



ecobertura®
INNOVANDO POR UNA AGRICULTURA SOSTENIBLE



ExpoAgro
Canarias

2023- Las Palmas de Gran Canaria

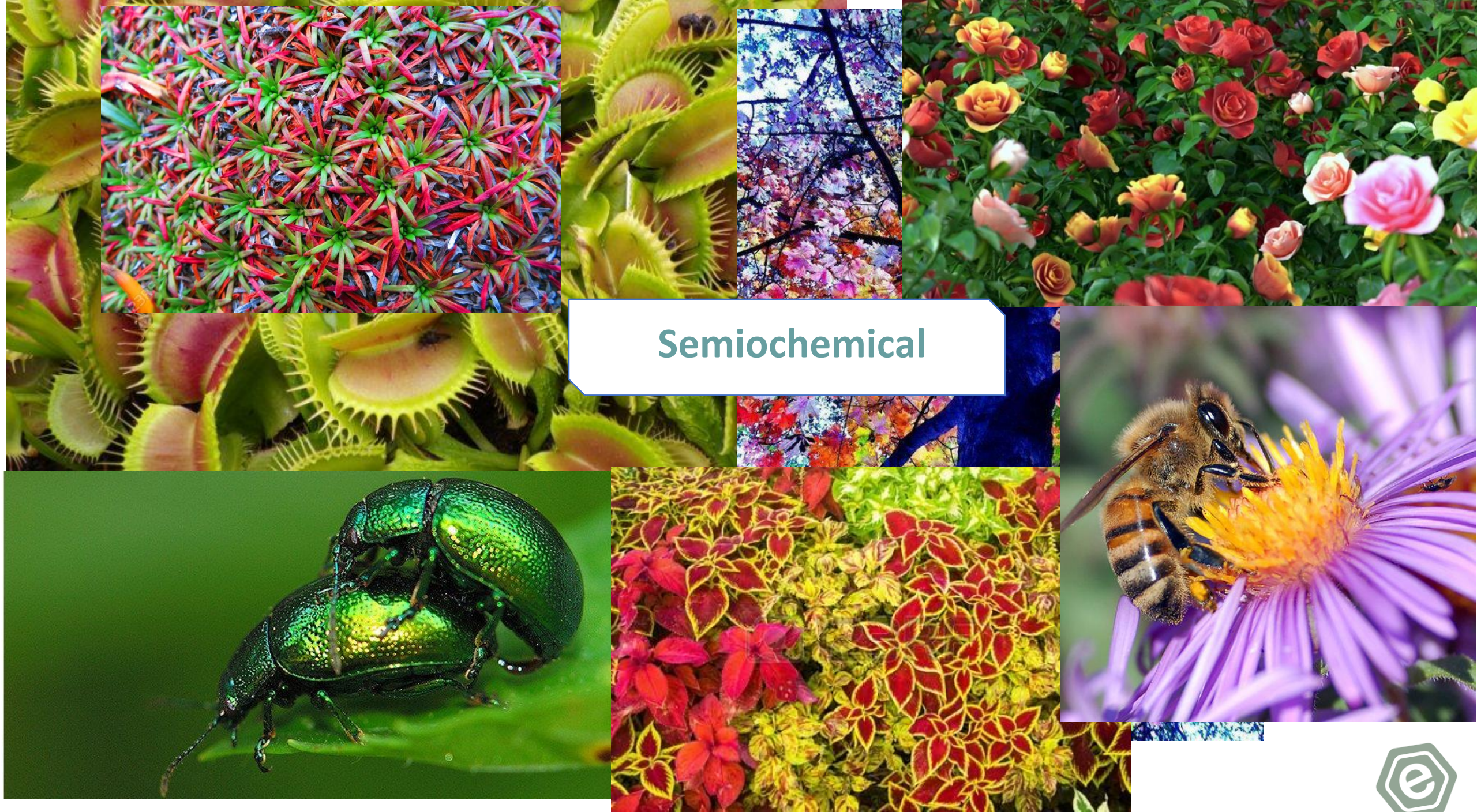
Pest Monitoring & Smart Traps

Fernando Pinacho
13/12/2023



Pest monitoring - a tandem jump





Semiochemical



Semiochemical

Different species



Allelomones

- Allomones
- Kairomones

Same species



Pheromones

- Sex pheromones
- Alarm pheromones
- Aggregation pheromones
- Trail pheromones



: compounds with intraspecific activity
- Changing behaviour or physiology in the insect

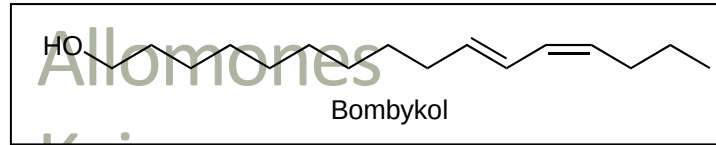
Semiochemical



Isolated for the first time in 1959 from silkworm moth *Bombyx mori*

Allelomones

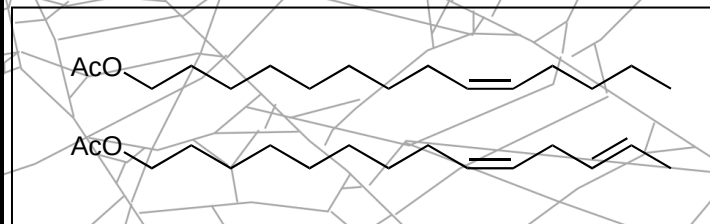
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Kairomones



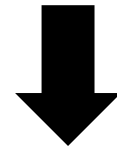
A NATURAL STRATEGY



Lacinipolia renigera pheromone

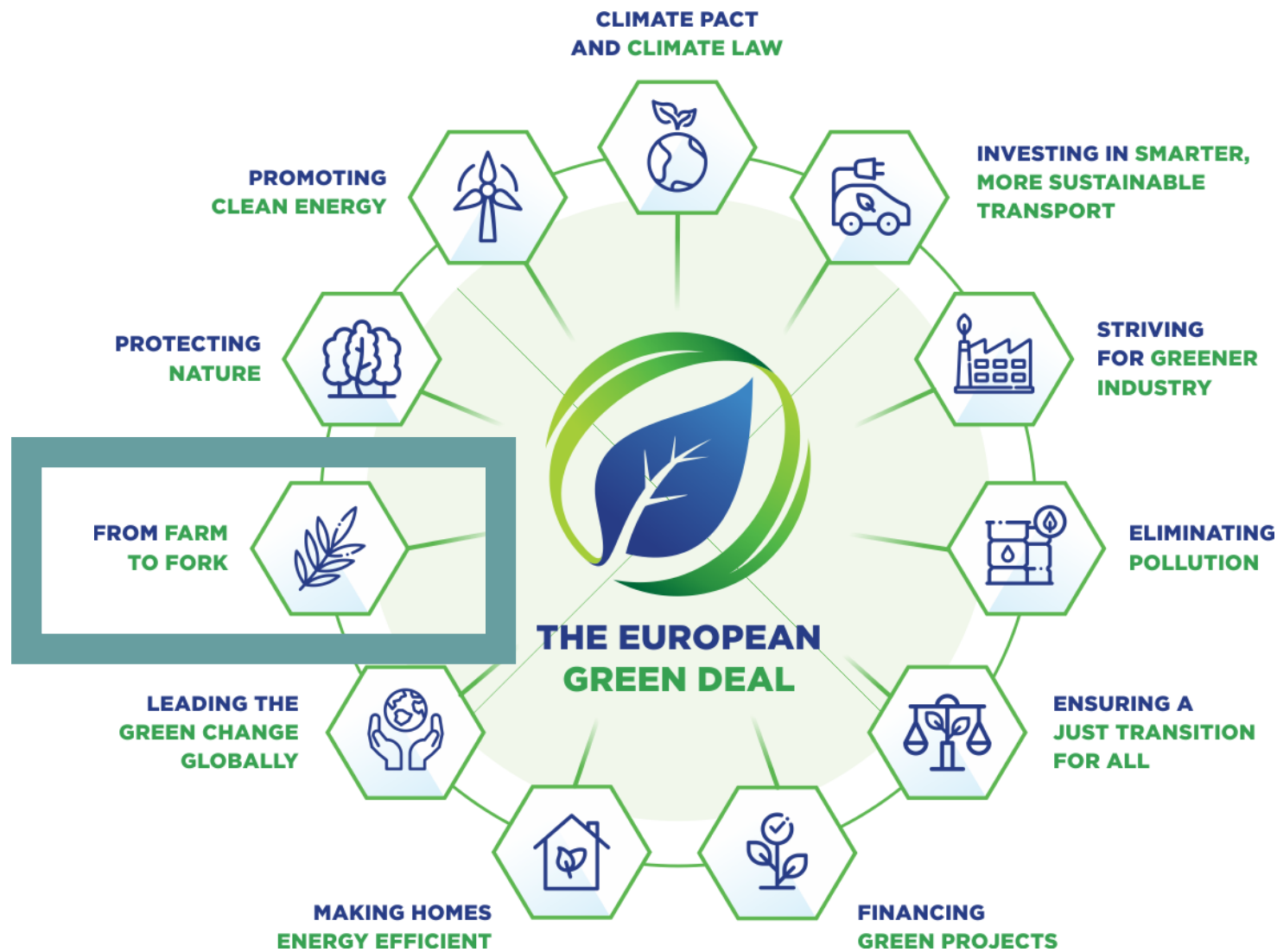


The pest pressure on crops is more frequent and more harmful



- **Economic losses** (300MM€/year – 40% worldwide production)
- **Increasing pesticide use:**
 - **Environmental impact**
 - **Health threatening**





- Reducing by 50% chemical pesticide by 2030
- Reducing fertilizer use at least 20% by 2030
- 25% organic farming by 2030



Which are the pesticide alternatives?



Pheromones no impact to the environment, early detection pest detection

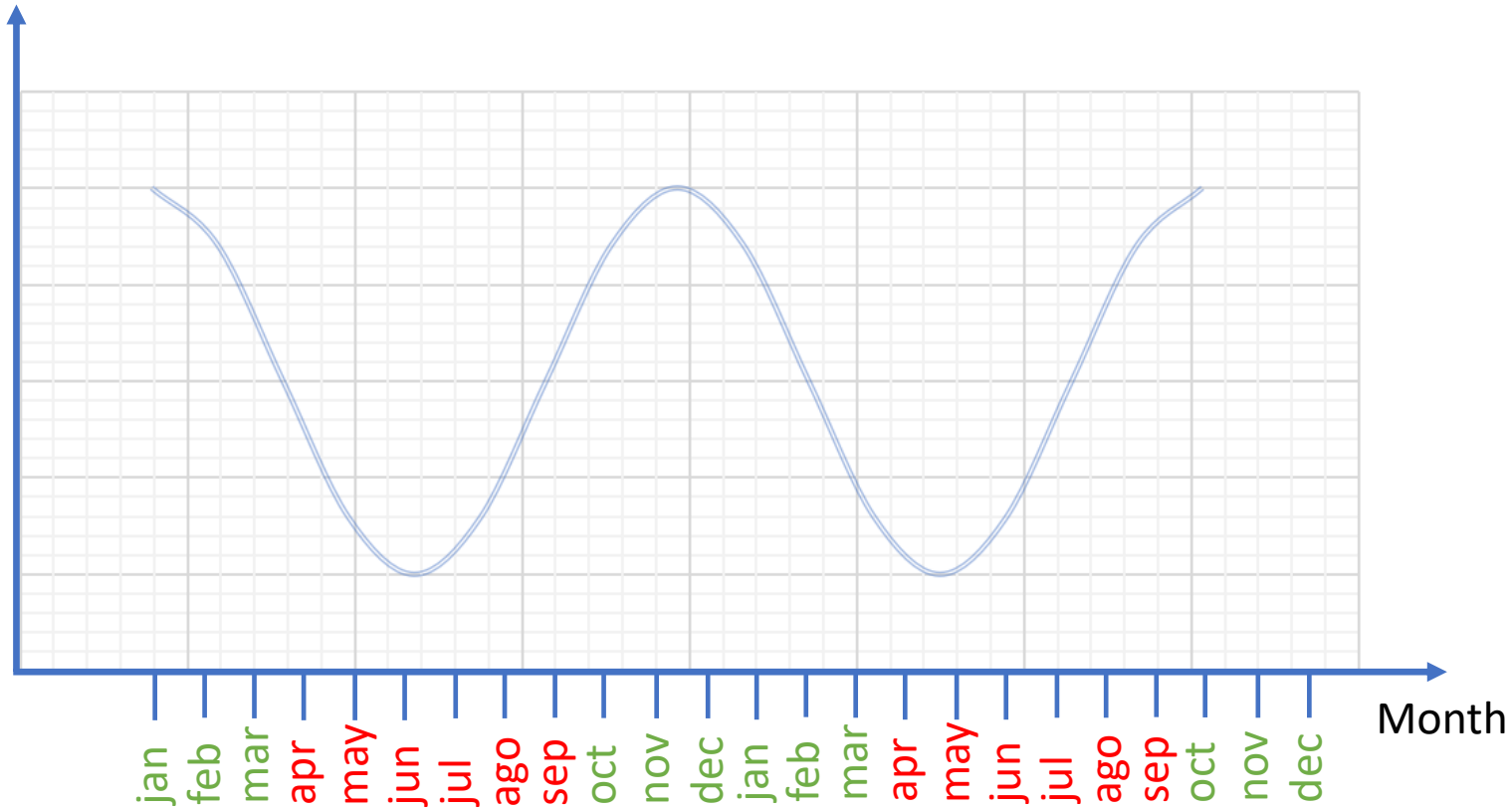


Allowing to reduce pesticide use

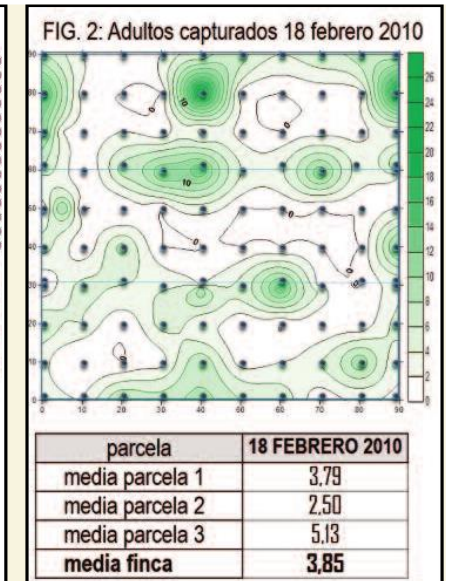
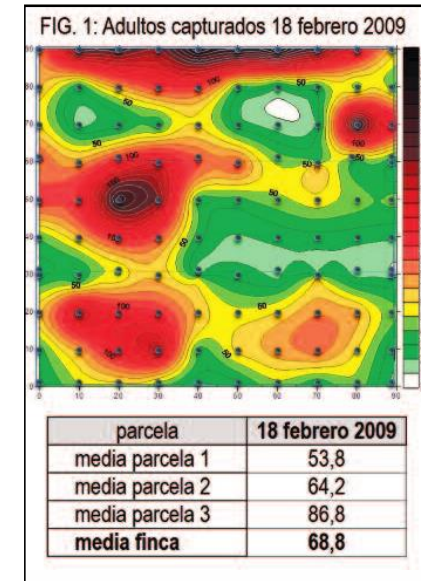


Insect population dynamics

Captures



Pest Behaviour



Raimundo Cabrera, revista
Agropalca enero-marzo 2016



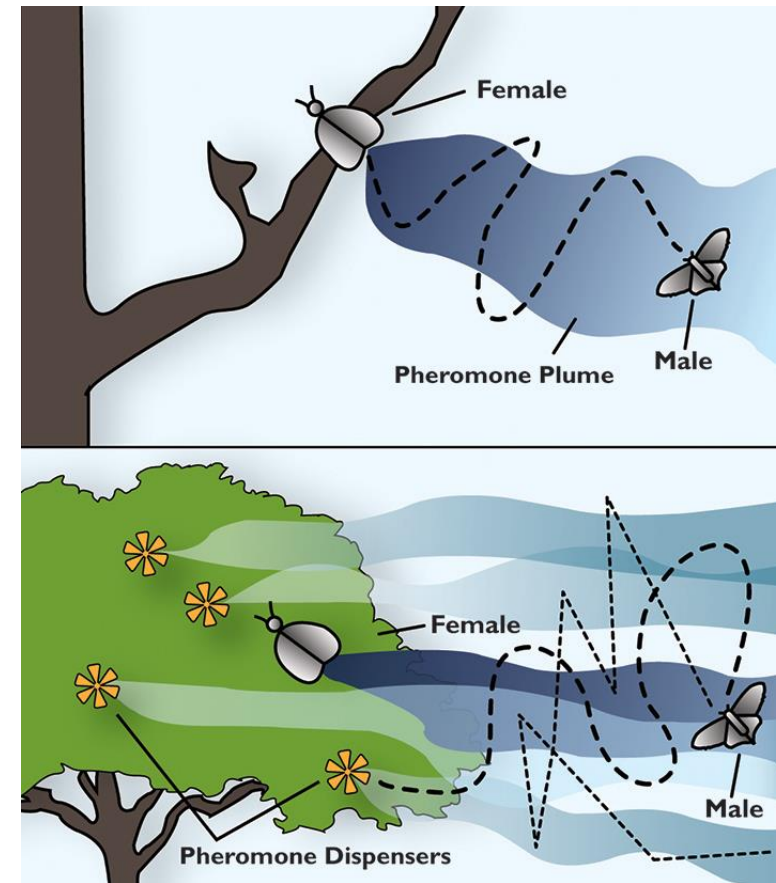
Monitoring



Mass trapping



Mating disruption



Why should we monitor?

Detection (When?)



Quantify (How many?)



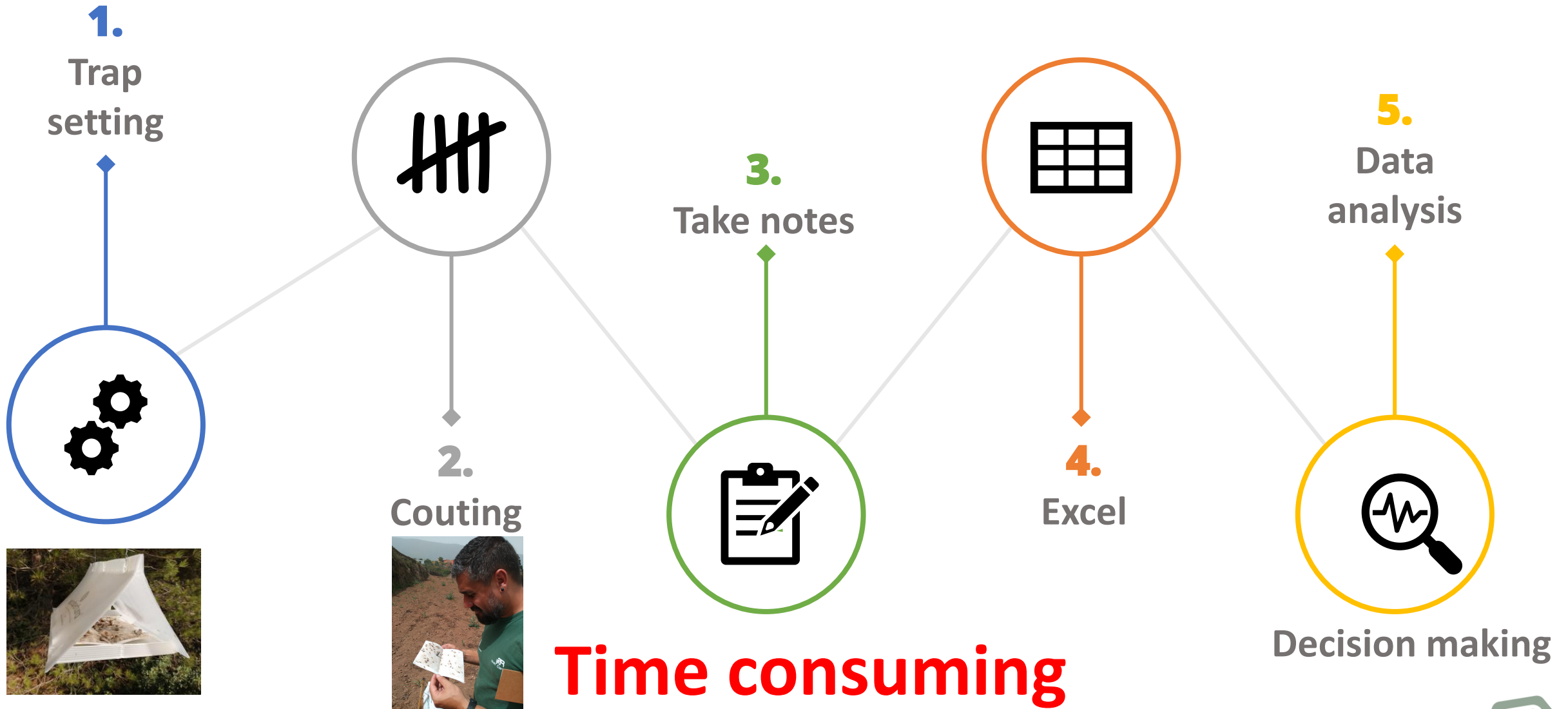
Follow up (understand)



- Decision making
- Economic and environmental impact



20TH CENTURY MONITORING

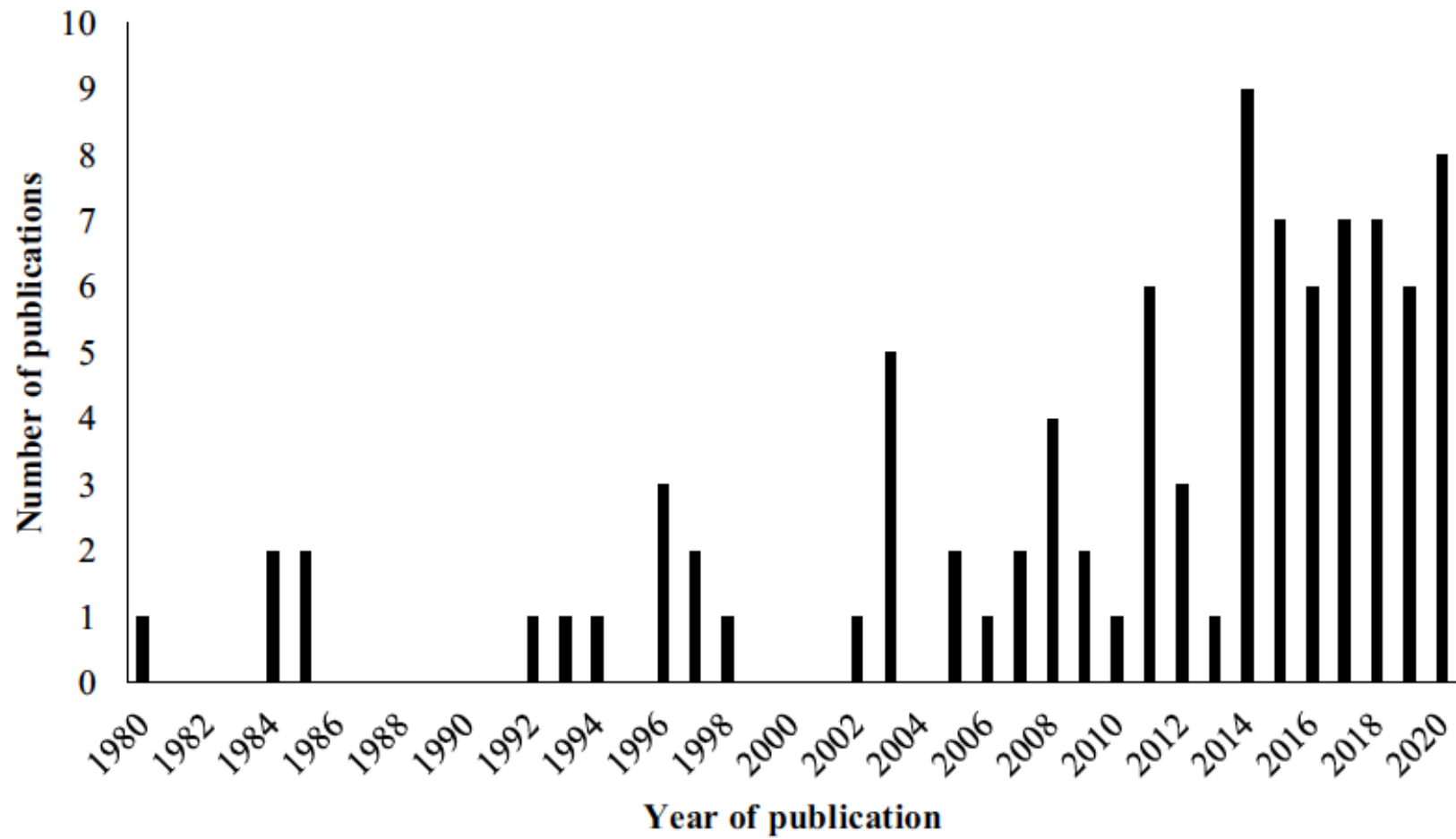




Agrotech – Precision Agriculture



Agrotech- new dicipline

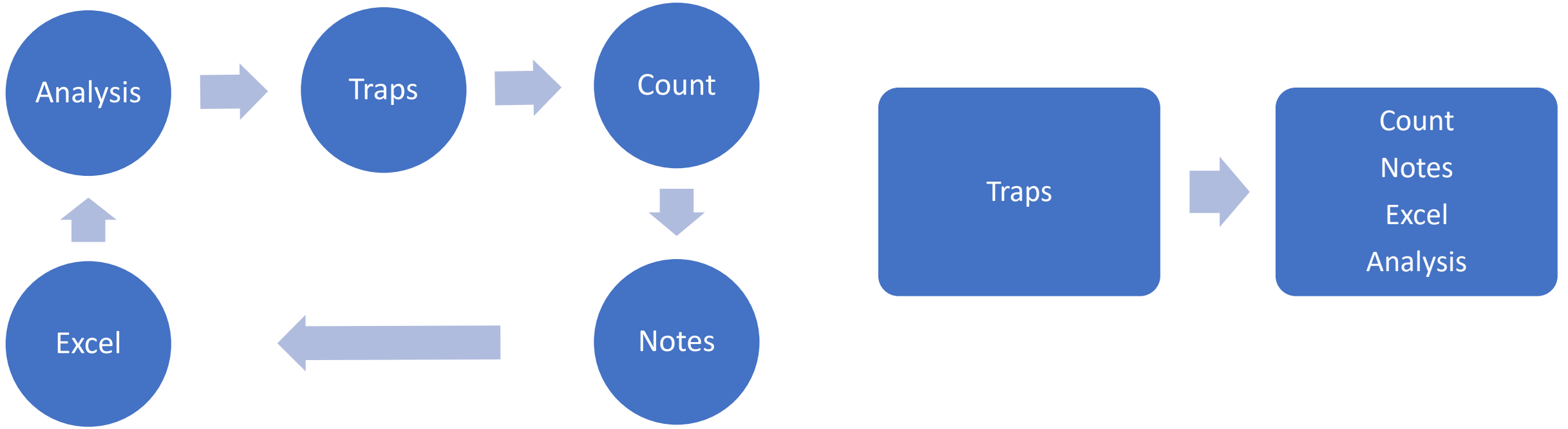


Key words: Camera **OR** video **OR** smart **OR** automatic **OR** automated **OR** electronic **OR** long distance **OR** remote **AND** monitoring **OR** detection **AND** insect **OR** pest in the publication title. Less than 100 articles until 2020.

Preti et al. *J.Pest.Sci* **2021**, 94, 203.



Smart trap – simplifying process



How to design a smart trap

Physical device



Software Interface



Smart traps – What can be found out there?



SightTrap



Z-Trap



Isout

They all need maintenance



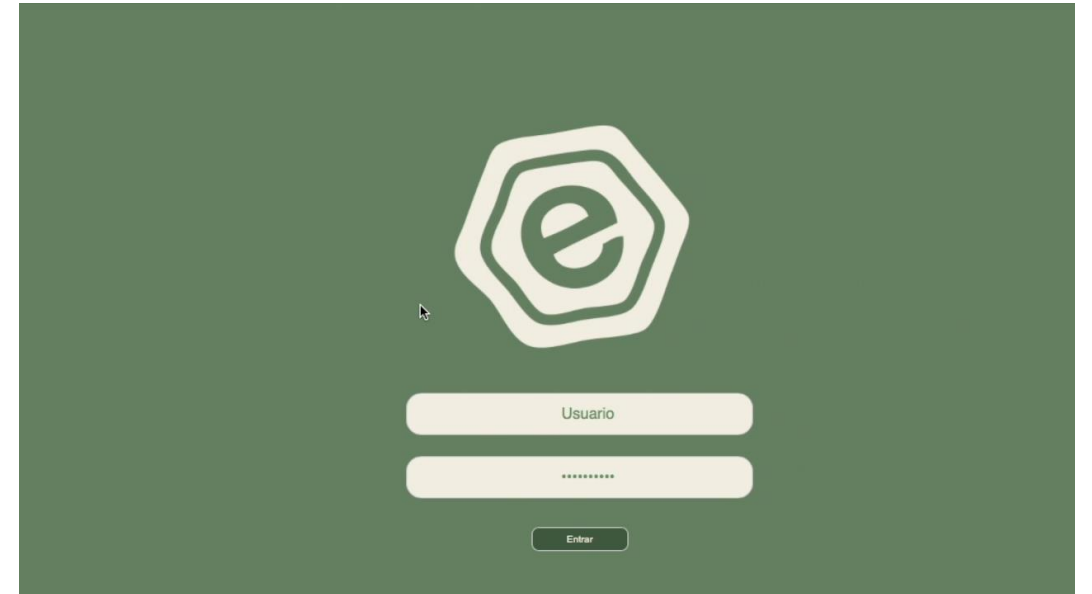
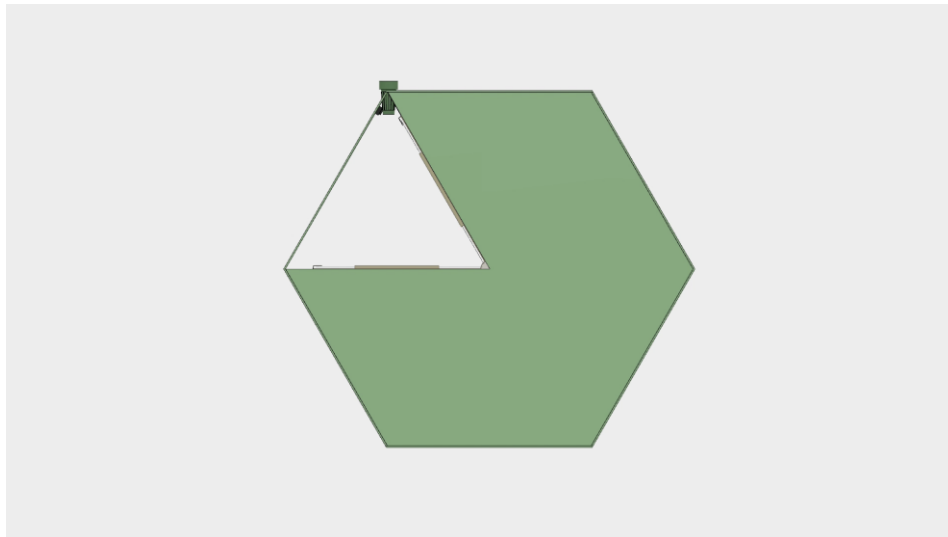
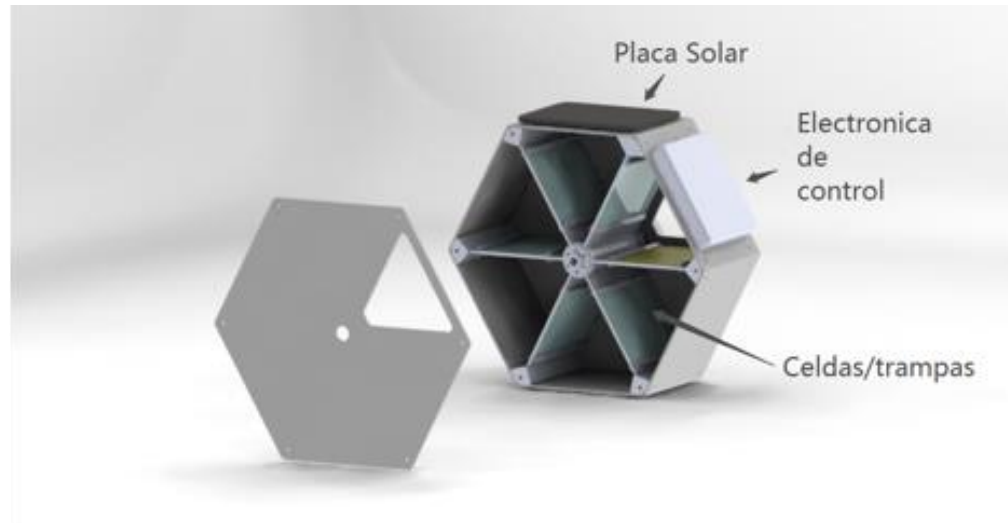
Semios



Trapview



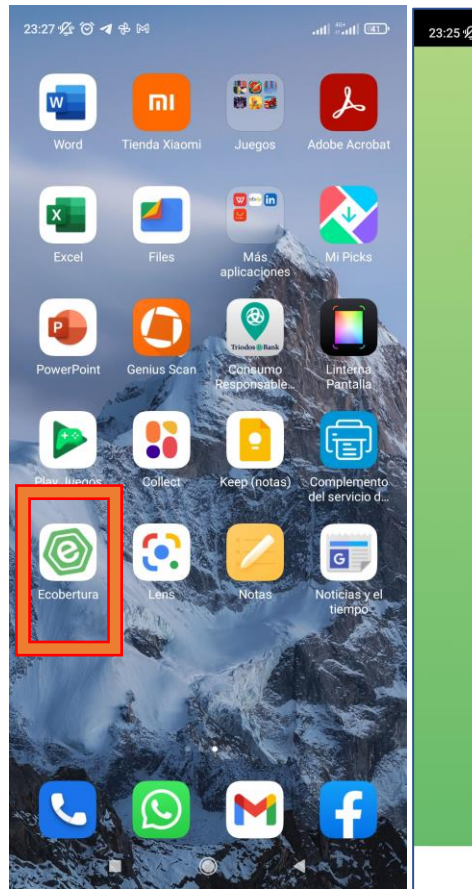
Ecobertap – New design (first prototype)



Ecobertrap – First prototype



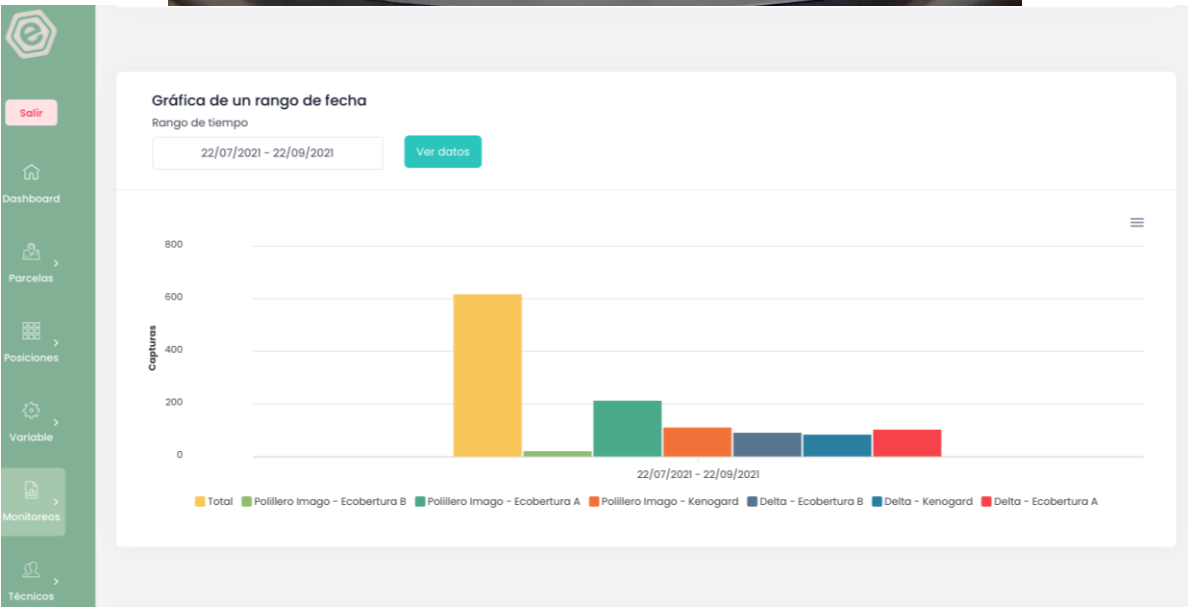
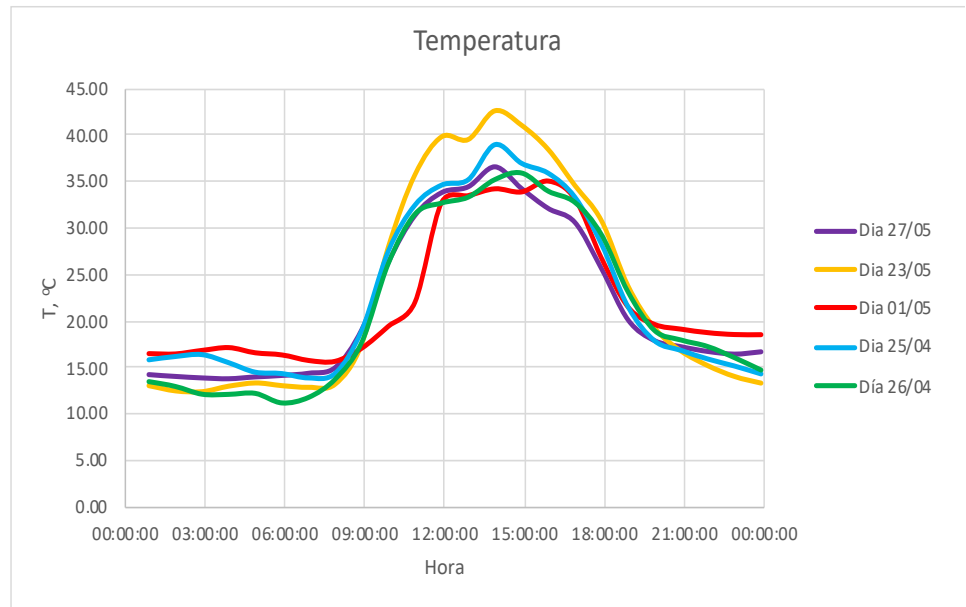
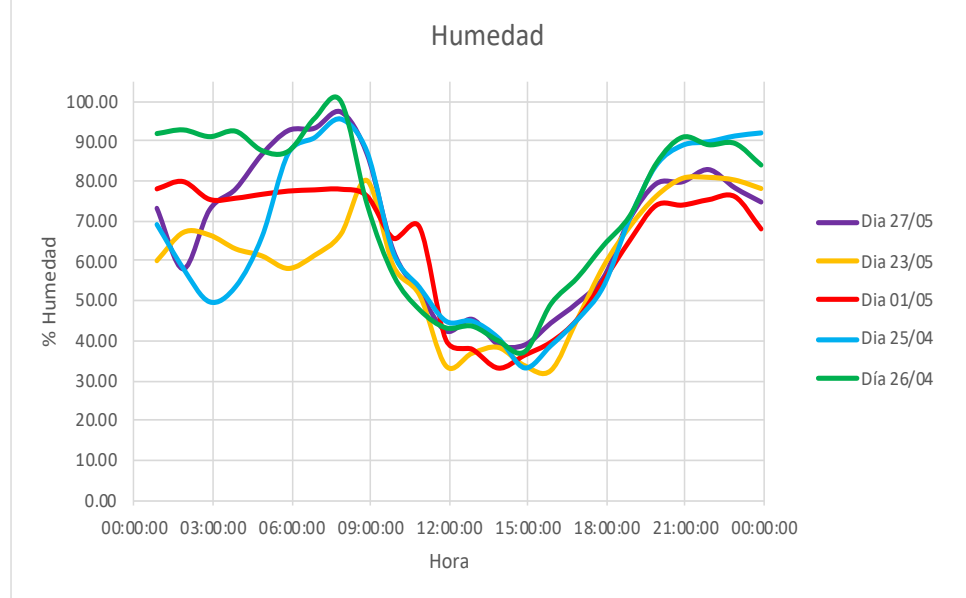
Ecobertura – Communication software



Notificaciones

- Hace 14 horas Nueva posición añadida por: Ventas Ventas 20/10/2021 | 23:42
p5-phytoma
- Hace 14 horas Nueva posición añadida por: Ventas Ventas 20/10/2021 | 23:42
p4-phytoma
- Hace 14 horas Nueva posición añadida por: Ventas Ventas 20/10/2021 | 23:41
p3-phytoma
- Hace 14 horas Nueva posición añadida por: Ventas Ventas 20/10/2021 | 23:41
p2-phytoma





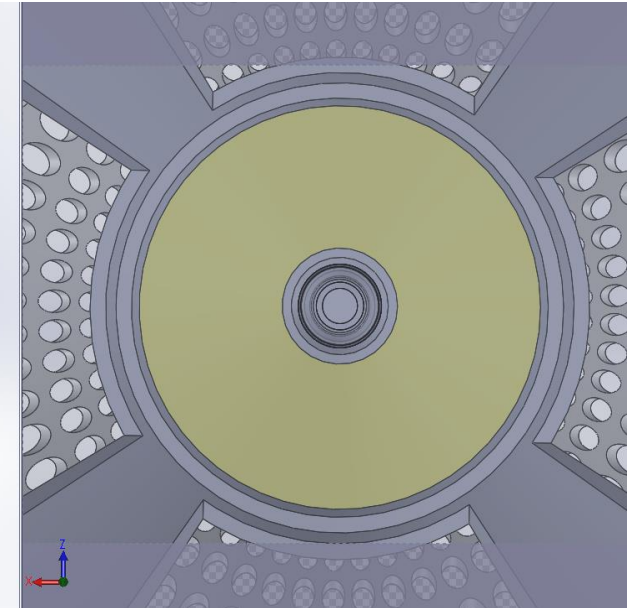
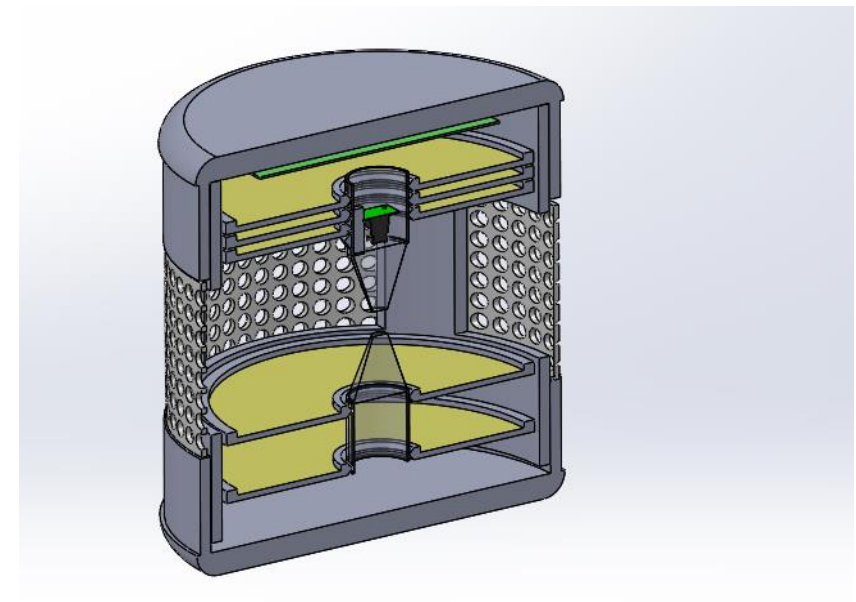
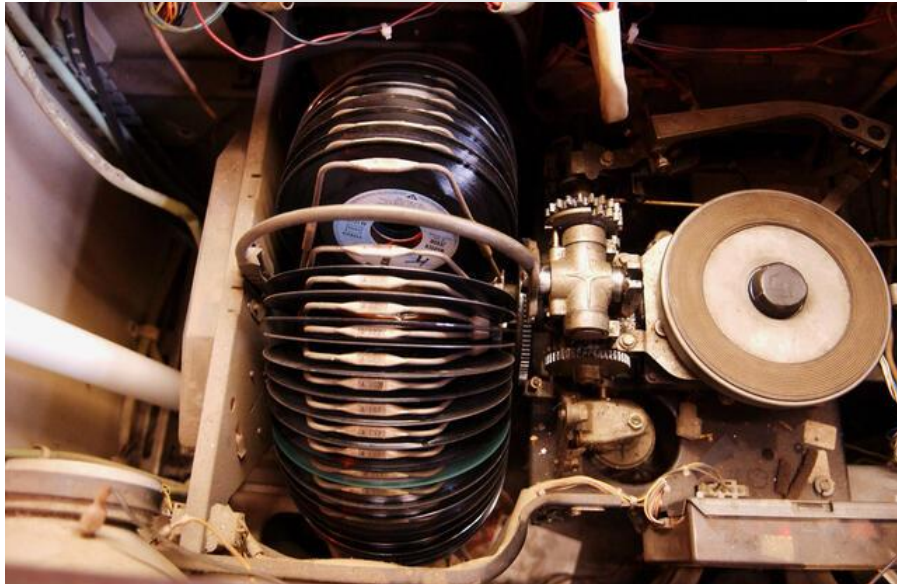
First prototype drawbacks



- Energy demand
- Size

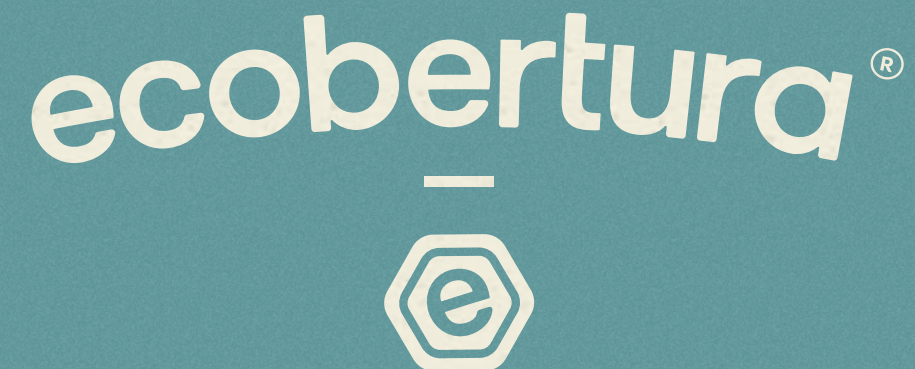


2nd prototype - Connecting dots







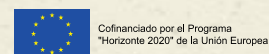


Thank you

APOYADO POR:



LOS PROYECTOS DE ECOBERTURA HAN SIDO/ESTÁN SIENDO COFINANCIADOS POR:



Subvencionado por el CDTI