

Growers' perspective: importance of insect control for oilseed rape production

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- **Oilseed rape and turnip rape seed production in EU-28**
- **Insect pests and resistance situation**
- **Ban of neonicotinoid seed treatment**
- **New options ?**
- **Summary and conclusion**

Oilseed rape and turnip rape seed production in EU-28

Oilseed rape and turnip rape seeds in EU-28 (1,000 ha) and part of arable land (%) 2012 - 2016



	2012	%	2013	%	2014	%	2015	%	2016	%
EU-28	6208.9	6	6710.7	6	6714.2	6	6465.8	6	6547.3	
BE	12.6	2	14.3	2	12.2	1	11.3	1	11.5	
BG	134.5	4	134.7	4	190.2	5	170.4	5	171.5	
CZ	401.3	16	418.8	17	389.3	16	366.2	15	393.0	
DK	129.1	5	177.2	7	166.1	7	193.5	8	163.2	
DE	1306.2	11	1465.6	12	1394.2	12	1285.5	11	1325.7	
EE	87.1	14	86.1	14	80.0	12	70.8	11	70.1	
IE	17.5	4	13.7	3	9.4	2	8.9	2	9.9	
GR	0.4	0	0.5	0	0.8	0	1.7	0	1.7	
ES	28.8	0	42.5	0	43.2	0	71.0	1	89.8	
FR	1606.9	9	1437.7	8	1503.0	8	1498.6	8	1550.7	
HR	9.9	1	18.0	2	23.1	3	22.0	3	37.0	
IT	10.6	0	18.7	0	16.6	0	12.2	0	13.6	
CY	0	0	0	0	0	0	0	0	0	
LV	114.9	10	127.0	11	94.4	8	88.0	7	100.0	
LT	260.8	12	259.0	11	215.1	9	163.5	8	151.0	
LU	4.6	7	4.5	7	4.1	7	4.0	6	3.5	
HU	164.9	4	197.6	5	213.7	5	220.6	5	256.5	
MT	0	0	0	0	0	0	0	0	0	
NL	2.0	0	3.0	0	3.0	0	2.3	0	1.7	
AT	55.8	4	58.6	4	52.8	4	37.5	3	39.7	
PL	720.3	7	920.7	9	951.1	9	947.1	9	826.9	
PT	0	0	0	0	0	0	0	0	0	
EO	105.3	1	276.6	3	406.7	5	367.9	4	470.5	
SI	5.1	3	6.1	4	5.6	3	1.6	1	3.2	
SK	106.8	8	136.6	10	125.6	9	119.3	9	124.5	
FI	57.4	3	52.7	3	43.0	2	55.3	2	60.4	
SE	110.0	4	125.5	5	96.0	4	94.5	4	92.7	
GB	756.0	12	715.0	11	675.0	11	652.0	11	579.0	

- Only 6 (7) countries without significant production
 - Countries with area about 10 % of arable land (Slovakia, Lithuania, France, Poland)
 - Countries with area more than 10 % of arable land (Germany, Great Britain, Estonia, Czechia)
- **Oilseed rape and turnip rape seed production important part of plant production!**

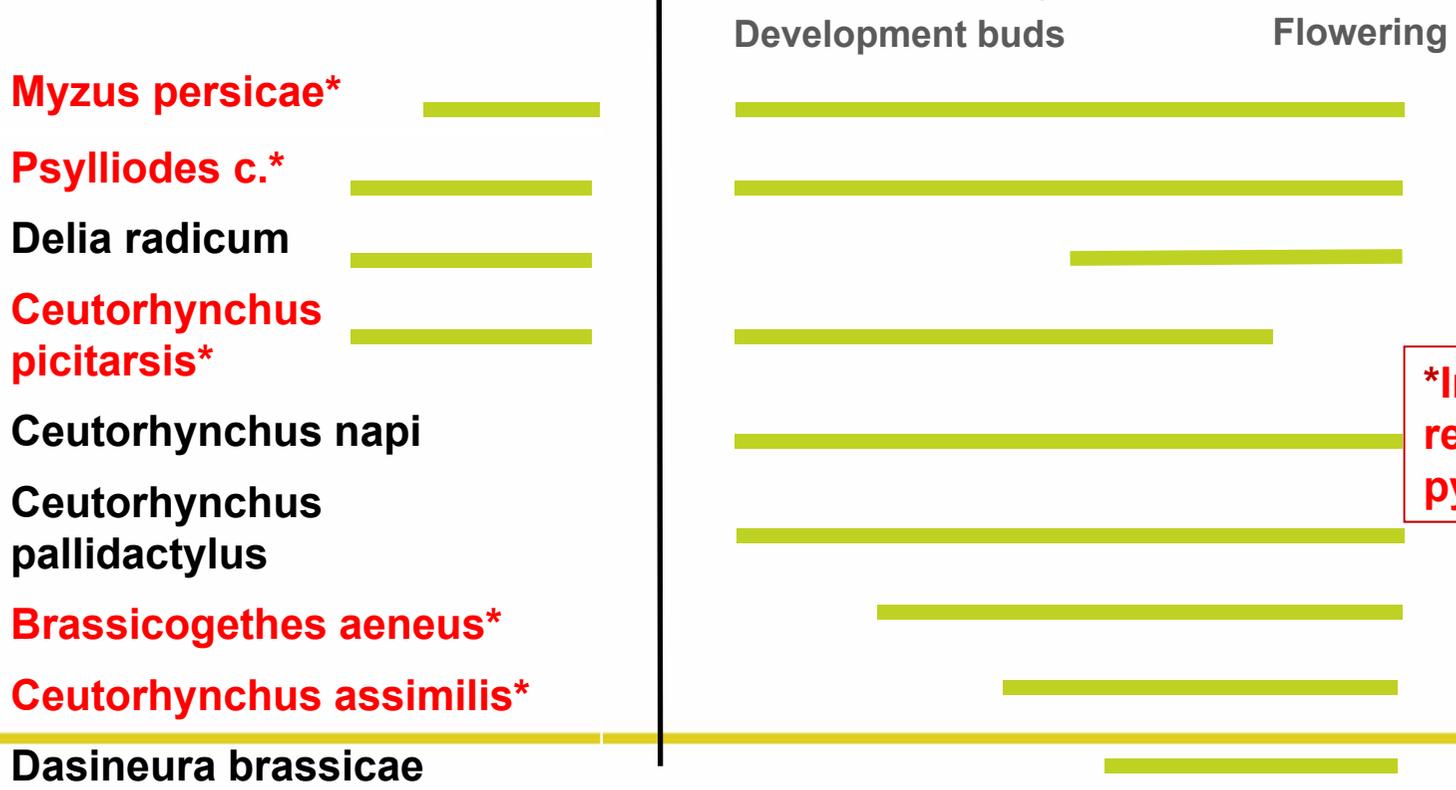
Source: EUROSAT 2017

Insect pests and resistance situation

Insect pests of winter oilseed rape and resistance situation in Germany



Bidquelle: Lancashire et al. (1991)



***Insect pests with resistance against pyrethroids**

Ban of neonicotinoid seed treatment

- In January 2013 the European Commission proposed to restrict the use of three seed treatment neonicotinoids.
- Since 1st December 2013 farmers have been unable to buy or sow seeds that are treated with Clothianidin, Imidacloprid and Thiamethoxam on crops that are known to be attractive to bees.
- When implementing the restrictions, the European Commission confirmed that within two years after imposing the ban it would initiate a review of new scientific and other relevant information on the risks posed to bees.

... and the European Food Safety Authority (EFSA) is reviewing and reviewing ...

Several member states allowed the use of neonicotinoid seed treatment for winter and spring oilseed rape cultivation, e.g. Finland, Romania, Latvia, Denmark, Estonia and Bulgaria.

Situation in Germany:

2014:

Several petitions to use clothianidin for seed treatment in winter oilseed rape: rejection by German authorities in every case

2015:

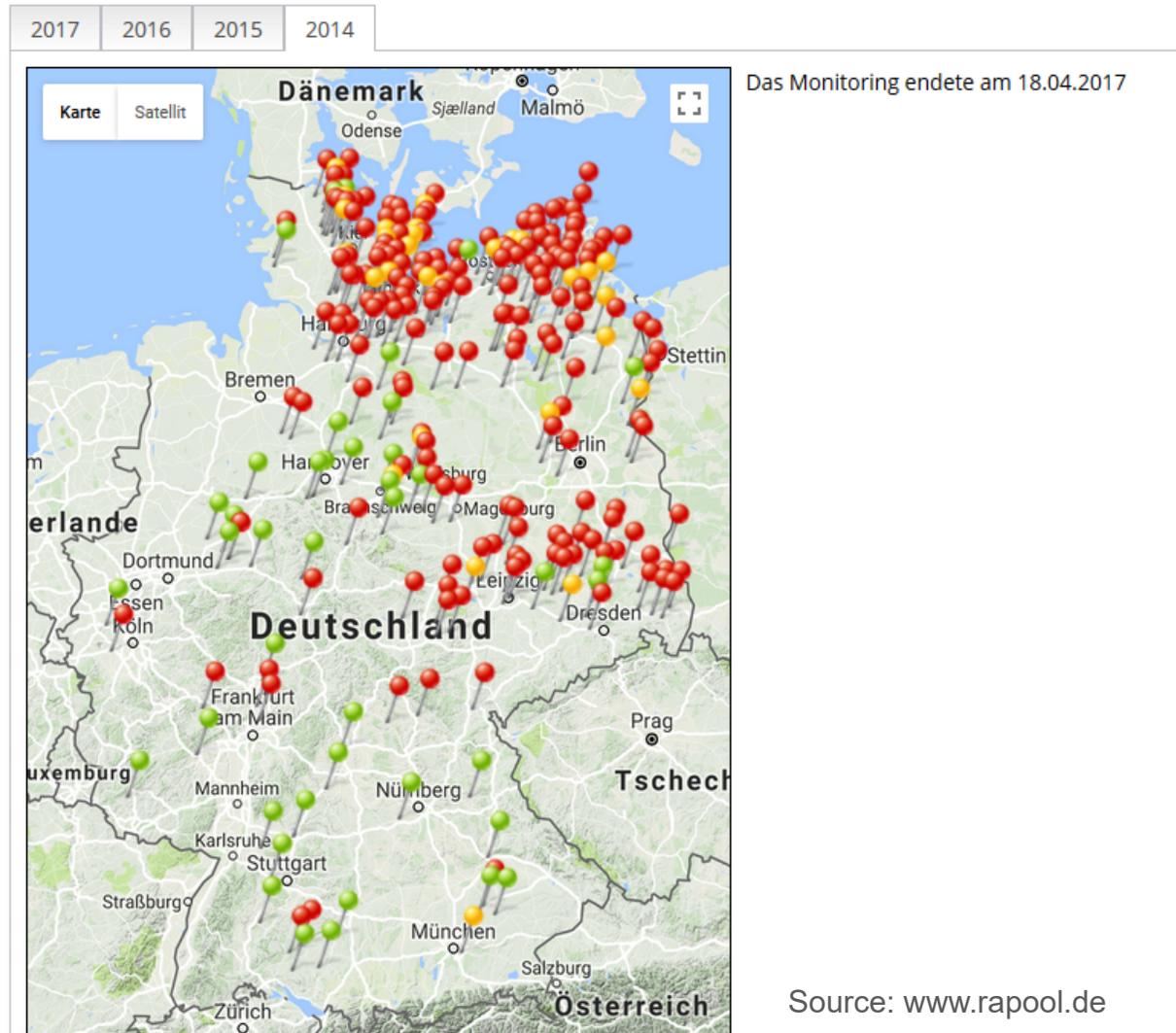
Two petitions to use neocicotinoids (1 x clothianidin und 1 x thiamethoxam) for seed treatment in winter oilseed rape: rejection by German authorities

2016:

Another year with petitions, but rejection by German authorities ...

Farmers will continue reducing oilseed rape cropping area in medium-term if no seed treatment is available!

Kohlfliegen-Monitoring



One German oilseed rape breeding organisation started in 2014 monitoring of *Delia radicum*.

Farmers feedback was very good.

Lot of problems caused by *Delia radicum* in the main rape seed growing regions in the north and east of Germany.

In Germany without seed treatment controlling of *Delia radicum* not possible!

Source: www.rapool.de

Massive damage on rapeseed roots by larvae of *Delia radicum* in autumn 2014 in Germany



Mecklenburg-Vorpommern
30.09.2014



Mecklenburg-Vorpommern 30.09.2014



Mecklenburg-Vorpommern
30.09.2014



Autumn 2014, Kahl



... following situation 2014 – no option of plant protection



Weak rapeseed seed formation as a result of loss of plants – Mecklenburg-Vorpommern 09.10.2014

Monitoring *Psylliodes chrysocephala* autumn 2014 – farmers feedback



Rapserrdfluh-Monitoring

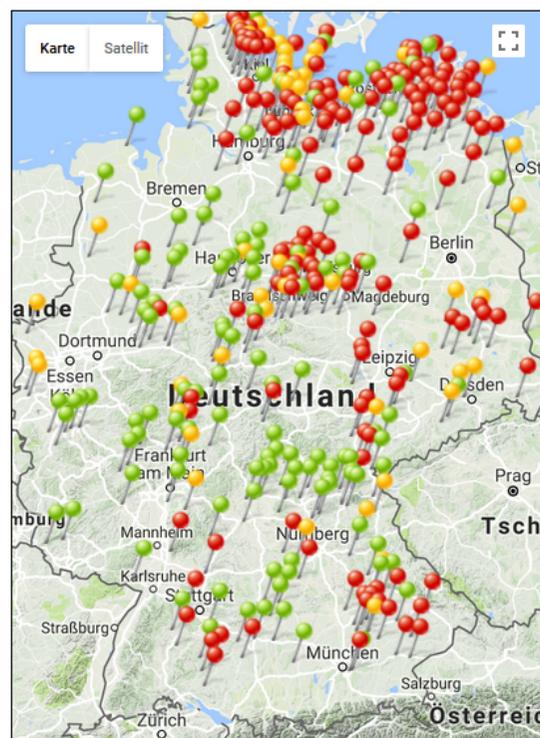
2017 2016 2015 2014

Bis 2013 bestand ein vorbeugender insektizider Beizschutz für die Auflaufphase des Rapses. Dieser ist seit 2014 nicht mehr möglich. Um einen Überblick über das zeitliche und räumliche Auftreten des Rapserrdfluhes zu bekommen, bitten Rapool und proPlant um Ihre aktive Mithilfe.

Die Feststellung der Rapserrdfluh-Aktivität erfolgt am besten über frühzeitig aufgestellte Gelbschalen. Sind keine Gelbschalen vorhanden, so muss durch regelmäßige Kontrolle der Blattfraß und ab Oktober/November auch der Larvenbefall in den Blattstielen beobachtet werden.

Bitte tragen Sie ein, wie Sie den jeweiligen Befall ermittelt haben.

Kalenderwoche



Das Monitoring endete am 18.04.2017

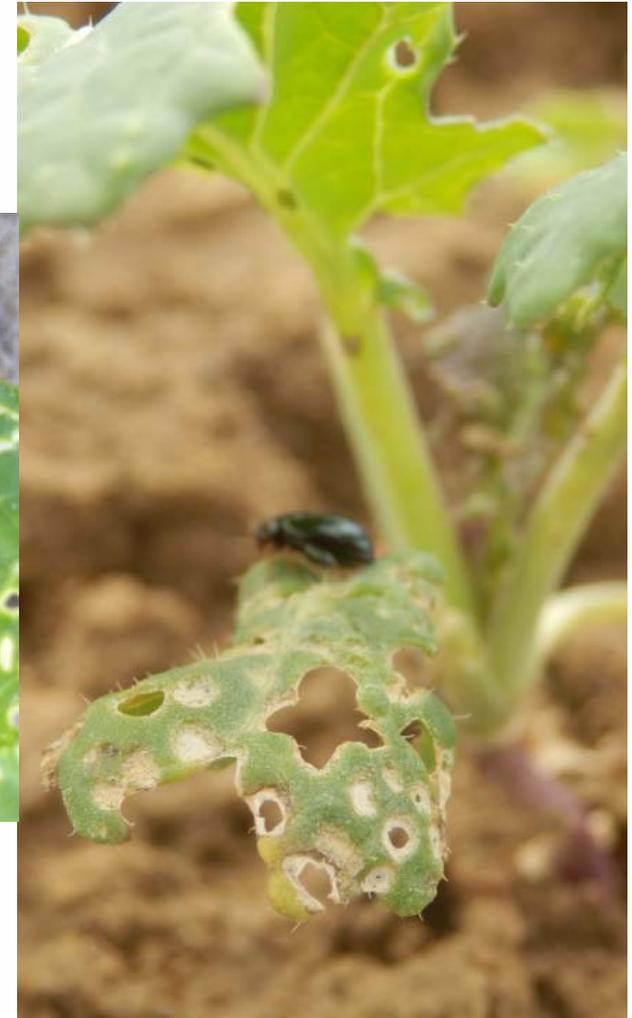
One German oilseed rape breeding organisation started in 2014 monitoring of *Psylliodes chrysocephala*.

Farmers feedback was also very good.

Lot of problems caused by *Psylliodes chrysocephala* in the main rape seed growing regions in the north and east of Germany, but in the south too.

**In Germany controlling of *Psylliodes chrysocephala* possible!
STILL ...
Resistance is going on!**

Damage by *Psylliodes chrysocephala* on leaves ...



Mass occurrence 2014 in some regions
(Kahl 2014)

... damage by feeding of larvae in untreated plants



(LALLF Mecklenburg-Vorpommern, PSD Schwerin, archive)

(Kahl archive)

Several insecticide spraying since 2014 instead of seed treatment in Germany



In average before the ban less then 0,5 times pyrethroid spraying, after neonicotinoid ban more than 1 pyrethroid applications per ha!

Environmental advantage ?

Good luck –
winter season with heavy frost failed.

Oilseed rape plants with *Delia radicum* damage were able to develop new roots during late autumn and winter time.

Favourable weather conditions during winter 2014/2015 and spring time 2015 did prevent disastrous damage.

And restrictions have made insect pest protection more time- and cost-intensive.

But good luck is a very special guy ... and lottery is a very bad way for farmers to produce a good harvest (or not) !!!

MISSING HARVEST
912,000 tons OSR



= ALMOST THE PRODUCTION
OF **ROMANIA**

UPSTREAM & DOWNSTREAM
INDUSTRY LOSSES
AROUND **360 MILLION**

REVENUE LOSSES
FOR OSR FARMERS
ALMOST **400 MILLION**



ADDITIONAL PRODUCTION COSTS FOR FARMERS
CLOSE TO **120 MILLION**

ECONOMIC LOSSES =
DIRECT CAP PAYMENTS
TO **DENMARK¹**

¹ Financial year 2014

Source: HFFA Research Paper 1/2017

- 1) Pest pressure of *Myzus persicae*, *Psylliodes chrysocephala* and *Delia radicum* is much stronger than expected and forgotten pests show up again (*Athalia rosae*).
- 2) Alternative spraying treatments are expensive, not effective against *Delia radicum* and *Myzus persicae* (resistance) and against *Psylliodes chrysocephala* decreasing (resistance). (-> negative side effects to predators)
- 3) New insecticide seed treatment products have not the same total effect level on all autumn pests compared to neonicotinoids.
- 4) Technical efforts for dust reduction in certificated seed treatment facilities go on successfully (process optimization, stickers ...).

Insecticide seed treatment absolutely needed for a sustainable winter oilseed rape production and not only in Germany ...

New options ?

- New substance Cyantraniliprole for seed treatment
- In April 2017 in Poland 10 year-authorization
- Treated rape seed is marketable in all EU member states, BUT ...



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Offener Brief: Stoppen Sie die Aussaat von mit Cyantraniliprol gebeiztem Rapssaatgut

Sehr geehrter Herr Bundeslandwirtschaftsminister Schmidt,

das Bundesamt für Verbraucherschutz und Lebensmittelsicherheit (BVL) schreibt in seiner Fachmeldung vom 12.7.2017, dass in Polen ein Pestizid mit dem Wirkstoff Cyantraniliprol zur Saatgutbeizung zugelassen wurde. Nach europäischem und deutschem Recht darf behandeltes Saatgut nach Deutschland importiert und hier ausgesät werden. Das BVL

... Open Letter written by bee keeper and environmental organisations adressed to German Agricultural Minister protesting the use of Cyantraniliprole for oilseed rape seed treatment in Germany and demanding a ban.

AND WHERE ARE THE NEW SUBSTANCES FOR SPRAYING ?

„Political“ restrictions

- **Environment:** growing importance of discussion on protection of non target insects (EFSA Bee Guidance) and birds
- **Substitution** of insecticides with other critical substances (resistance and use gaps are coming)
- **Complete loss of substances** in case of critical properties (e.g. toxicity, endocrine disruptors)
- Blowing up the importance of **residues** in foods, especially in bee products

Misuse in agriculture / industry / trade, because of

- **Return of investment** is the most important criteria and more important than long-term use of substances (resistance)
- **User comfort** (insurance thinking instead of e.g. yellow water trap scouting)
- **Lack of knowledge** and decline of nonprofit advising services

Voter majority without knowledge about benefits of plant protection!

Summary and conclusion

This can't be the future of rape seed growing in EU?!!



(LALLF Mecklenburg-Vorpommern, PSD Schwerin)

Strong damage of *Psylliodes chrysocephala* in North Eastern Germany spring time 2007 as a result of lack of plant protection ...

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