

# Monitoring *Leptinotarsa decemlineata* population

## SIMLEP3 Validation

**PLANT PROTECTION SERVICE EMILIA-ROMAGNA REGION**

# FOECASTING MODEL SIMLEP3

- INFORMATION AT FARM LEVEL
- PHENOLOGICAL MODEL BUILT-UP IN DDR IN 1985
- SEVERAL MODIFICATIONS OVER THE YEARS
- Used in 4 german regions after several years field validation (cost saving 15-40 DM /ha)

# SIMLEP3

## MODEL INFORMATION

- PERIOD OF MAXIMUM PRESENCE OF EGGS
- Date of first L1-L2 larvae occurrence
- Date of first L3-L4 larvae occurrence

## USE

- Optimal time for ovicidal spray
- Time to start to spray

# I.P.M. guidelines 2004

## POTATO

Reg.CE 1257/99 Reg.CE 2078/92	Reg.CE 2200/96 L.R.28/98; L.R.28/99	timing
Bacillus thuring.	Bacillus thuringensis	Young larvae
Lufenuron	Lufenuron	First egg occurrence
Teflubenzuron	Teflubenzuron	L1-L2 ; 3 days ovicidal efficacy
Esaflumuron	Esaflumuron	Egg-hatching
Imidacloprid(max. 1)*	Imidacloprid (max. 1)*	larvae
Thiametoxan(max. 1)*	Thiametoxan (max 1)*	larvae
	Ciflutrin (max. 2)*	larvae-adults
	Deltametrina (max. 2)*	larve-adults
	Lambdacialotrina (max. 2)*	larve-adults
	Zetacipermetrina (max. 2)*	larve-adults

\* indipendentemente dall'avversità

# SIMLEP3

## INPUT DATA

- Bi-hourly temperature (SIMLEP3 in PASO)
- date and number of first observed eggs in the field over a 40 plant sample
- date of the field survey preceding the first egg occurrence



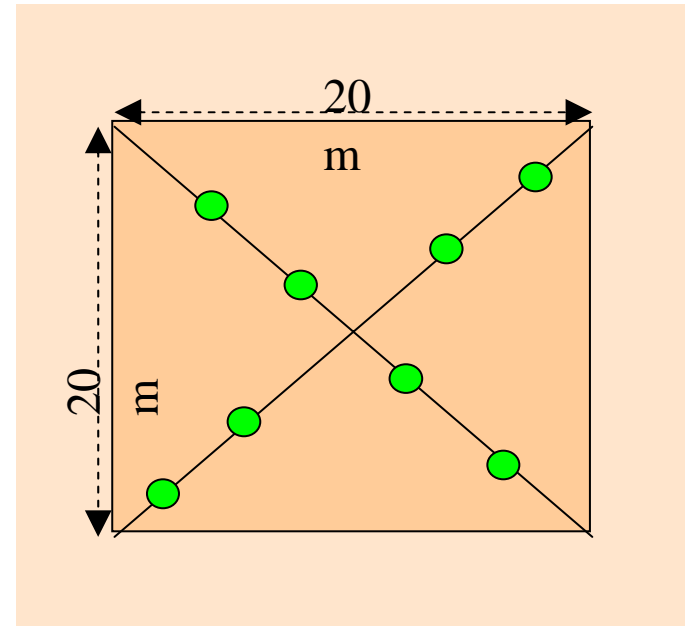
# FARMS MONITORED FOR FIRST EGG OCCURRENCE (2002-2003)

LOCALITY	DATE FO FIRST EGG OCCURRENCE	
	2003	2002
Castenaso	-	30-apr
Granarolo	5-may	03-may
Ozzano	6-may	30-apr
Cento di Budrio	2-may	29-apr
Cento di Budrio	-	NO until 10 may
Poggio C.S.Pietro	6-may	29-apr
Poggio C.S.Pietro	2-may	29-apr
Castel S.Pietro	-	NO until 6 may
Villa Fontana	-	29-apr
Castelguelfo	6-may	29-apr

# METHODOLOGY OF THE SURVEYS FOR VALIDATION

**2001**

**CASTEL GUELFO (cv.Primura)**  
**POGGIO DI CASTEL S.P. (c.v Primura)**  
**PRUNARO (cv. Primura)**  
**MEZZOLARA (cv.Agata)**



**2002**

**CASTEL GUELFO (cv.Primura)**  
**POGGIO DI CASTEL S.P. (c.v Primura)**

**2003**

**CASTEL GUELFO (cv.Agata)**  
**POGGIO DI CASTEL S.P. (c.v Almera)**



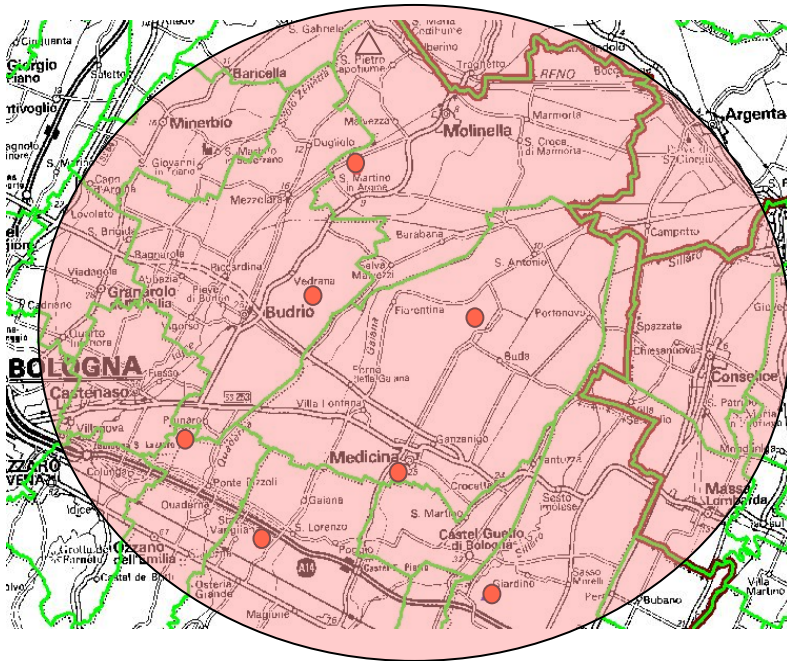




# POSSIBLE TERRITORIAL MODEL MANAGEMENT

monitoring data


Meteorological data



**SIMLEP3**  
simulation

# CONCLUSIONS

 **The model correctly simulates the first L1-L2 e L3-L4 larvae occurrence**

 **The model failed to describe the period of maximum egg presence and the model shift is not always in the same direction (2 advances e 1 delay)**

 **The prediction of L1-L2 and L3-L4 occurrence are relevant point for pest control strategy with ovo-larvicide**