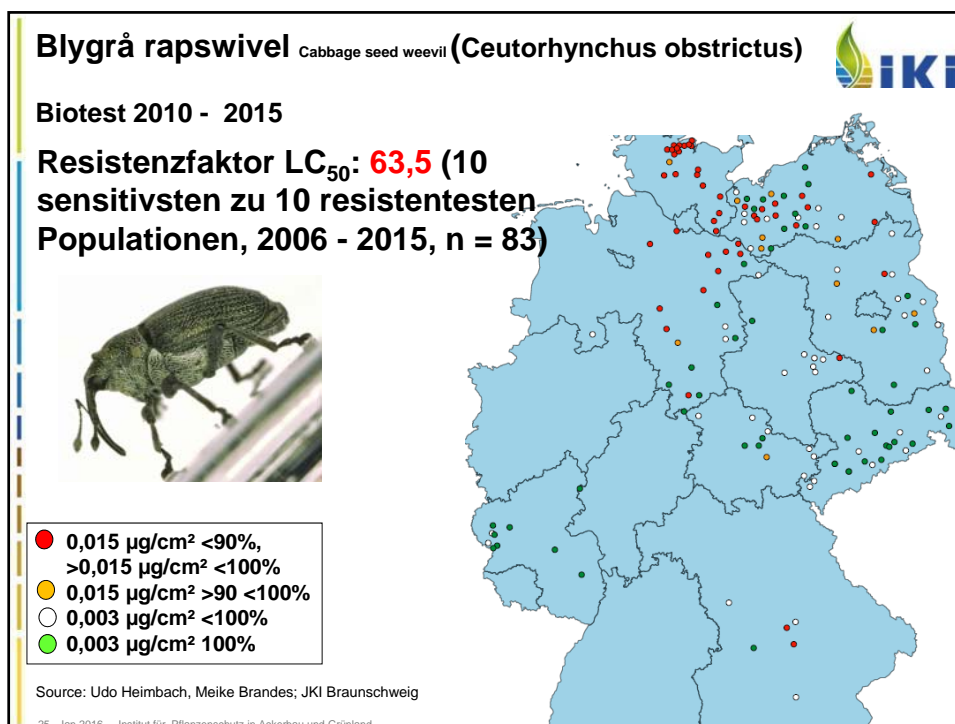
This spring beginning and full flowering very dry conditions. Too dry for Sclerotinia. Low pressure of cabbage seed weevil, too early for pod midge. No treatment necessary, but most farmers did.

Long flowering period. End of flowering period rainy and warm weather led to partly late but severe Sclerotinia damage.


Spraying was already 3 weeks ago – no protection any more. Farmers are often not aware of this.

pictures: R. Kahl





Blygrå rapswivel Cabbage seed weevil (*Ceutorhynchus obstrictus*)



KDR resistances common in northern Germany, beginning in other regions.

But so far no increasing numbers / no increasing damage reported by farmers.


So far, spring weevils are more in the focus of farmers.


In the past, insecticide treatment with Pyrethroids was often done as standard together with Sclerotinia treatment = resistance selection

This year reduced / more selective spraying in flowering period because BISCAYA (Thiacloprid) forbidden.

Harvest 2014

pictures: R. Kahl





**Skidgallmygga Brassica pod midge
(*Dasineura brassicae*)**

So far no resistances found



Almost impossible for farmers to monitor.

Small fields more vulnerable because more damage on border of the field. Recommendation of treating only border.

Appears often late, therefore difficult to treat.

Yield losses cannot be avoided, but difficult to estimate (up to 0,2 – 0,4 t/ha?).

pictures: R. Kahl

**Kalmal Cabbage moth
(*Plutella xylostella*)**

Massive appearance in June mainly in spring oilseedrape and other brassica crops. WOSR no problem.


First time for me the moth caused any problem.


Very difficult to spray. Positive trial results i.e. with Chlorantraniliprole (not yet registered for OSR).

We were afraid of severe attacks on new sowing of WOSR in August/September.

There were only some minor regional problems.

pictures: R. Kahl





Bladlus Aphids

Massive multiplication this autumn due to perfect climatic conditions in September.

All time high level of infestation. No one believed that aphids could kill healthy plants only by suction. We learned that they can! Farmers sprayed a lot!

Missing insecticide seed treatment becomes clearly visible.


Spraying was not successful because only Pyrethroids allowed. Aphids with resistances and also well protected below the leaves.

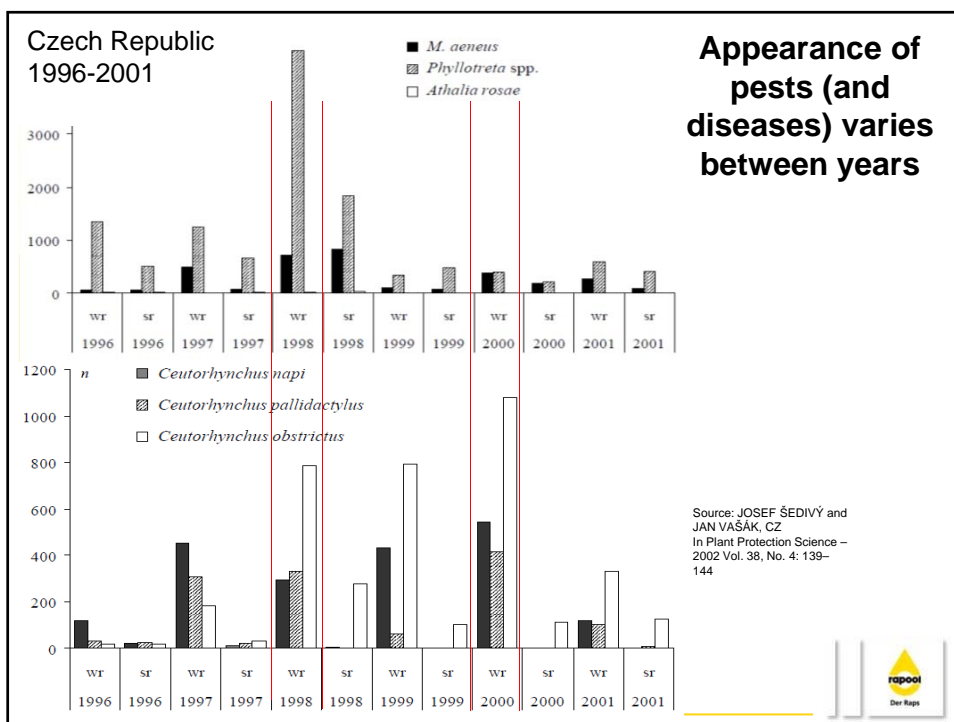
Spraying kills beneficials.

Discussion on TUYV infestation and importance for seed yield.

Waiting for new insecticides (Flonicamid?)

pictures: R. Kahl





Appearance of pests (and diseases) varies between years

There is not only the way „up“, but also „down“, even if resistances are building up.

Exception: No „down“ for clubroot!

This may demonstrate that all „problems“ themselves follow also lifecycles and depend on predators, weather conditions, ...Every year, there is a “new” main problem.

Prediction is difficult, pest control becoming more and more complicated.

We do have to hope that climatic conditions / timing next year will be unfavourable for this years pests.

(we feel a little helpless, it's not in our control. It is not a nice answer, but I have no better one).



pictures: R. Kahl

Are there any solutions / ideas except of chemicals?

- Crop rotation
- Stubble management
- Seedbed preparation
- Sowing time
- Fertilization
- Increased stress tolerance
 - tolerant/resistant varieties
 - increased growth vigour
 - Seed treatment

You never know which factors may be limiting in the coming season.

A strong, healthy plant with good roots is the best you can do!



