

Severe infestations of cabbage seed weevil and brassica pod midge in winter oilseed rape in Sweden.

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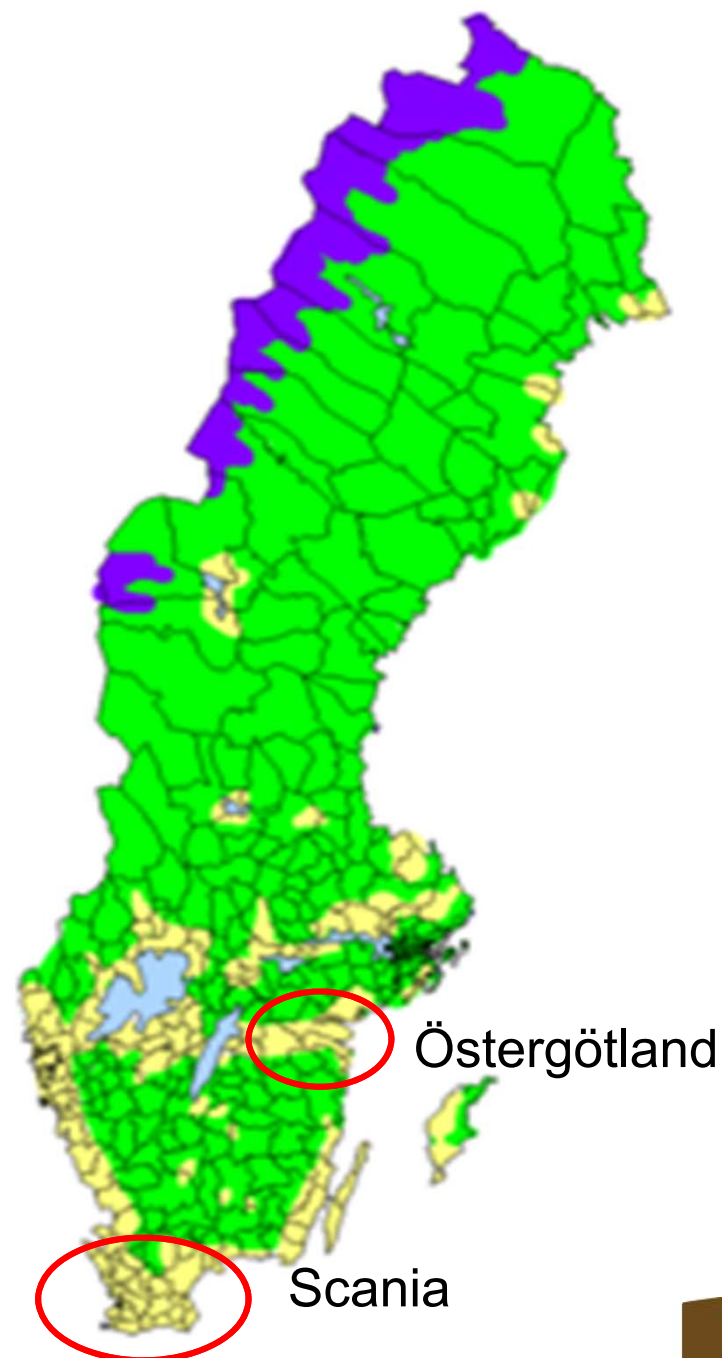


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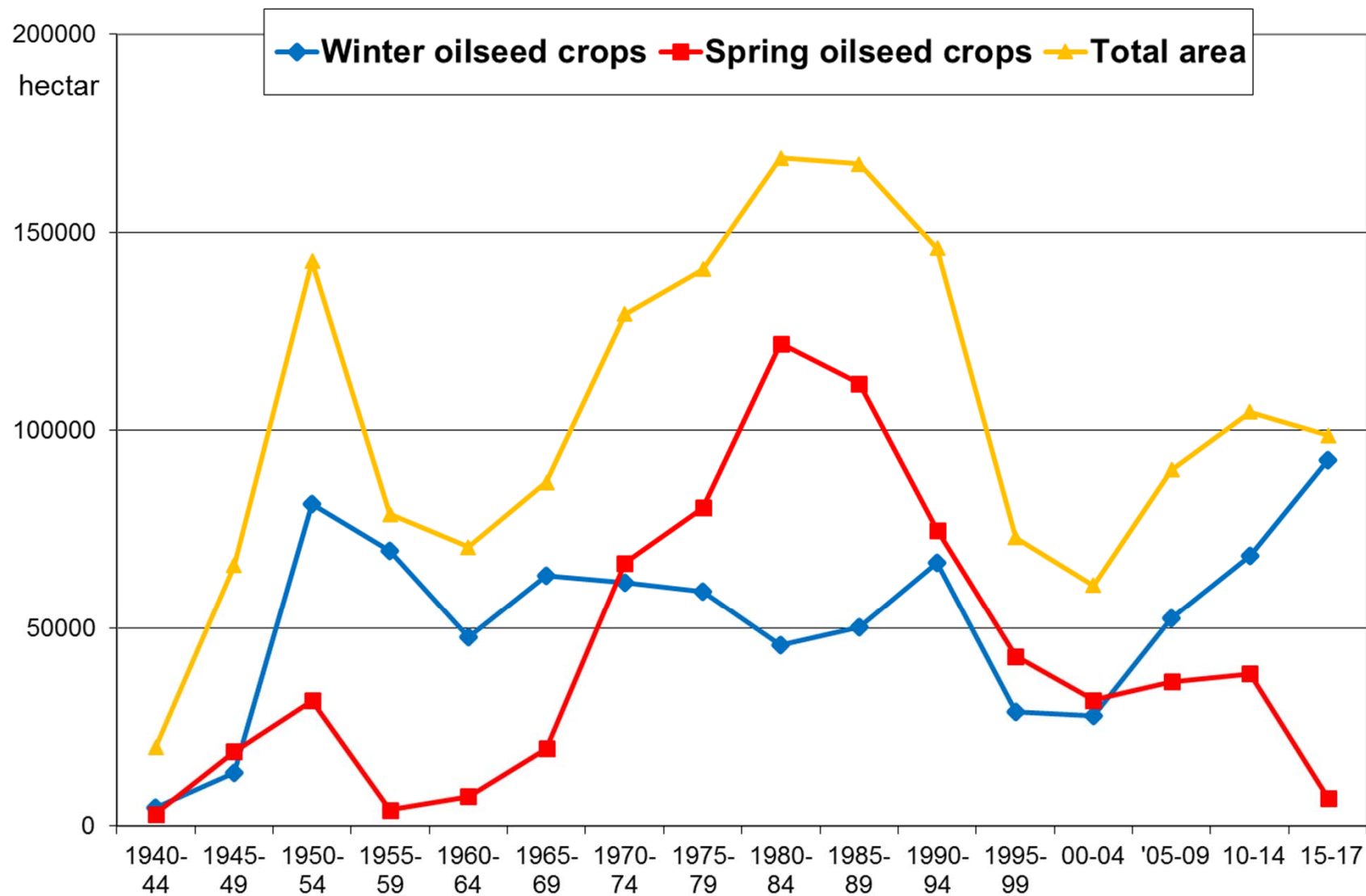


Sweden – arable land 2,6 million hectares

Crop	Hectare 2016
Winter wheat	375 000
Spring barley	310 000
Oats	180 000
Winter oilseed rape (WOSR)	105 000
Spring oilseed rape (SOSR)	7 000
Sugarbeets	30 000



Acreage of oilseed crops in Sweden 1940-2017 including white mustard and flax 1940-1984



Many insect pests in WOSR

- Cabbage stem flea beetle
- Pollen beetle



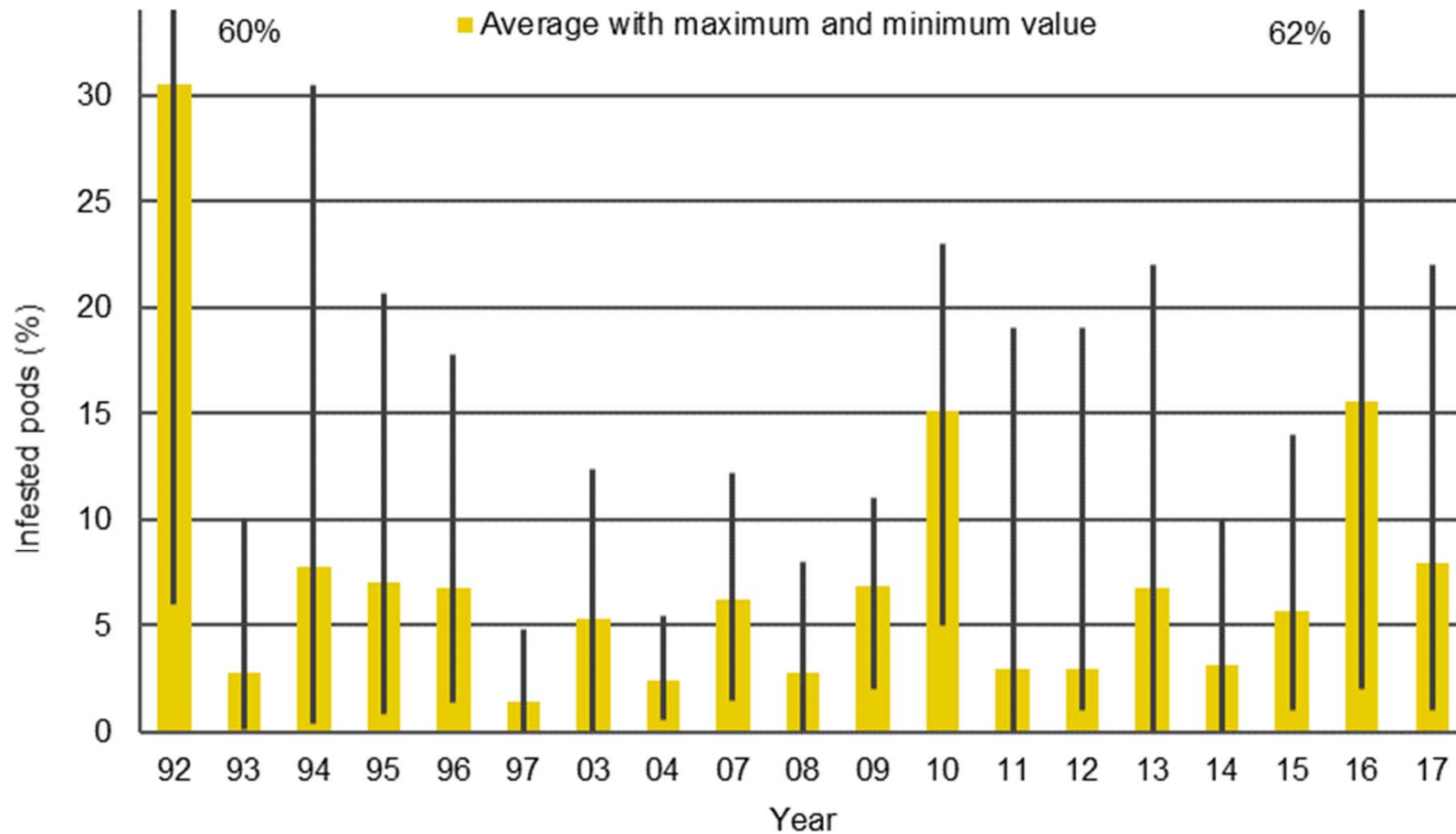
Cabbage seed weevil



Brassica pod midge

Last severe infection of cabbage seed weevil and brassica pod midge was in Scania 1970s and Östergötland 1992

Survey brassica pod midge Östergötland 1992-2017 15 fields /year



2016

Cabbage seed weevil



Brassica pod midge

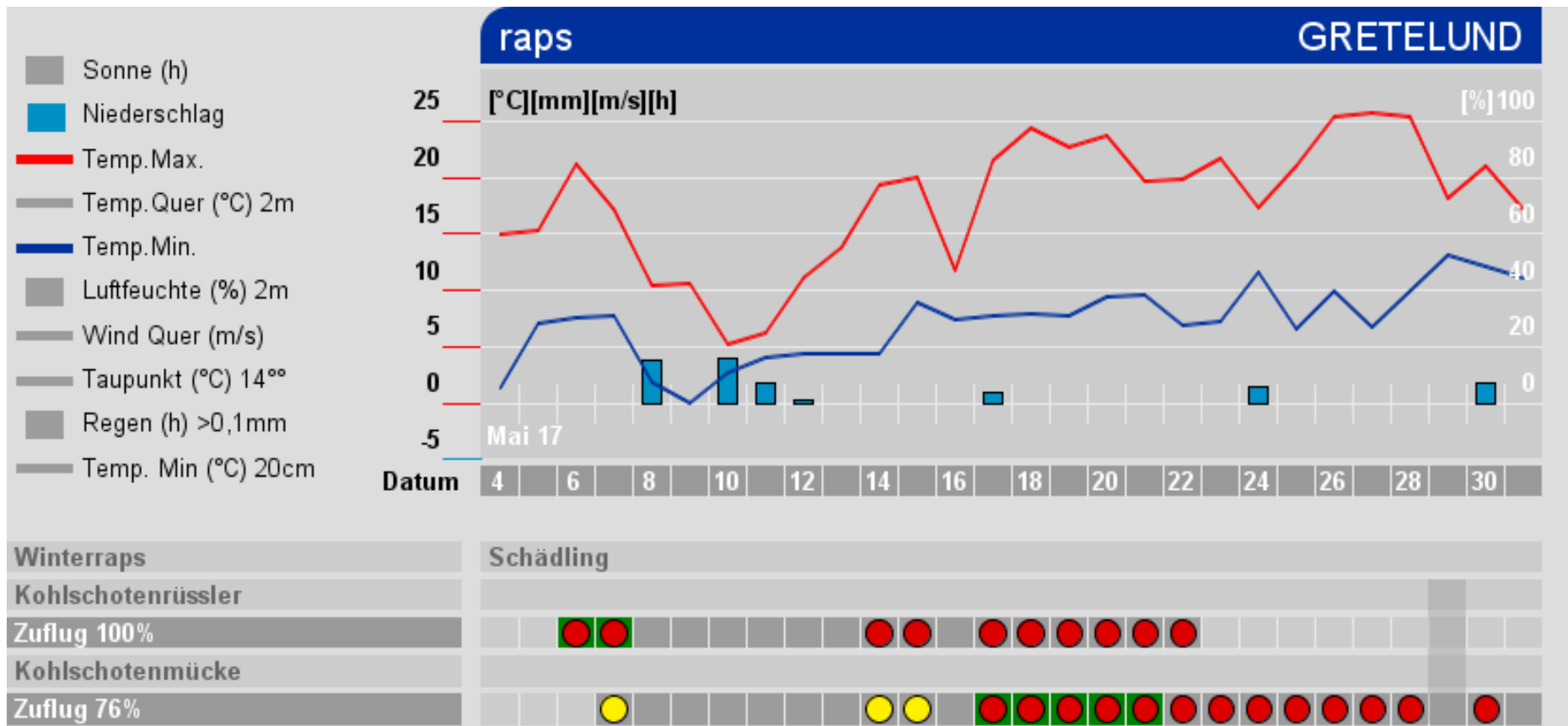


Brassica pod midge – middle of July 2016



Good condition for migration May 2017 Scania

proPlant – Bayer Digital Farming



Brassica pod midge - 29th May 2017 Scania

Foto: Anders Adholm HIR Skåne



Brassica pod midge Scania - Monitoring (% damaged pods)

	Number of fields	Fieldborder (variation)	20-30 m in the field (variation)
2015	20	23 (0-74)	8 (0-43)
2016	40	40 (5-90)	28 (1-80)
2017	27	38 (1-87)	18 (3-45)

2016 - Treated and untreated fields difficult to see difference

2017 web survey 200 farmers – 46 % satisfied with the efficacy of treatments

Threshold and treatment

Threshold cabbage stem weevil - 1-2 weevil/plant

Lowered the threshold 2016

Brassica pod midge no threshold

Application in flowering

thiachloprid, acetamiprid,

alpha-cypermethrin, tau-fluvalinate

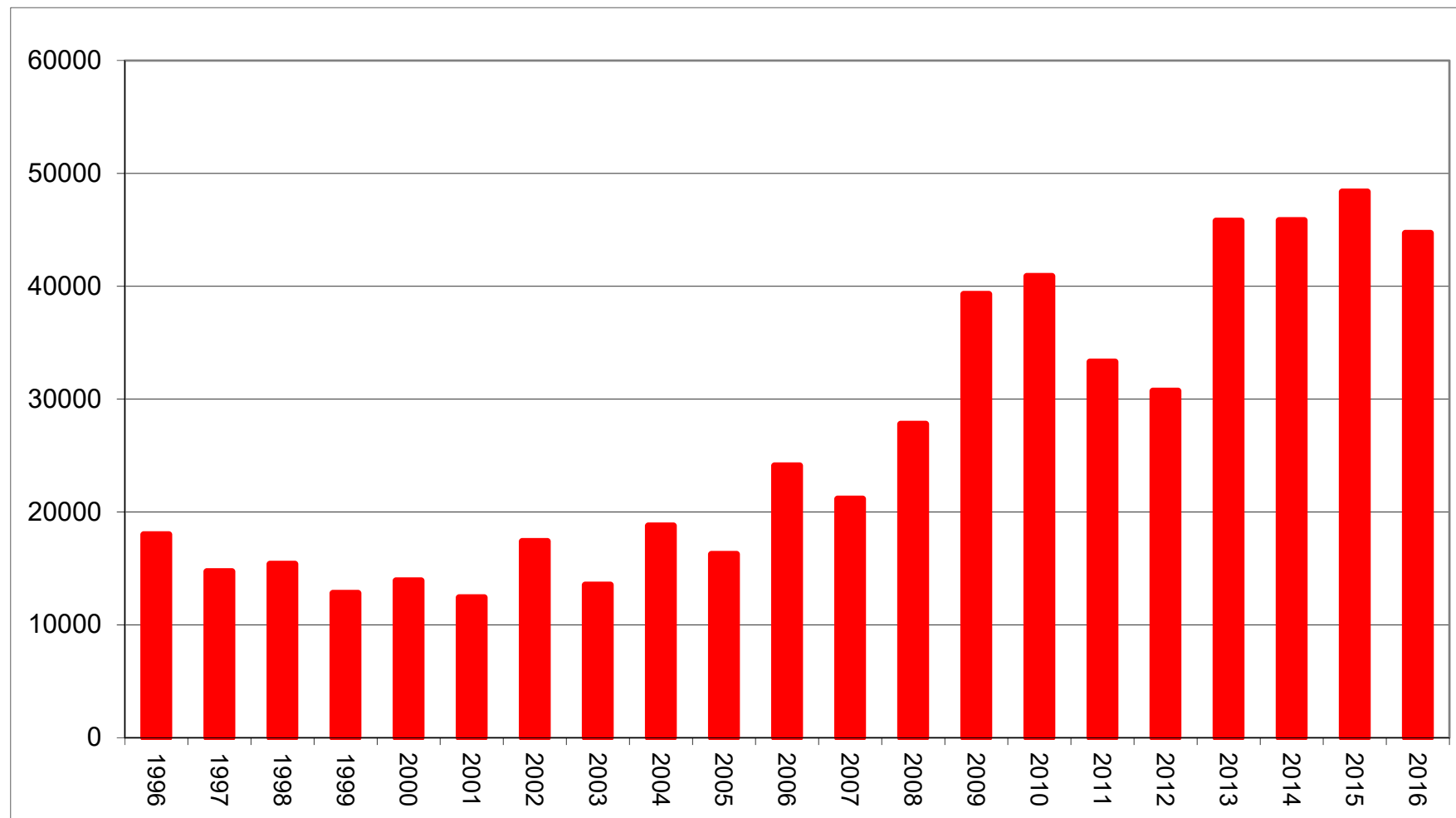
indoxacarb (before GS 57)

Few samples tested for resistance – negative (so far)

Several applications, timing difficult

Damage natural enemies, parasitoides

Area of winter oilseed rape in Scania doubled last years



Summary



- Extensive cultivation of winter oilseed rape with a substantial increase in recent years in Scania
- Short distance between last and this years' oilseed rape fields - benefits the pod midge which has poor flight ability
- The balance between the weevil /the pod midge and its' natural enemies has been shifted – the parasitoid wasps requires time to multiply
- At present treatment is required to safeguard yields and enable cultivation of oilseed rape

In the longer term

- Adapt treatment to a strictly needs basis
- Improved thresholds
- Project based on pheromone traps to catch the podge midge
- Less or decreased oilseed rape cultivation in certain areas