

Resistance monitoring of insects in Sweden 2021

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Europeiska jordbruksfonden för landsbygdsutveckling: Europa investerar i landsbygdsområden

2022-03-25



Sampling and monitoring 2021

- In total 13 sampling sites for pollen beetle, from various locations in Sweden
- Tested substances are lambda-cyhalothrin, tau-fluvalinate and acetamiprid
- The project is shared between the Swedish Board of Agriculture and ADAMA
- Four sampling sites for cabbage stem flea beetle in southern Sweden in order to test the method



Sampling sites for pollen beetle 2021







Changes in lambda-cyhalotrin (Karate) susceptibility of pollen beetles



2022-03-25

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Changes in tau-fluvalinate susceptibility of Jordbruks verket pollen beetles (Mavrik)





100%-dos





Dödlighet, %

6



- Growing winter oilseed rape and spring oilseed rape in the same area results in higher risk of resistance development.
- The same pollen beetles could be treated several times and resistant individuals can be selected





Pollen beetle damages 2018





The seasonal change in susceptibility 2018





lambda-cyhalothrin



Recommended insecticides against Pollen Beetles in Sweden 2022

2022-03-25

 Pyrethroides IRAC 3A 	Mavrik (tau-fluvalinate)	Resistance in some areas				
 Neonicotinoides IRAC 4A 	Mospilan (acetamiprid)	Works, new 2009				
 Indoxacarb* IRAC 22A 	Avaunt (indoxacarb)	Works, new 2011 / 2013				
* = No use allowed after 2022-09-20						

Jordbruks Cabbage stem flea beetle





Sensitivity in cabbage stem flea beetle to lambda-cyhalotrin 2021





- Pollen beetles still have a persisting resistance to pyrethroids in spite of low use.
- The sensivity to tau-fluvalinate (Mavrik) is comparable to the results 2015, and the variation was lower in populations 2021 compared to 2020.
- The variation in sensivity to acetamiprid is low.
- The sensitivity to pyrethroids in Cabbage stem flea beetle is good in four tested populations 2021.



Jordbruks Insekticide groups in cereals

Skadegörare	Pyrethroids Group 3	Neonicotinoids Group 4A	Indoxacarb Group 22A	Flonicamide Group 29
Frit fly				
Cereal leaf miners				
Straw fly	X			
Bird-cherry aphid	X			Х
Grain aphid	Х			Х
Saddle gall midge	X			
Cereal leaf beetle	X			
Grain thrips	X			
Wheat blossom midge	X			
Psammotettix striatus	X			





