



The Food and Environment  
Research Agency

# Population development of *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae) in UK glasshouses

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## Origin and measures

- The pest is being introduced on imported tomato fruits from infested areas, e.g. Spain and the Canary Islands, Italy and Morocco.
- Statutory control measures were put in place at infested sites
  - all sites issued with best practice guide on preventing the spread of *T. absoluta* from packing stations.



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Teléfono: 958 800197 - 958 800006  
Teléfono: 958 800010  
MOTRILL (Granada - España)  
N.I.F. F119024686 - B.O.S. 21-02547GR  
producción en España

**TOMATE CHERRY**  
8 x 250 Grm/2.500 Kgs. NETO  
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CAT. 1500  
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Tomate Cherry - Tomatoes  
Cherry Tomatoes - Ch...

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**FRIDGE PACK**  
Diet Coke  
Grab some of the hottest  
Diet Coke  
OPEN HERE

# Spread of the pest on packing material

Suspected means of spread to growing sites:

- Via infested packing material
  - Infested packing material (empty crates) from packing site held on growing site near to tomato crop
- Flown from packing site to growing site
  - Growing sites located near to packing sites

# Outbreaks more serious in 2011

- Very high pest levels seen at one nursery in the **Vale of Evesham**
- Explosion of *Tuta* in May '11 due to early season hot dry conditions
- Indications of indoxacarb resistance demonstrated
- Spinosad most effective insecticide but restricted to 3 applications per season.



## UK Policy position

- Statutory action taken under Article 16 (2) of the PH Directive 2000/29/EC against findings at import and at growers' premises, aiming at eradication.
- For findings at import: sorting at a 1% level allowed, to minimise the risk of spread on tomato fruit being moved.
- Notice served for the return of boxes with  $> 1\%$  level of infestation to the supplier
- Policy to be reviewed again in 2012.

## Insecticide use in UK

- Estimated area of tomato crops treated:  
c. 12-13%
- 8% of tomatoes received no pesticide treatments (organic) or BCAs at all.
- Key pests: *Tetranychus urticae*, *Trialeurodes vaporariorum*, *Liriomyza bryoniae*
- Main insecticides: [spiromesifen]; spinosad; indoxacarb; [maltodextrin]; *B. thuringiensis*



## *T. absoluta* control in the UK

Three insecticides approved for use on protected tomato, pepper and aubergine which are effective against *T. absoluta*

- *Bacillus thuringiensis* var. *kurstaki* (Dipel DF): applied every 7 – 10 days (4 applications)
- spinosad (Conserve): apply two consecutive sprays, followed by a min. 28-day gap, before 3<sup>rd</sup> application.
- indoxacarb (Steward) usually held until infestation levels are high, but reports of resistance.

# New approvals for Plant Health Use\*

- **Spinosad:** Extension of use of a 4<sup>th</sup> application of 'Conserve' (spinosad) on protected tomatoes for the control of *Tuta absoluta* (Granted for one season)
- **Chlorantraniliprole:** application for emergency approval for Coragon on tomatoes (Pending).

\*This authorisation is only for use with a Plant Health Order

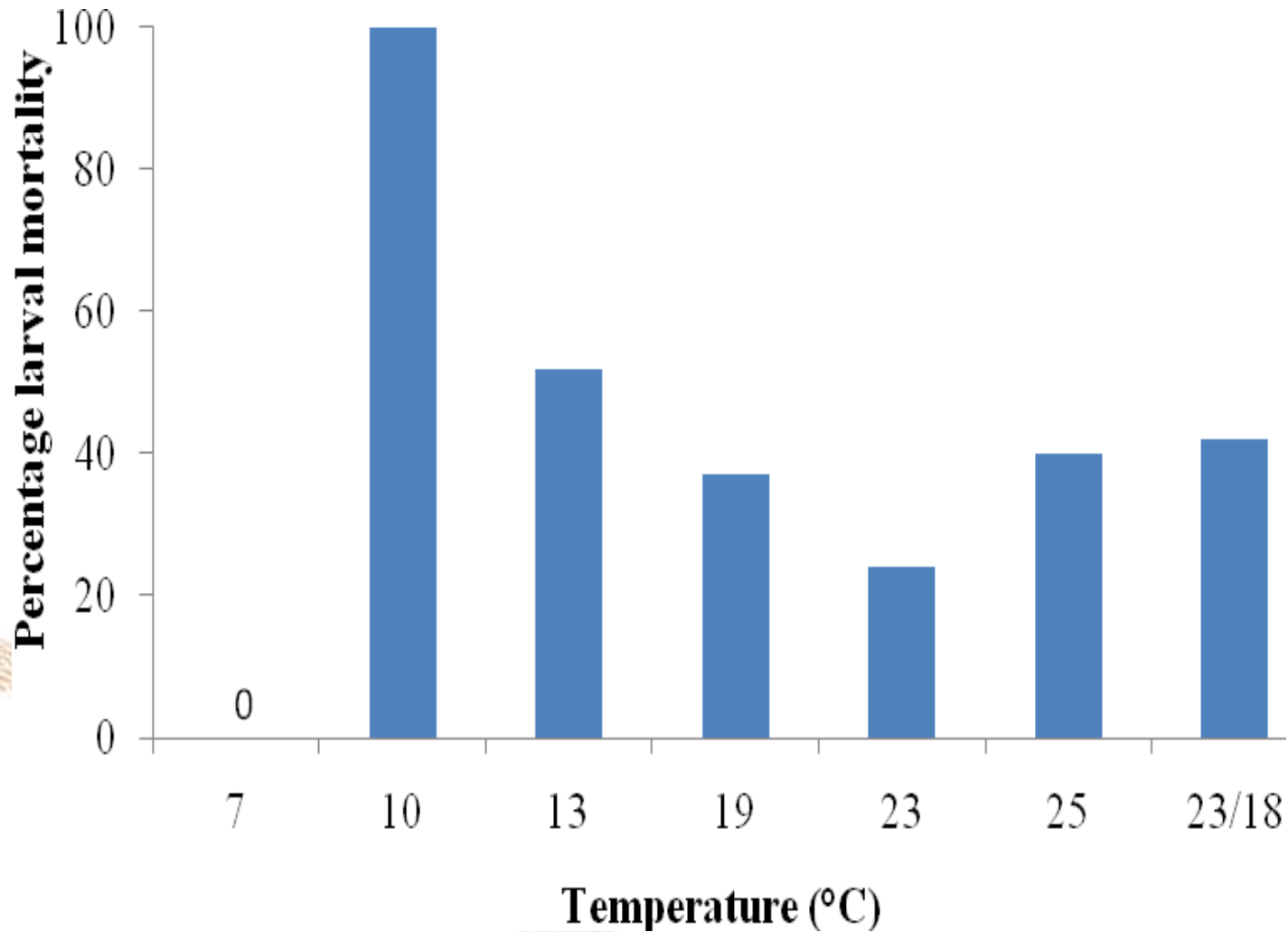
# Research work at Fera studied:-

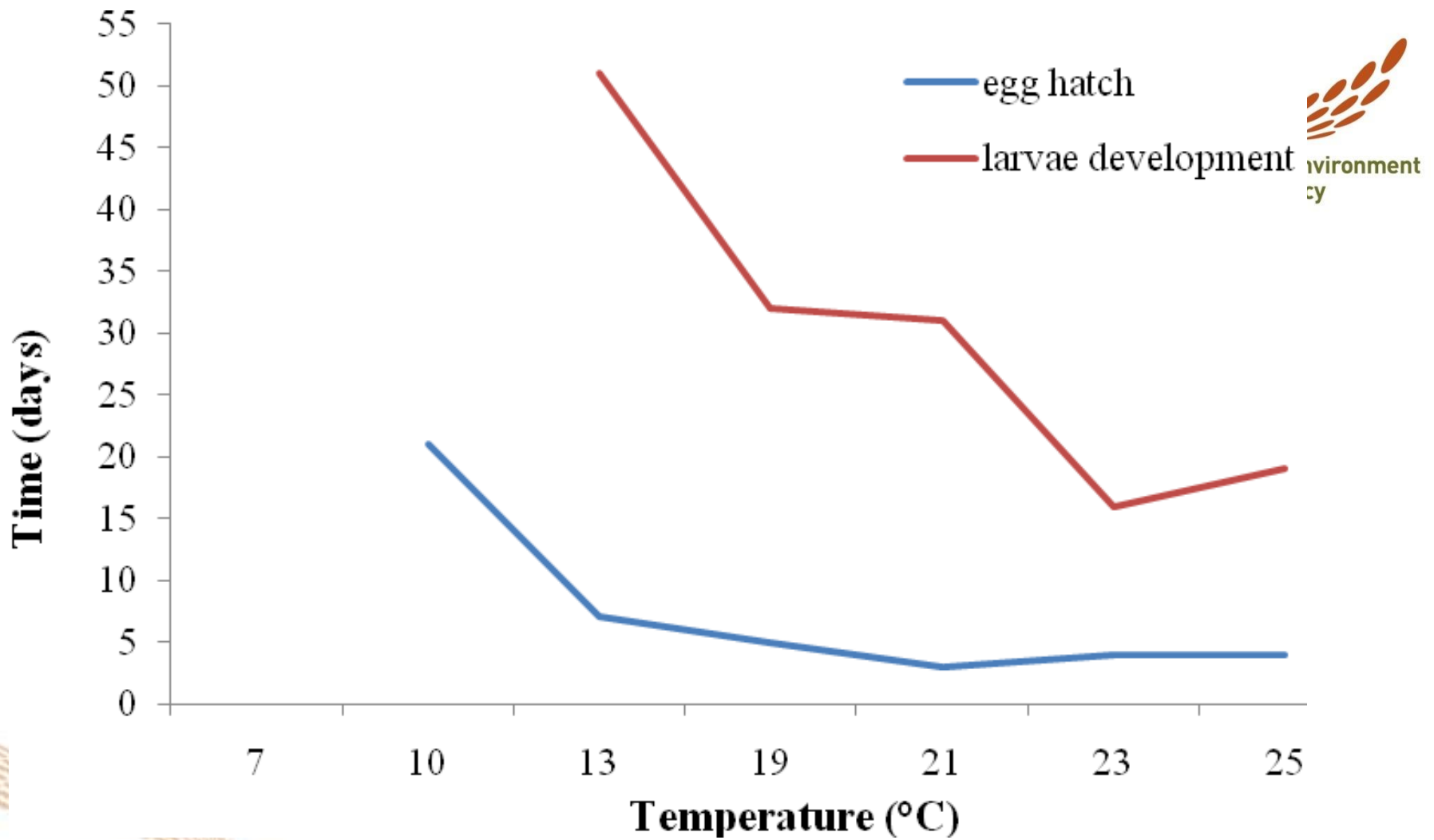
- Population development under various temperatures
  - Egg hatching
  - Adult emergence
  - Larval mortality
  - Adult moth longevity

# Population development

- *T. absoluta* developed best at temperatures
- between 19 and 23°C
- Development from egg to adult took
  - 58 days at 13° C;
  - 37 days at 19° C
  - 23 days at 25° C.
- Development slows above 25 ° C, so the pest may be well adapted to UK glasshouses!

# Percentage larval mortality at various temperatures.

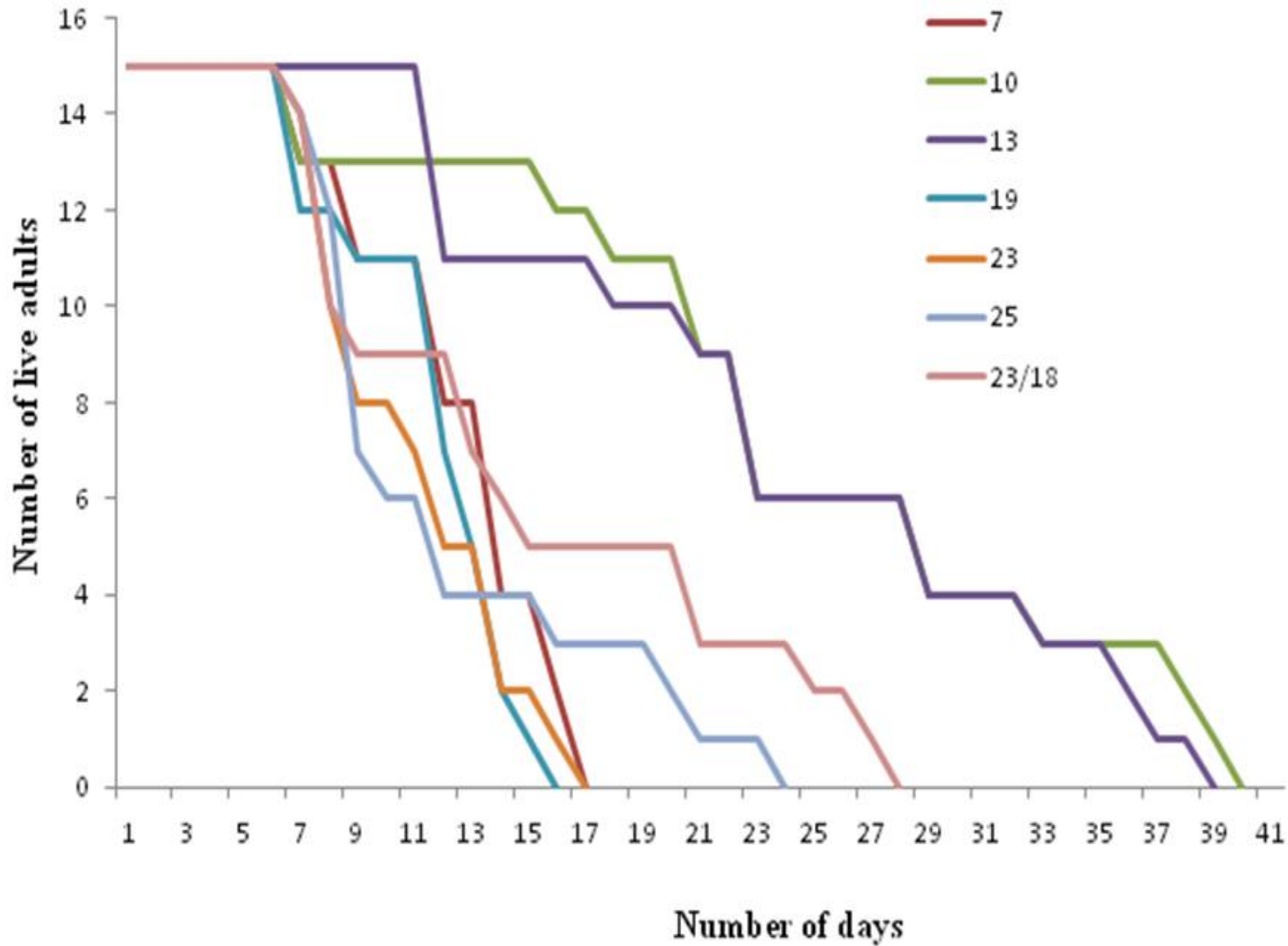




**Time-span for *Tuta absoluta* egg and larvae development at various temperatures**



ment



**Adult *Tuta absoluta* longevity at various temps (° C).**