

Phenology and life table parameters of the brown marmorated stink bug in Northern Italy



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HIGH QUALITY AGRICULTURAL PRODUCTIONS

Pere dell'
emilia-romagna
I&P



*Pesca e
Nettarina di*
romagna
I&P



Emilia Romagna provides 25% of the Italian fruits production and exports fruits for 446 MEuro

PEARS:

65% of Italian pear production and 40% of European production.

87% of pears export directed to Germany, France, Austria and UK.

PEACHES AND NECTARINES:

Emilia Romagna is also the centre of European production of peaches and nectarines with 350.000 tons produced every year.

HISTORICAL REVIEW

2012

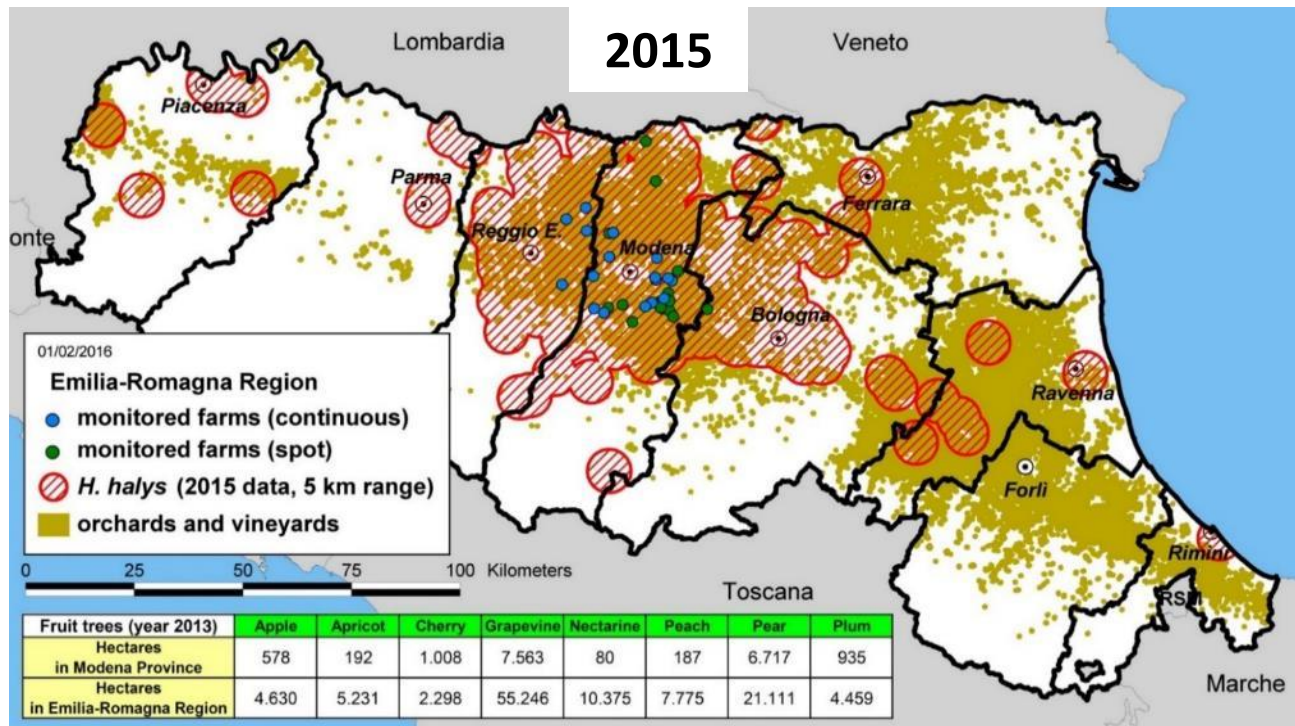
First detection (in Modena province)

2013

Were reported some damages in fruit orchards especially in pear around Modena province

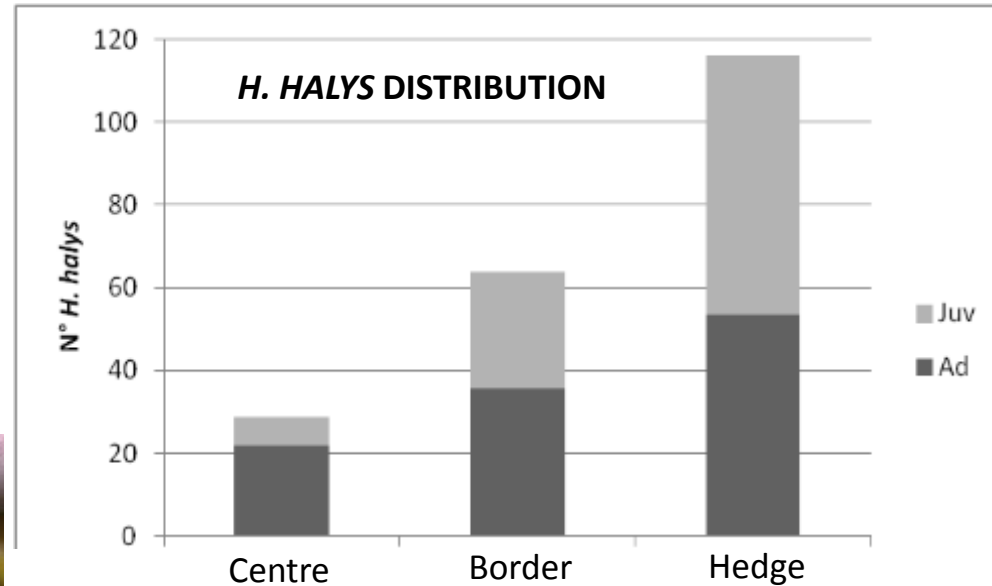
2014

In collaboration with the Plant Protection Services of Emilia Romagna region periodical field monitoring sessions in different pear orchards of Modena and Reggio Emilia provinces were performed. A damage of up to 40% deformed pears was reported.



SITUATION IN 2015

- ✓ **MONITORING WITH VISUAL OBSERVATIONS** in the orchard's border and centre and on the hedge of the monitored farms.



- ✓ **FRUIT DAMAGE EVALUATION** in pre-harvest for each farm

59.6% IN ORCHARD BORDER
26.4% IN ORCHARD CENTRE

MAISTRELLO L., VACCARI G., BORTOLINI S., COSTI E., GUIDETTI R., BORTOLOTTI P., CARUSO S., NANNINI R., MONTERMINI A., CASOLI L. Monitoraggio in campo e danni della cimice aliena *Halyomorpha halys* in Emilia Romagna: da minaccia a problema concreto. Giornate Fitopatologiche. Chianciano Terme (SI). In: A. Brunelli, M. Collina (Coord.), Atti delle Giornate Fitopatologiche 2016 (Extended Abstracts). BOLOGNA: CLUEB srl (ITALY). Atti delle Giornate Fitopatologiche 2016, Vol 1, pp. 171-178.

OVERWINTERING MORTALITY



OCTOBER- DECEMBER 2014

- n=1367 bugs were collected
(712 MM; 655 FF)
- All the bugs were placed in 4 wooden cages exposed outside to natural conditions
 - T and RH were recorded

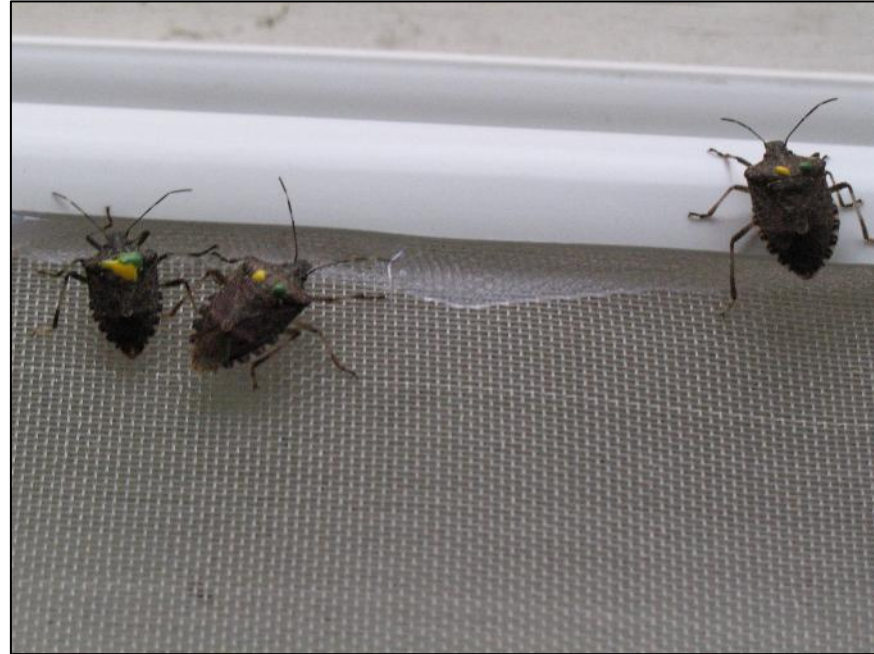


OVERWINTERING MORTALITY

FROM JANUARY 2015

EVERY 48h

- ✓ N° bugs outside the overwintering boxes
- ✓ N° of bugs died before the first egg laying



18 JUNE 2015

- ✓ Opening of overwintering boxes and recording of males and females dead inside



LIFE CYCLE STUDY



20 overwintered bugs were sexed and grouped in ten couples



Daily records:

- N° egg- masses
- N° of eggs hatched
- N° of N1 nymphs
- N° of N2 nymphs
- mortality

Starting from the II instars, 10 individuals randomly chosen were followed from the first four egg masses layed down each week

Daily records:

- n° of N3, N4 e N5
- n° of adults
- n° of males and females
- mortality

**Natural conditions;
food ad libitum
T and RH recorded**



For the second generation new couples were formed and followed in the same way

CONCLUSION

- High reproductive potential and survivorship
 - Elaboration of forecasting models
- Elaboration and application of targeted management strategies

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