

D2.3.2. IPM strategy for flower *Thrips* control in field strawberry production

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Flower *Thrips* control in The Netherlands

- Maximal 3 sprayings deltamethrin (Decis)
- Negative effect on natural enemies
- Retailers and consumers asks for chemical free fruits
- Biological alternative is urgent



Thrips species

World wide many harmful thrips species



- In onion, leek and cabbage only 1 species: *Thrips tabaci*
- In strawberry also other species:
 - *Thrips fuscipennis* / *T. major*
 - *Frankliniella intonsa*
 - *F. occidentalis*

Field experiments 2011, 2012 & 2013

- 3 planting dates:
April 10 to July 6
- Deltamethrin
- Predatory mites or
Orius majusculus
bugs released
- Mulching with
white plastic film
- Lure & retain:
catch plant
Alyssum and
attractant



Effect mulching on # *thrips* larvae in 20 flowers

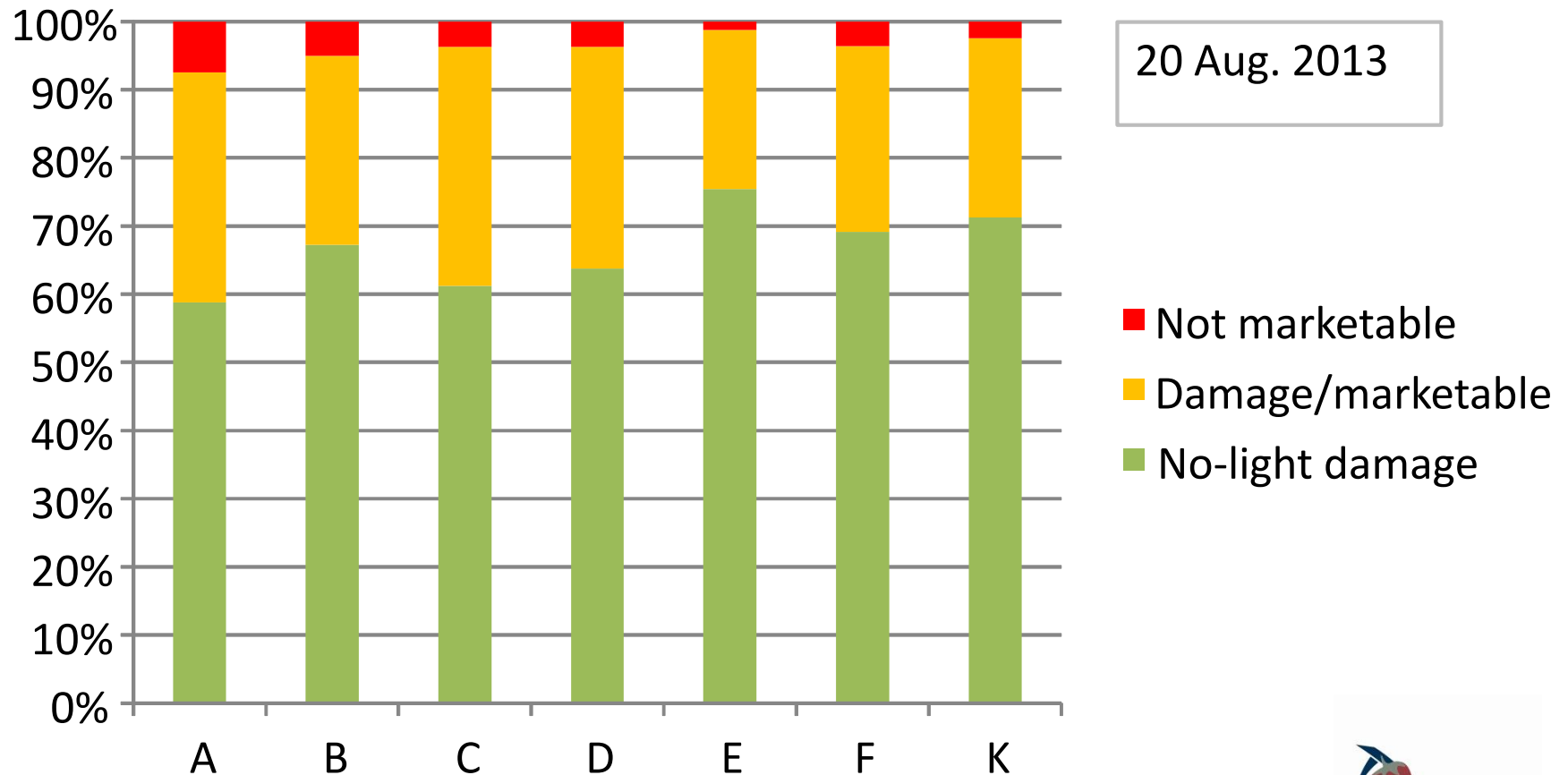
Date	Planting	Mulch	<i>Orius</i>	Mulch+ <i>Orius</i>	Control
2013					
June 10	1	23	*	10	6
June 17	1	27	9	43	60
July 01	2	125	187	68	568
July 08	2	321	357	113	478
July 29	3	108	86	63	74
August 05	3	25	13	29	14
2012					
July 12	1	5			16
July 31	2	35			107
August 06	3	120			206



Thrips injury in white fruit stage 2013

A = Control B = Decis C = *A. montdorensis* D = *O. majusculus*

E = Mulch F = Mulch + *O. majusculus* K = *B. bassiana*



Discussion & conclusions

- Fully biological control later in season
- Predatory bugs *Orius spp.* most important
- White plastic mulch reduces # thrips larvae
- Biodiversity near and in strawberry production fields
- Lure and retain strategies
- Evaluation Entomopathogenic Fungi (*Beauveria*, *Metarhizium* etc.)



Thanks for your attention

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