

Practical use of Forecasting models

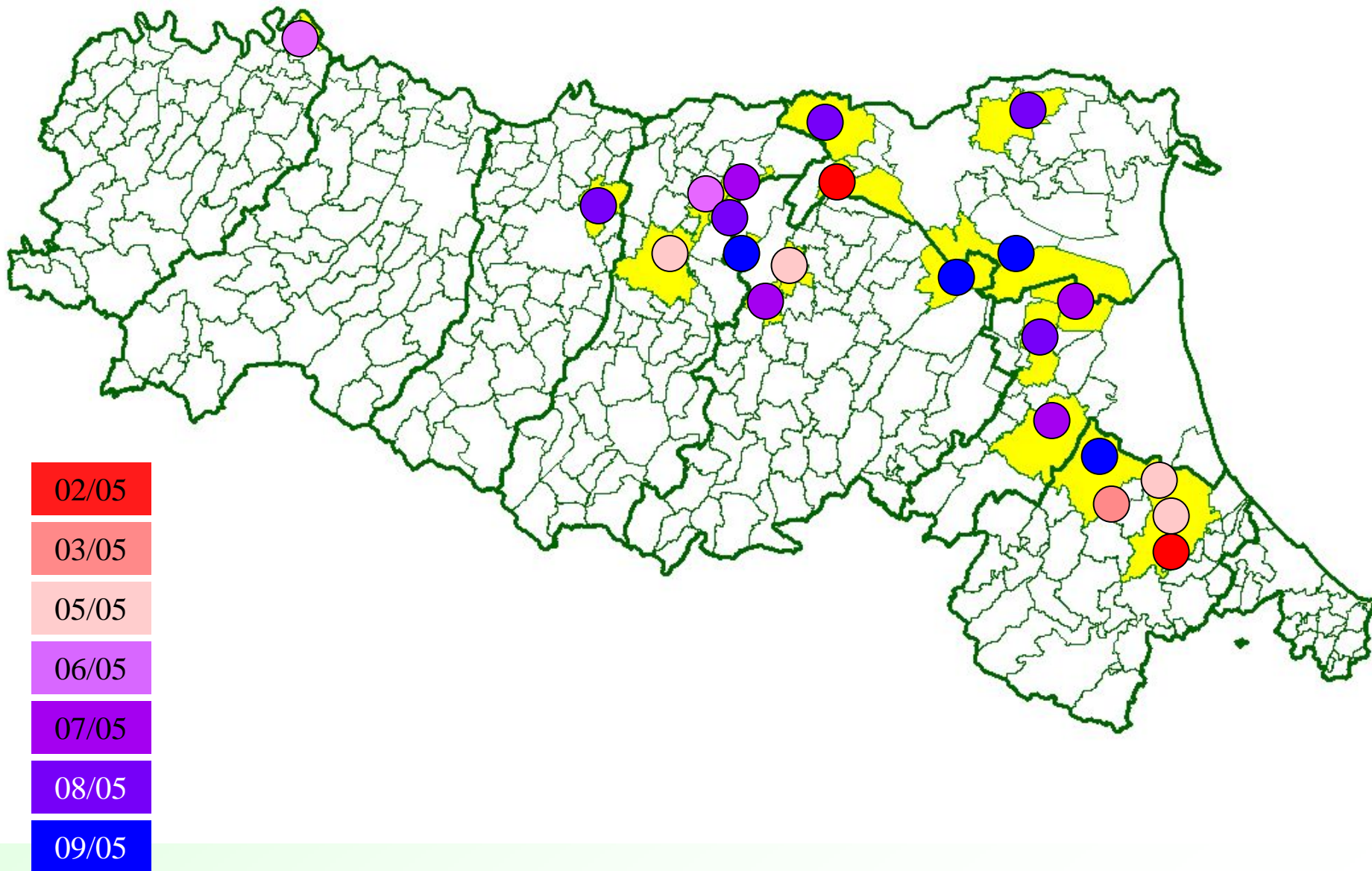
- EVALUATION OF SEASONAL CLIMATICAL DIFFERENCES (SEASONAL ADVANCE AND DELAY)
- TRAP POSITIONING
- POSITIONING OF PHEROMONE DISPENSER FOR MATING DISRUPTION
- TIMING FOR BIOLOGICAL SURVEYS
- INSECTICIDAL SPRAY TIMING
- EXPERIMENTAL TRIAL'S SET UP AND PERFORMANCE

Forecasting model usage

**EVALUATION OF SEASONAL AND
TERRITORIAL CLIMATIC ADVANCE AND
DELAY**

CLIMATIC DIFFERENCES ON THE TERRITORY

10% egg-laying of *Cydia pomonella* in Emilia-Romagna in 2002



Forecasting model usage

PROGRAMMES FOR PHEROMONE TRAPS PLACING

TRAPS FOR MONITORING

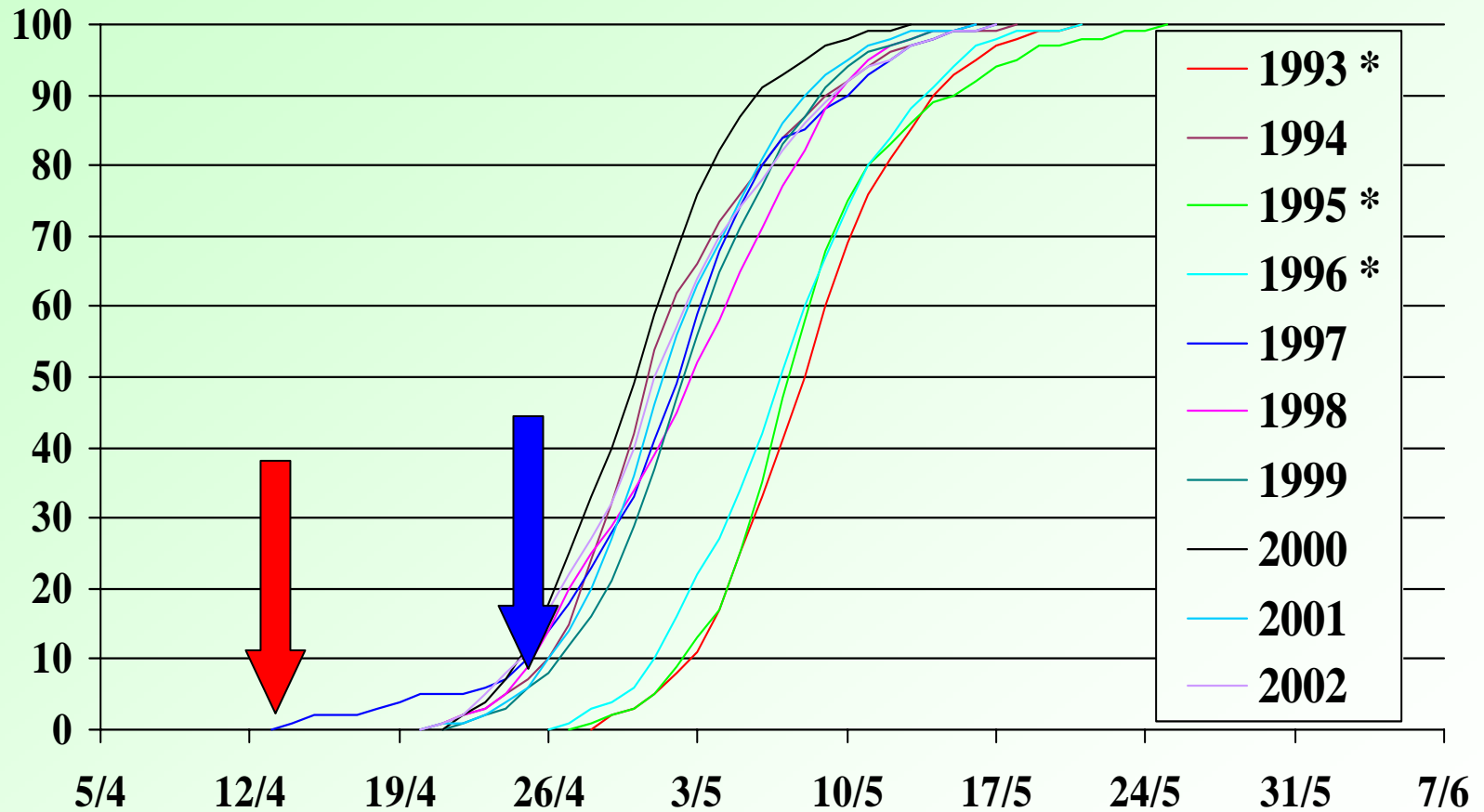
- reliable data even the earliest years
- useless monitoring during seasonal delay are avoided

PHEROMONE DISPENSER FOR MATING DISRUPTION

- A timed dispenser placing is essential for the success of pest control

Trap placing

Cydia pomonella –adult pattern 1993-2002
Met-station in S. Agostino (Ferrara)



MODEL USAGE

DETERMINE THE OPTIMAL TIME FOR CHEMICAL SPRAY

- presence of the insect phenological phase needed for spray
- kind of insecticide
- pest population pressure in the orchard
- Insect development in relation to seasonal evolution

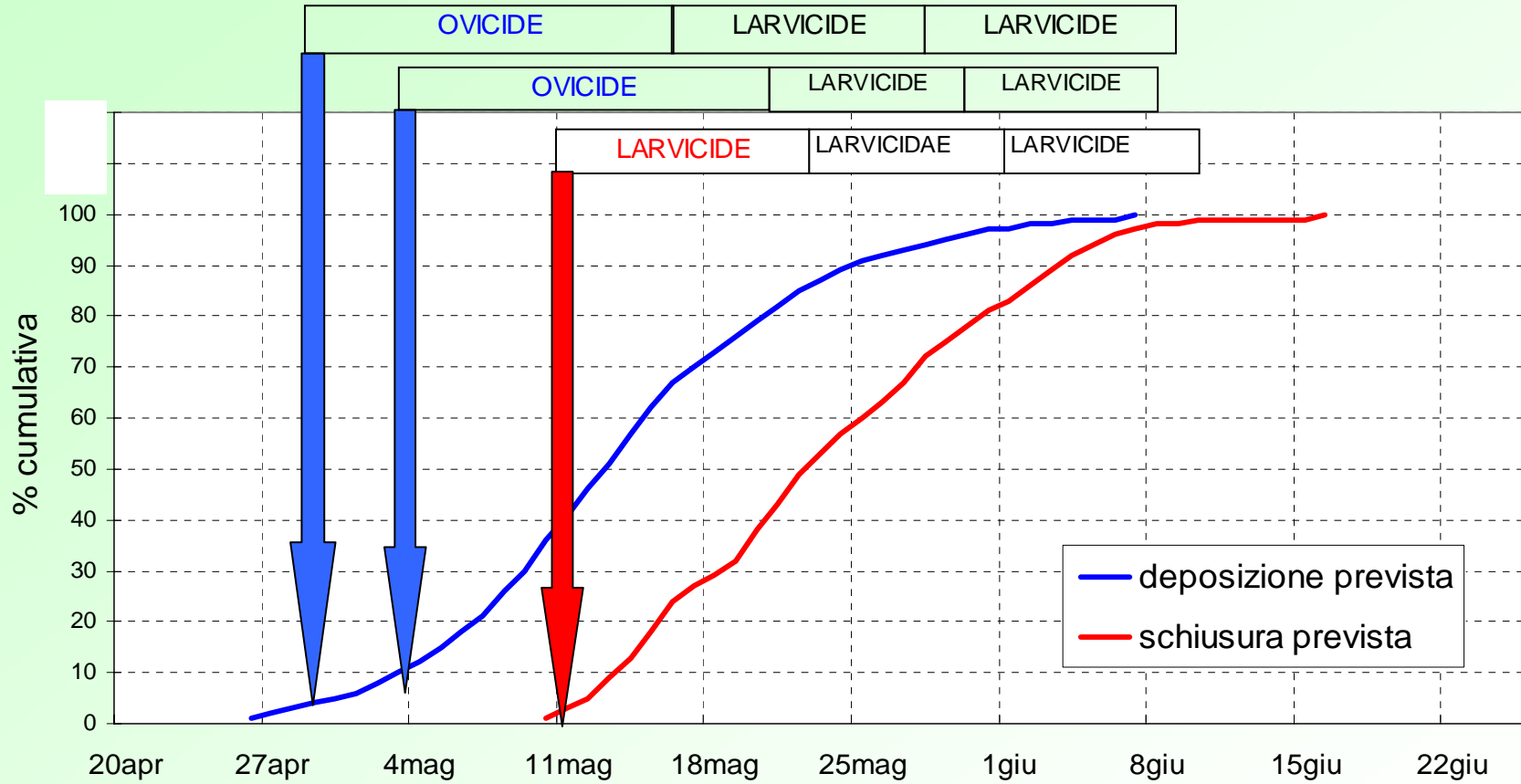
CODLING MOTH

1st & 2nd generation	Model information
TRAP PLACEMENT	Almost all the pupae formed
PHEROMONE DISPENDER PLACEMENT	Almost all the pupae formed before the beginning of the adult flight
WHEN 1st OVICIDAL SPRAY AND WITH LOW PEST PRESSURE	within 10% of egg-laying and before larval birth
WHEN 1st OVICIDAL SPRAY AND WITH HIGH PEST PRESSURE	At the very first percentage of egg- laying
WHEN 1st LARVICIDAL SPRAY	Beginning of larval birth



SPRAY TIMING

Cydia pomonella

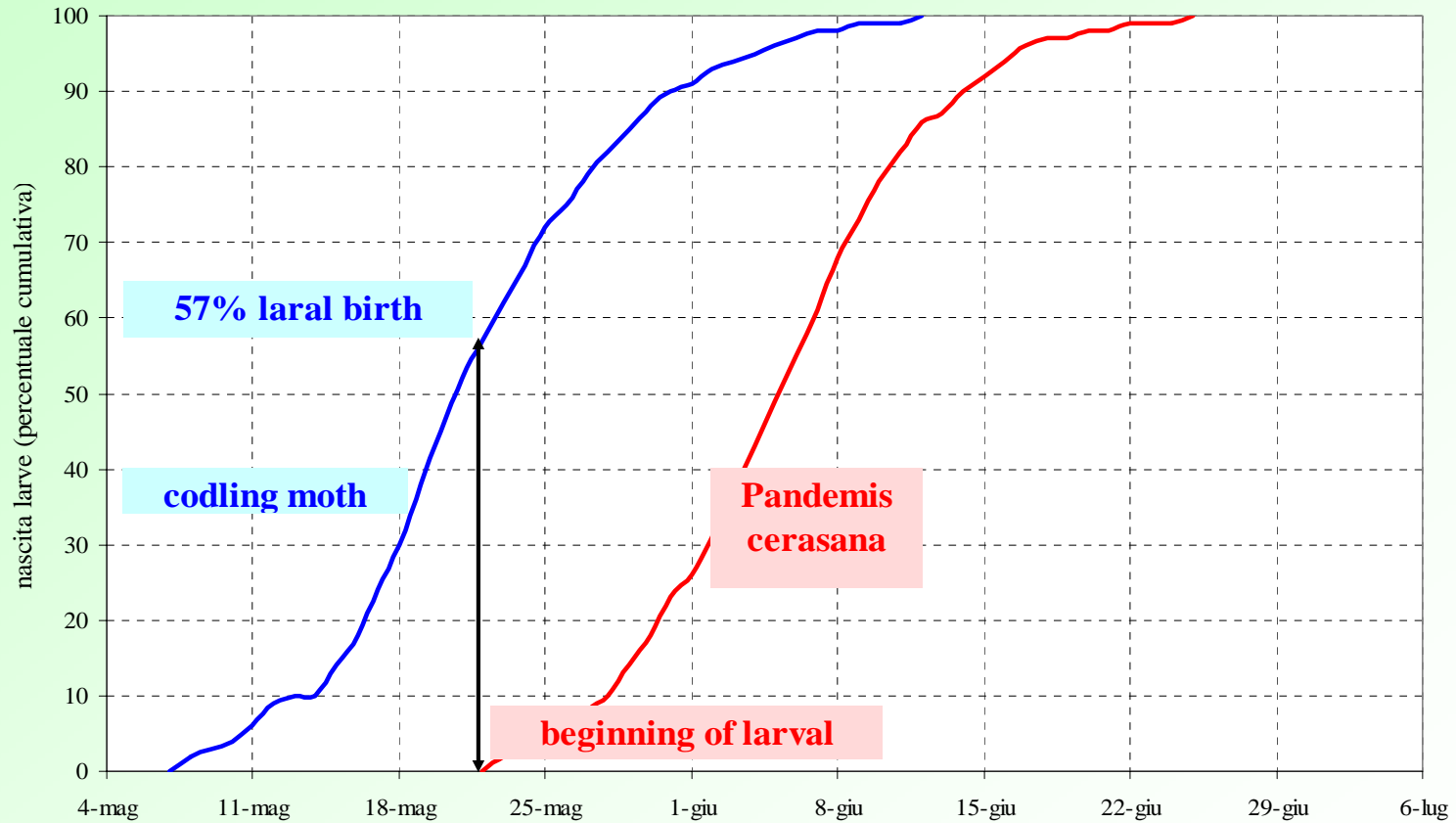


PANDEMIS CERASANA

1st & 2nd generation	Model information
Spray on overwintering larvae	Beginning of pupae
Trap placement	Before the beginning of adult flight
Egg survey	Beginning of egg-laying and its evolution
Larvicidal sprays	- 10 to 20% larval birth or more with low pest pressure - larval birth evolution
Sprays against codling moth and Pandemis cerasana	Information on larval birth of both species
Beginning of 2nd flight control	Beginning of new adult flight

SPRAY TIMING

Cydia pomonella-*Pandemis cerasana*



EULIA

1st, 2nd & 3rd generation	MODEL INFORMATION
TRAP PLACEMENT	Before the adult flight
2nd & 3rd adult flight check	New adult flight
SPRAY AFTER THE THRESHOLD OVERCOME (CUM % OF ADULT CATCHES)	% larvae already born and subsequent period of presence

CYDIA FUNEBRANA

1st, 2nd & 3rd generation	Model information
TRAP PLACEMENT	Almost all the pupae formed
MATING DISRUPTION DISPENSER PLACEMENT	Almost all the pupae formed before the beginning of adult flight
EGG SURVEY	From the beginning of egg-laying
LARVICIDAL OR OVICIDAL SPRAY	At the beginning of egg-laying and larval birth

CYDIA MOLESTA

1st & 2nd generation	Model information
TRAP PLACEMENT	Almost all the pupae formed
MATING DISRUPTION DISPENSER PLACEMENT	Almost all the pupae formed before the beginning of adult flight
1st OVICIDAL OR LARVICIDAL SPRAY	At the beginning of egg-laying and larval birth

LOBESIA BOTRANA

1st, 2nd & 3rd generation	Model information
OPTIMAL TIME FOR BUNCH SURVEY	Egg-laying and larval birth
OVO-LARVICIDAL AND LARVICIDAL SPRAYS	Beginning of egg-laying Beginning of larval birth
FURTHER SPRAYS	Larval birth evolution

Lobesia botrana - spray timing (2nd gen.) Mandriole (Ra) - 1998

