

# A Molecular Technique looks for the perfect candidate to kill the Olive Fly

**A team of researchers from the Complutense University of Madrid (UCM) has found a way to detect who may be the natural predators of the olive fly, through a molecular technique that detects DNA from the fly in the digestive tract of the candidates which is less damaging to the environment.**

The UCM has reported that one of the options that could reduce the use of chemicals is biological control brokered by potential predators. But the previous step to favor the presence of these natural enemies in the agroecosystems, is to confirm that they feed on the olive fly.

"It is difficult to determine this situation from the observation of the gastric content of the predators, given the size of the prey and the eating habits of the predator," explained Esther Lantero, a researcher at the Department of Genetics of the UCM and one of the authors of the study published in the Spanish Journal of Agricultural Research.

According to this research, in which has also participated the National Institute of Agricultural and Agro-Food Research and Technology (INIA), molecular techniques allow addressing this problem. Thus, through the Polymerase Chain Reaction (PCR) it is possible to specifically detect the DNA of the olive fly in the digestive tract of potential predators.

"This technique is reliable even in situations where we expect the DNA to be very degraded, as in this one, due to the digestive process," Lantero insisted.

## Up to three days of effectiveness

Before going through the laboratory, the technique was then tested in the real environment. To do this, a single pupae of the fly was fed to fasting specimens of the potentially predatory *Orthomus barbarus* beetle species which are very abundant in the olive groves of the Community of Madrid.

The results show that with this technique it is possible to detect the DNA of the olive fly in the digestive tract of the predator, up to three days after ingestion.

"This fly causes serious economic and agricultural losses by depositing the eggs inside the olives," recalled the UCM Biologist.

When they hatch, the larvae feed on the flesh of the fruit. Feeding habits of the larvae involve the loss of the fruit due to its premature fall or deterioration of olive production and quality, as the acidity increases and the organoleptic properties of the oil are modified.

Through the developed molecular technique, the UCM has emphasized that it will be possible to curb a pest whose remedy until now, the insecticide, caused detrimental side effects for the beneficial fauna of the olive grove, the environment and even human health.

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