



Figure 1 : the plot monitored at La Tapy

## Context of the study

Ecophyto 2018 is a French political program which objective is to reduce the use of chemical products in the orchards. This political program allowed the emergence of a new project called « **Cherry Apricot Plum : Inputs Reduction and systems Durability** » (CAP ReD). CAP ReD has been created in 2012 by different French partners and is coordinated by Ctifl. Its aim is to create, test and approve different agro-ecologic systems using at least 50% less pesticides as usual on cherry, apricot and plum.

## Study presentation

The plot monitored at La Tapy, in Carpentras, planted in 2012, is the only cherry orchard within this project. Two late varieties have been chosen, Regina and Belge, both grafted on Gisela 6 and trained as single axe (4 x 1,5m). Three modalities are tested :

- **IPM system** : led according to a classic IPM strategy
- **Ecophyto system** : managed using at least 50% less pesticides as usual
- **Untreated control** : used for controlling the annual pest and diseases levels

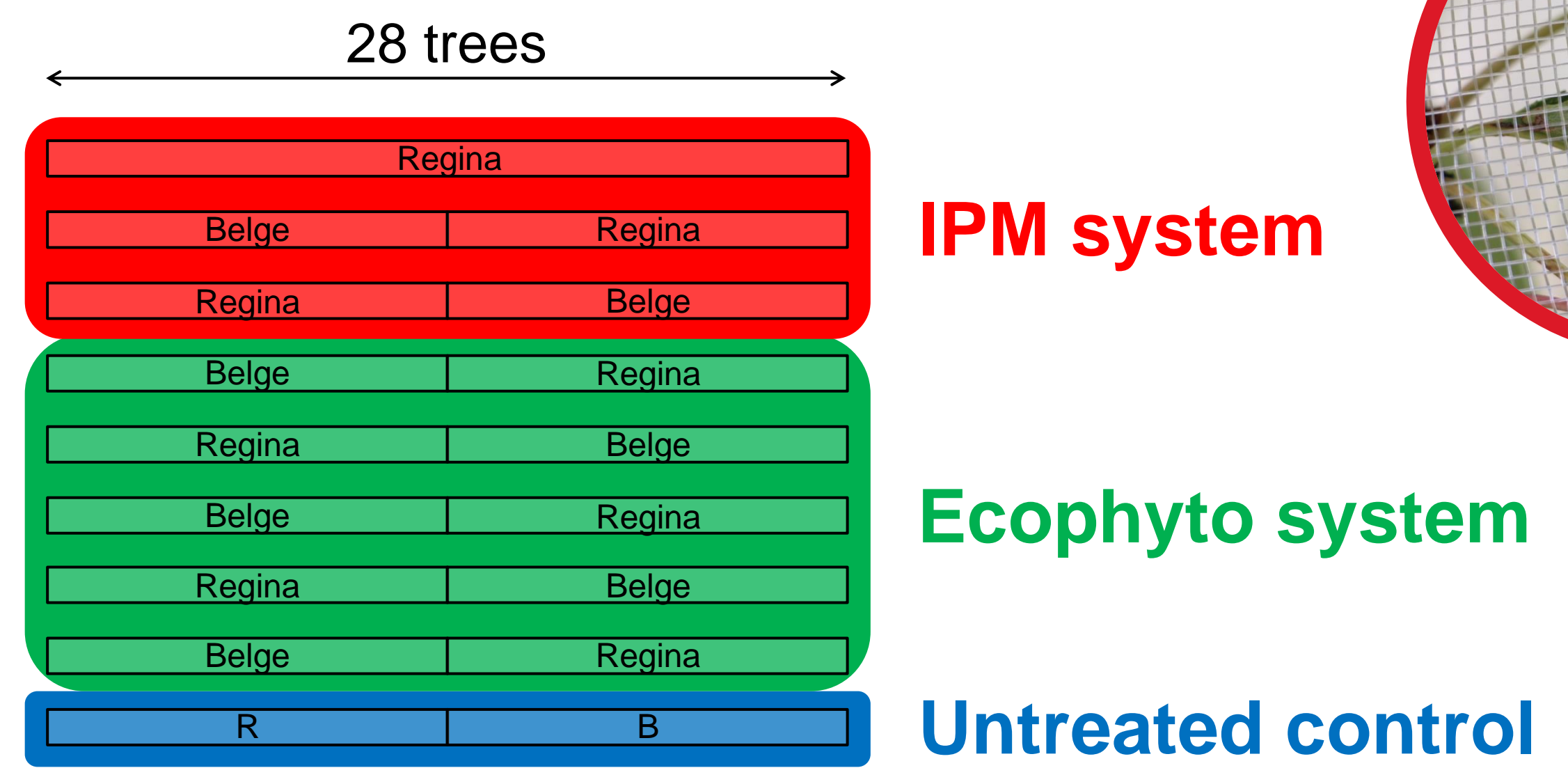


Figure 2 : map of the cherry plot

## How to reduce the use of products ?

“Ecophyto system” rows are **protected by nets (1,3 x 1,3 mm)** against *Rhagoletis cerasi* L. and *Drosophila suzukii* M. in order to stop using insecticides against flies. **A plastic cover is installed on the roof** to protect the trees from the rain, to avoid using fungicides against *Monilia sp.* on fruits. The soil under the row is ploughed to not apply herbicides.

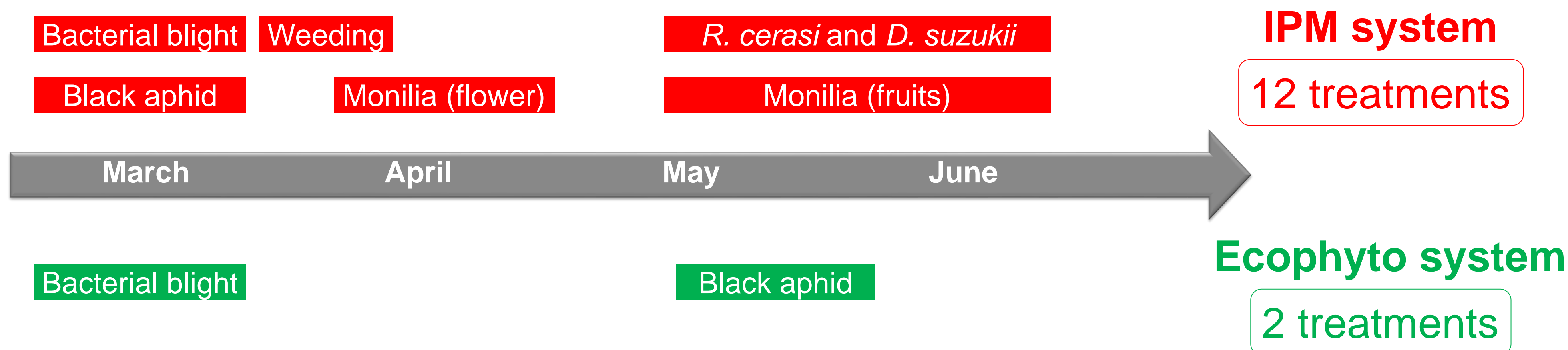


Figure 3 : treatment schedules

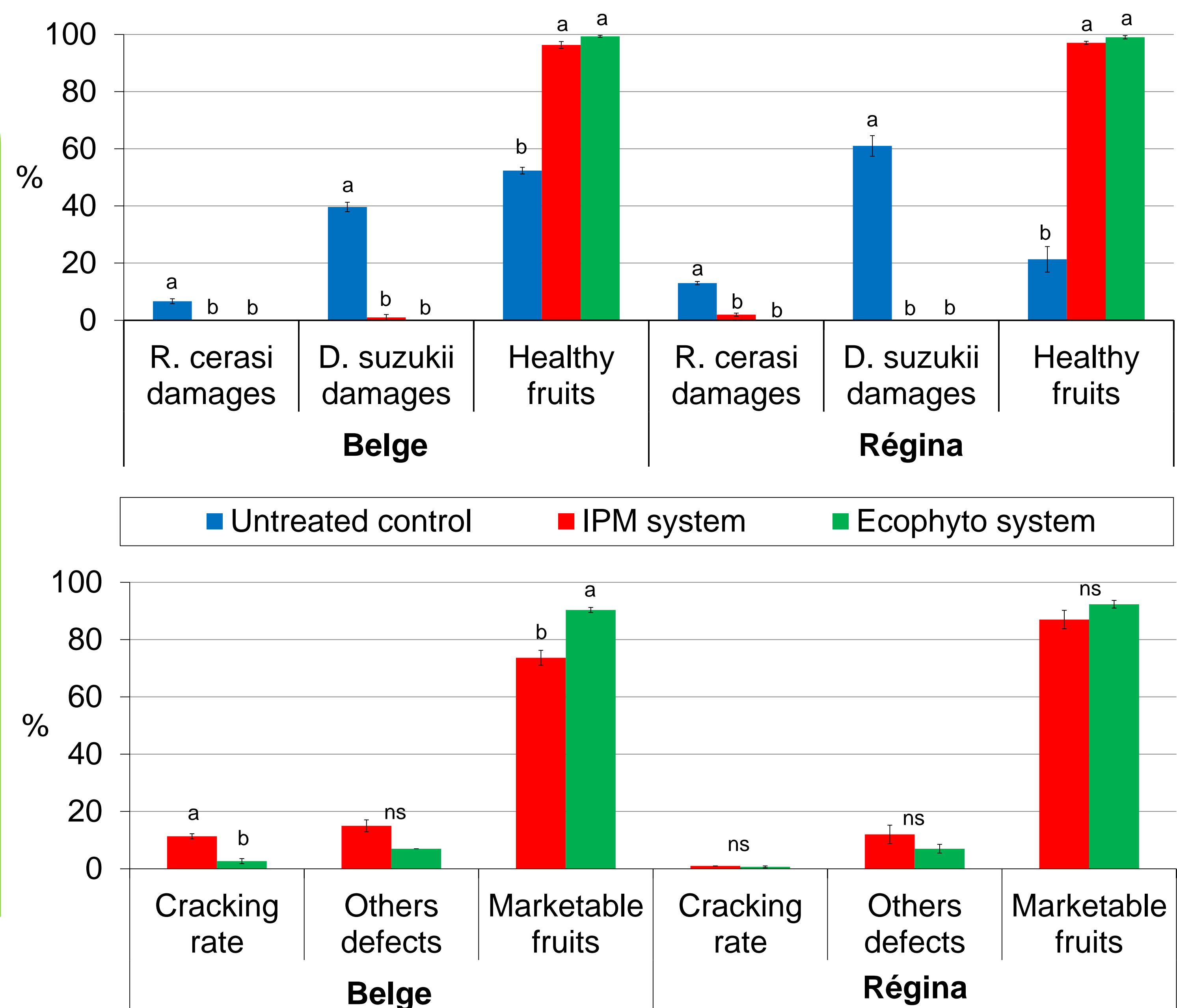
Figures 4&5 : Difference of flies attack rates and commercial qualities of the fruits between the studied varieties and modalities (for the commercial quality, the untreated control is not observed).

## Observations and first results

The performance of the “Ecophyto system” is analysed by compared agronomical indicators (tree growth, production, fruit size and quality), ecological ones (spaying frequency, biodiversity), and economic ones (materiel cost, labor, ...).

First fruits have been harvested the 17th (Belge) and the 20th of June (Regina). For the first year of production, the production was very low. Yield, fruit size and maturity were not different between the two systems. 11% of cracking was observed on cherries Belge “IPM system” and only 3% on “Ecophyto system”. The others defects were mainly wind rubbing and earwig damages. So there were more marketable cherries Belge on “Ecophyto system” than on “IPM system”.

Regarding flies damages, the pest levels were high and there is no statistical difference between “Ecophyto system” and “IPM system”. No wormy cherry had been found on “Ecophyto system” : the nets have an efficacy of 100%.



## Conclusion and outlook

Those first results are encouraging but they must be confirmed and completed by other observations during 10 or 15 years. The use of pesticides was well decreased by more of 50%. *Monilia sp.* level was very low this year so we have to be careful regarding this disease which could benefit from the stuffy atmosphere under the nets. Next year, wiper captors will be put under and outside the nets to measure their effect on the micro-climate.

The ecological and economic performances of this orchard will be strongly evaluated during all its life.