



FONDAZIONE
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IOBC-WPRS

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Valuing the economic impact of *D. suzukii* on soft fruit industry in Trentino (Italy)

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Valuing

²value *verb*

: to make a judgment about the amount of money that something is worth

: to think that (someone or something) is important or useful

Merriam-Webster Online

Methodological approach

Field of application:

Impact assessment on four host crops

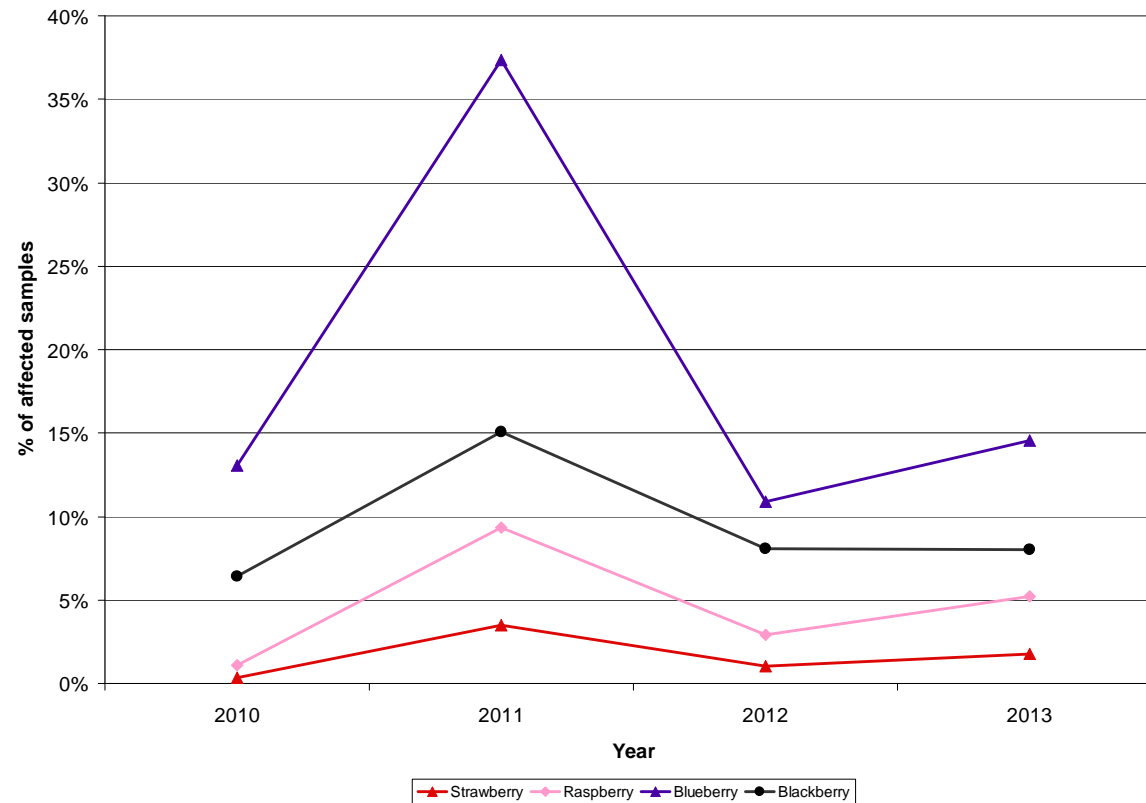
Range of impacts:

Direct impacts

Data used:

Business data

... the economic impact of *D. suzukii* ...



... on soft fruit industry in Trentino

Crop	Avg yearly output 2007-2009		
	Quantity (tons)	Price (€/kg)	Value (€)
Strawberry	4,167	3.37	14,031,435
Raspberry	669	7.91	5,288,781
Blackberry	553	4.38	2,403,823
Blueberry	689	4.99	3,437,482
TOTAL			25,715,313

Source: Statistical Service of the
Autonomous Province of Trento

Ex ante reference

Crop	Avg yearly output		
	Quantity (tons)	Price* (€/kg)	Value (€)
Strawberry	4,167	2.87	11,938,661
Raspberry	669	7.08	4,735,710
Blackberry	553	4.47	2,472,287
Blueberry	689	4.99	3,437,482
TOTAL			22,584,140

* Average price at farm gate in the period 2010-2013

Source: Statistical Service of the
Autonomous Province of Trento

Revenue losses without a management strategy

Crop	Avg yearly output			Yearly revenue losses (€)
	Quantity (tons)	Price (€/kg)	Value (€)	
Strawberry	4,167	2.87	11,938,661	426,784
Raspberry	669	7.08	4,735,710	544,408
Blackberry	553	4.47	2,472,287	461,179
Blueberry	689	4.99	3,437,482	1,430,285
TOTAL			22,584,140	2,954,254

Source: our elab.

The management strategy

Treatments

Mass trapping

Field sanitation

Revenue losses with the pest management strategy

Crop	Avg yearly output			Revenue losses 2012	Revenue losses 2013	Revenue losses (2012-13)
	Quantity (tons)	Price (€/kg)	Value (€)			
Strawberry	4,167	2.87	11,938,661	139,315	203,685	171,500
Raspberry	669	7.08	4,735,710	135,962	170,830	153,396
Blackberry	553	4.47	2,472,287	246,452	244,052	245,252
Blueberry	689	4.99	3,437,482	417,778	556,951	487,364
TOTAL			22,584,140	1,031,104	1,267,116	1,149,110

Source: our elab.

Treatments' costs

Crop	Treatment	Application rate		Cost x ha (€)	Area (Ha)	Treatment cost (€)
		(cl/hl)	hl/ha			
Strawberry	Deltamethrin	50	15	35.3	128	4,518
	lambda-Cyhalothrin	25	15	60.0		7,680
Raspberry	Deltamethrin	50	15	70.6	93	9,849
	Spinosad	25	15	180.0		16,740
Blackberry	Deltamethrin	50	15	105.9	33	3,495
	Spinosad	25	15	180.0		5,940
Blueberry	Phosmet	250	15	223.5	70	10,430
TOTAL						58,652

Source: our elab.

Application costs

Crop	Treatment	Heavy mechanisation			Light mechanisation			No mechanisation			Application Costs (€)
		Time (hrs)	Cost (€/h)	Area (ha)	Time (hrs)	Cost (€/h)	Area (ha)	Time (hrs)	Cost (€/h)	Area (ha)	
Strawberry	Deltamethrin	2	35,26	108,8	7,5	24,84	6,4	9	12,29	12,8	10.281
	lambda-Cyahlothrin	2	35,26	108,8	7,5	24,84	6,4	9	12,29	12,8	10.281
Raspberry	Deltamethrin	2	35,26	79,0	7,5	24,84	4,7	9	12,29	9,3	14.951
	Spinosad	2	35,26	79,0	7,5	24,84	4,7	9	12,29	9,3	7.475
Blackberry	Deltamethrin	2	35,26	28,0	7,5	24,84	1,7	9	12,29	3,3	16.867
	Spinosad	2	35,26	28,0	7,5	24,84	1,7	9	12,29	3,3	5.622
Blueberry	Phosmet	2	35,26	59,5	7,5	24,84	3,5	9	12,29	7,0	5.313
TOTAL											70.789

Source: our elab.

Mass trapping costs

Crop	Traps (nr/ha)	Food bait cost (€/trap)	Food bait changes (nr)	Food bait cost (€/ha)	Worktime (min/ha)	Work cost (€/ha)	Total cost (€/ha)	Area (ha)	Total cost (€)
Strawberry (Junebear)	250	0.2	5	250	1875	234.38	484.38	64	31,000
Strawberry (Everbear)	250	0.2	12	600	4500	562.50	1162.50	64	74,400
Raspberry	250	0.2	7	350	2625	328.13	678.13	93	63,066
Blackberry	250	0.2	7	350	2625	328,13	678.13	33	22,378
Blueberry	250	0.2	5	250	1875	234.38	484.38	70	33,906
TOTAL									224,730

Source: our elab.

Field sanitation costs

Crop	Worktime (h/d)	Days (nr)	Work cost (€/h)	Area (ha)	Field sanitation and clean-up costs (€)
Strawberry (Junebear)	1	75	7.5	64	36,000
Strawberry (Everbear)	1	45	7.5	64	21,600
Raspberry	1	75	7.5	93	52,313
Blackberry	1	75	7.5	33	18,563
Blueberry	1	45	7.5	70	23,625
TOTAL					152,100

Source: our elab.

Comparison

Scenario	Economic impact (€)
Without management strategy	2,954,254
With a management strategy	1,655,381
Revenue losses	1,149,110
Treatment costs	58,652
Application costs	70,789
Mass trapping	224,730
Field clean-up	152,100

Source: our elab.

Cost of exclusion nets on blueberry

Scenario	Investment (€/ha)	Duration (yrs)	Depret. (€)	Install./ Deinst. (h/ha)	Work Cost (€/ha)	Costs (€/ha)	Area (ha)	Impact (€)
Exclusion net	6,500	5	1.300	100	1,000	2,300	70	161,000
Without management strategy								1,430,285
With a management strategy								560,638

Source: our elab.

Thank you!

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