

Use of digital tools in releasing *trichogramma brassicae* in cornfields

an example of use of digitalization in biological pest control programs

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fenaco

retail

food
industry



energy

agriculture

Sustainable crop protection

AGROLINE Bioprotect is working on new solutions, such as:

- beneficial insects
- drones
- mechanics and
- robots
- combination of methods and products

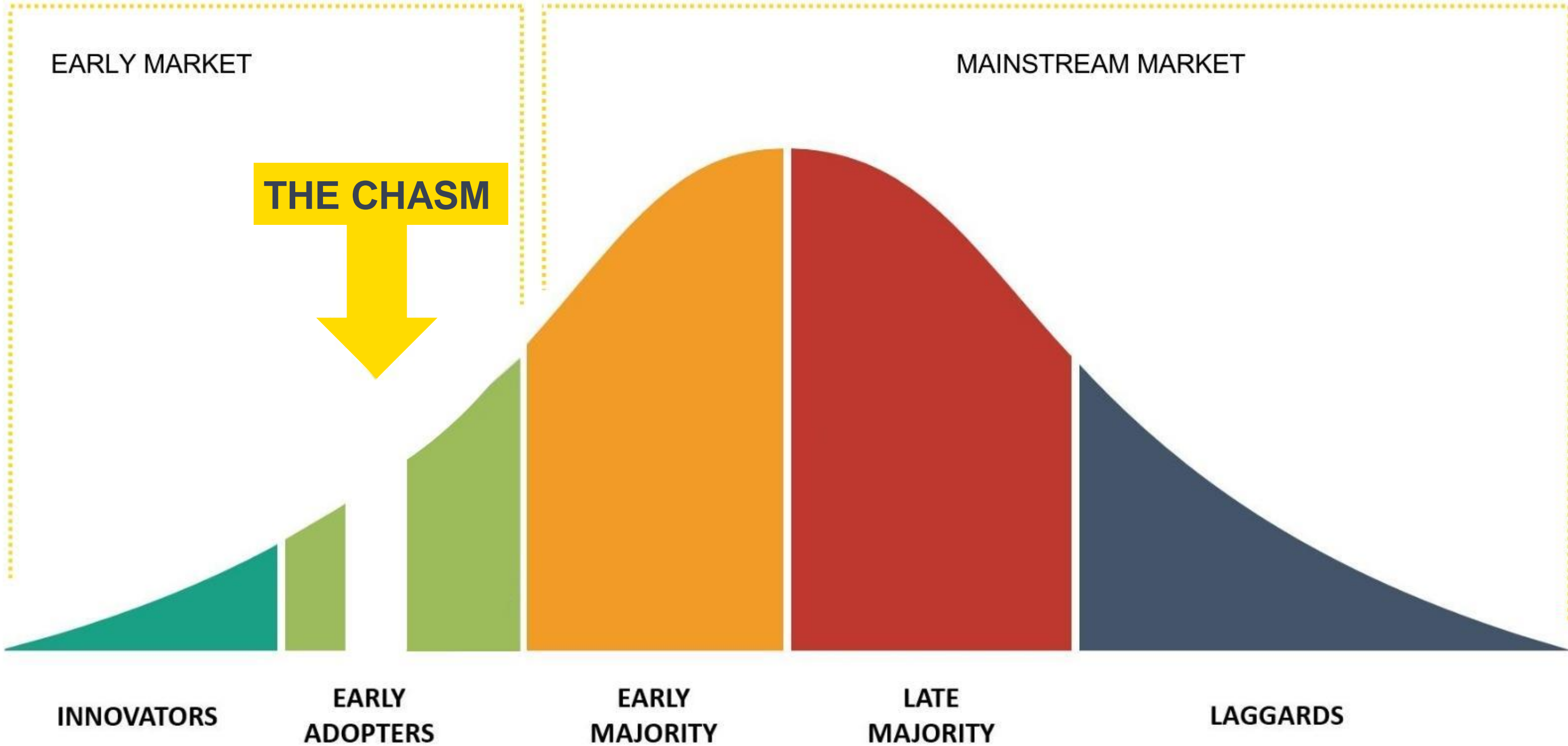
minimize environmental risks ✓

promote alternatives ✓

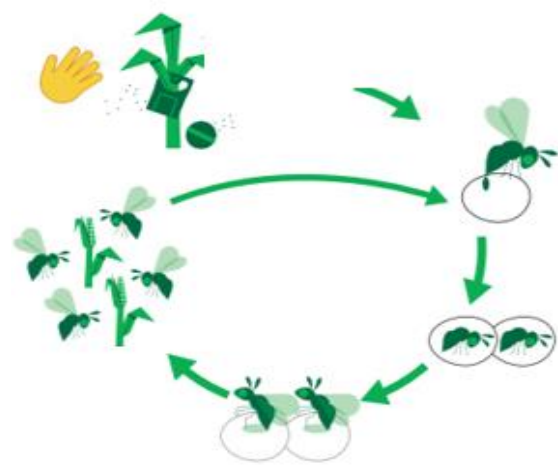


Bridging the innovation gap

How we support and promote new solutions







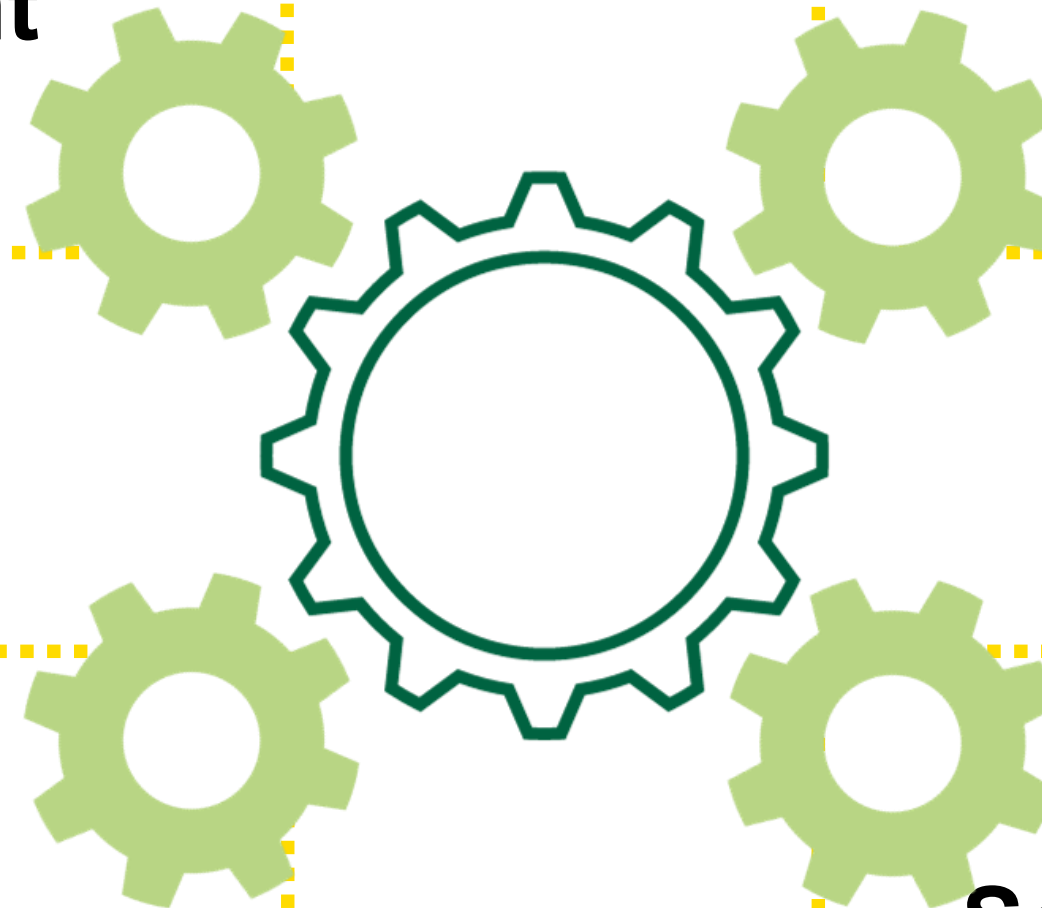
**Trichogramma
breeding &
deployment**

**Drone
technology**



**Digital
monitoring**

**Software
development**



Ordering process

order Trichogramma digitally via onlineshop

The screenshot shows the AGROLINE website's 'Gegen Schädlinge' (Against Pests) section. The top navigation bar includes 'AGROLINE', 'Service Bioprotect', 'Innovationen', and 'AGROLINE'. Below the navigation, there are tabs for 'Profi-Shop', 'Privatkunden-Shop', 'Online-Ratgeber', 'Bioprotect', and 'Kataloge +'. The main content area is titled 'Gegen Schädlinge' and features a sidebar with 'Produktkategorien' (Product Categories) such as 'Gegen Schädlinge', 'Gegen Krankheiten', 'Monitoring', 'Bestäubung', 'Pflanzenstärkung', 'Gegen Unkraut', 'Fliegenbekämpfung', 'Drohnen-service', and 'Hilfsmittel'. The main content area displays 'Biologische Schädlingsbekämpfung' (Biological pest control) and 'Nützlinge und weitere natürliche Produkte gegen diverse Schädlinge:' (Beneficial insects and other natural products against various pests). A 'Filter' button is visible. Below the filter, there are three product cards for Trichogramma: 'Optibox: Trichogramma-Schlupfwespen gegen Maiszünsler', 'Optikugel: Trichogramma-Schlupfwespen gegen Maiszünsler', and 'Trichocap Plus: Trichogramma-Schlupfwespen gegen Maiszünsler'. Each card has a 'bestellen' (order) button and a 'mehr Informationen' (more information) link. At the bottom, there is a 'Ratgeber' (Advisor) section with an 'Online-Ratgeber' button.

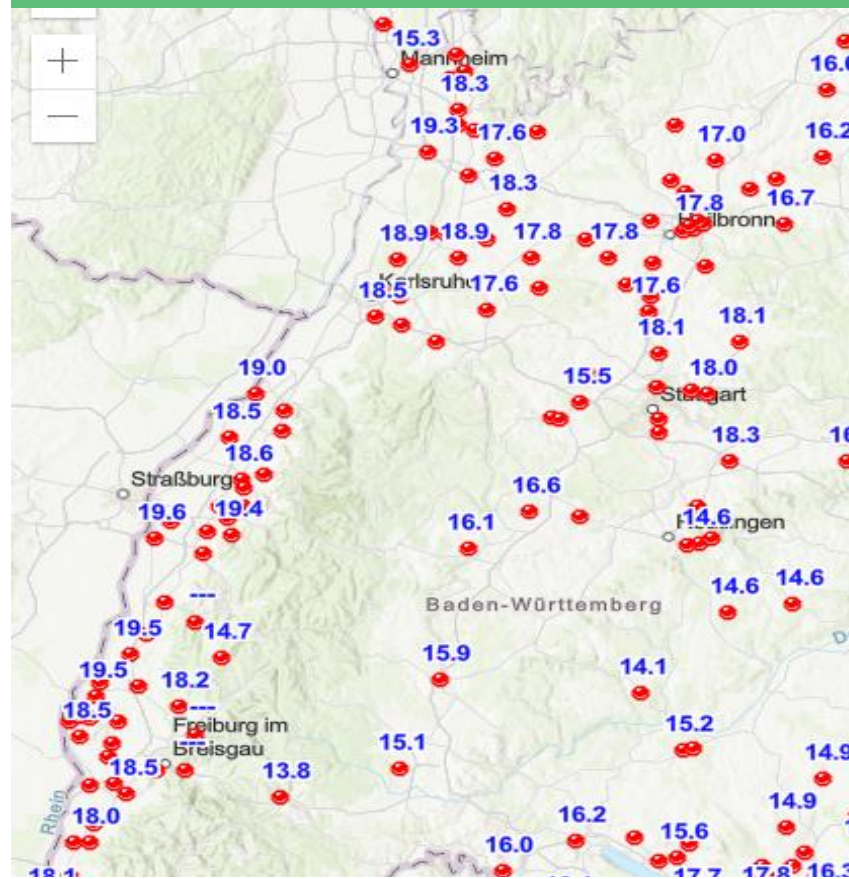
The screenshot shows the 'Feld Eigenschaften' (Field Properties) section of the online shop. It features a satellite map of a field with a yellow polygon highlighting a specific area. Below the map, there is a 'Feldname' (Field Name) input field. A note states: 'Bitte geben Sie an, ob der Pflanz folgende Hindernisse beachten muss.' (Please indicate if the following obstacles must be taken into account for planting). Below this note are four checkboxes: 'Stromleitungen' (Power lines), 'Bäume' (Trees), 'Höhenänderung > 10 cm' (Elevation change > 10 cm), and 'Erreichte Maximalhöhe' (Reached maximum height). A green 'Feld speichern' (Save field) button is located at the bottom left of this section.

The screenshot shows the 'Rechnungsadresse' (Billing Address) form. It includes the following fields and options: 'Anrede' (Salutation) with radio buttons for 'Frau' (Mrs) and 'Herr' (Mr); 'Firma' (Company) with a text input field; 'Vorname' (First Name) and 'Nachname' (Last Name) with separate text input fields; 'Strasse, Nr.' (Street, No.) and 'Nummer' (Number) with separate text input fields; 'PLZ, Ort *' (Postal Code, Location) with a text input field; 'E-Mail' with a text input field; 'Telefon' (Phone) with a text input field; and a checkbox for 'Abweichende Lieferadresse' (Different delivery address). A yellow 'Weiter zur Bezahlung' (Continue to payment) button is located at the bottom right.

Monitoring and judging

What is the best release time of Trichogramma?

Temperature models



Stubble pile



Egg-laying hatching cage

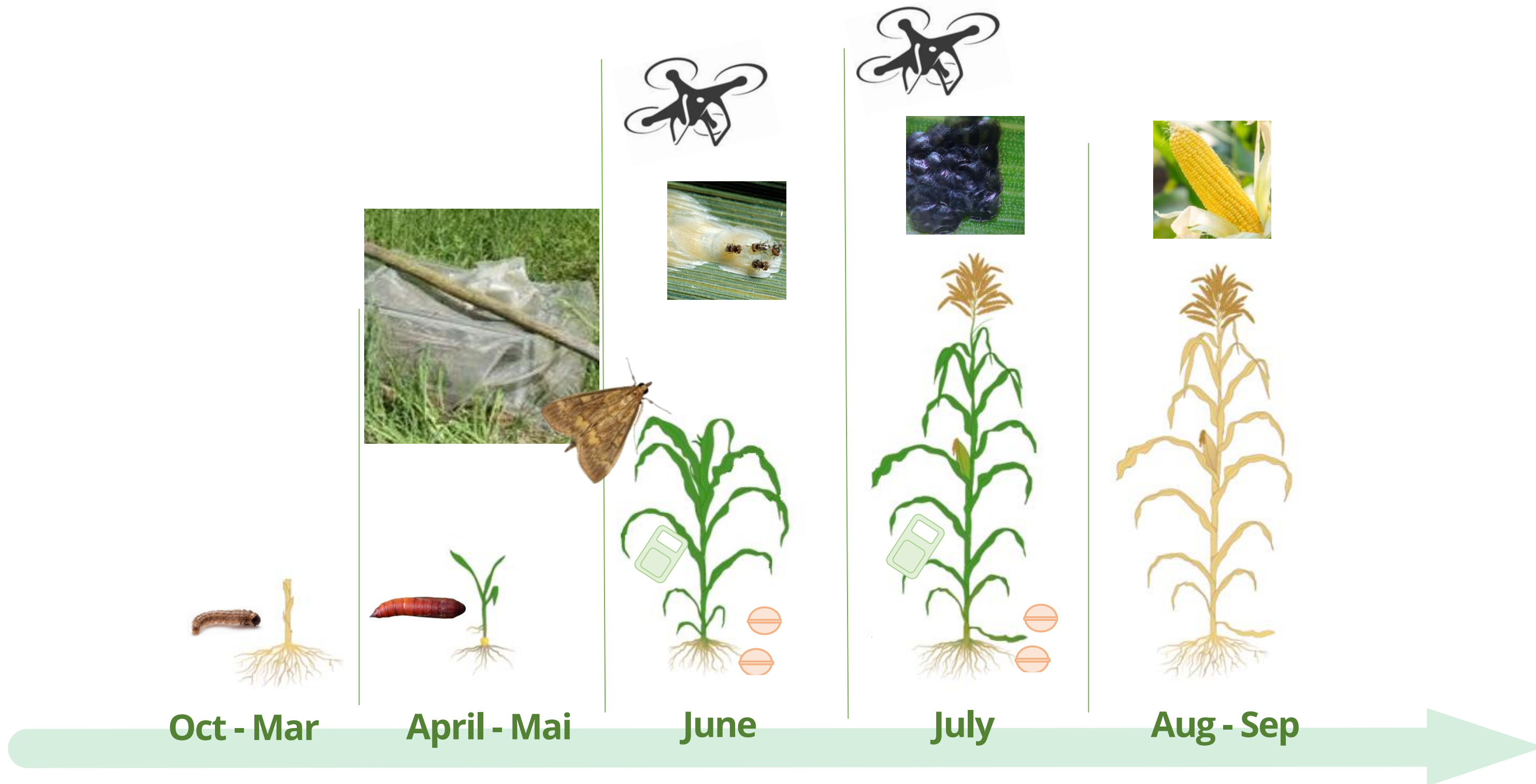


Digital working traps



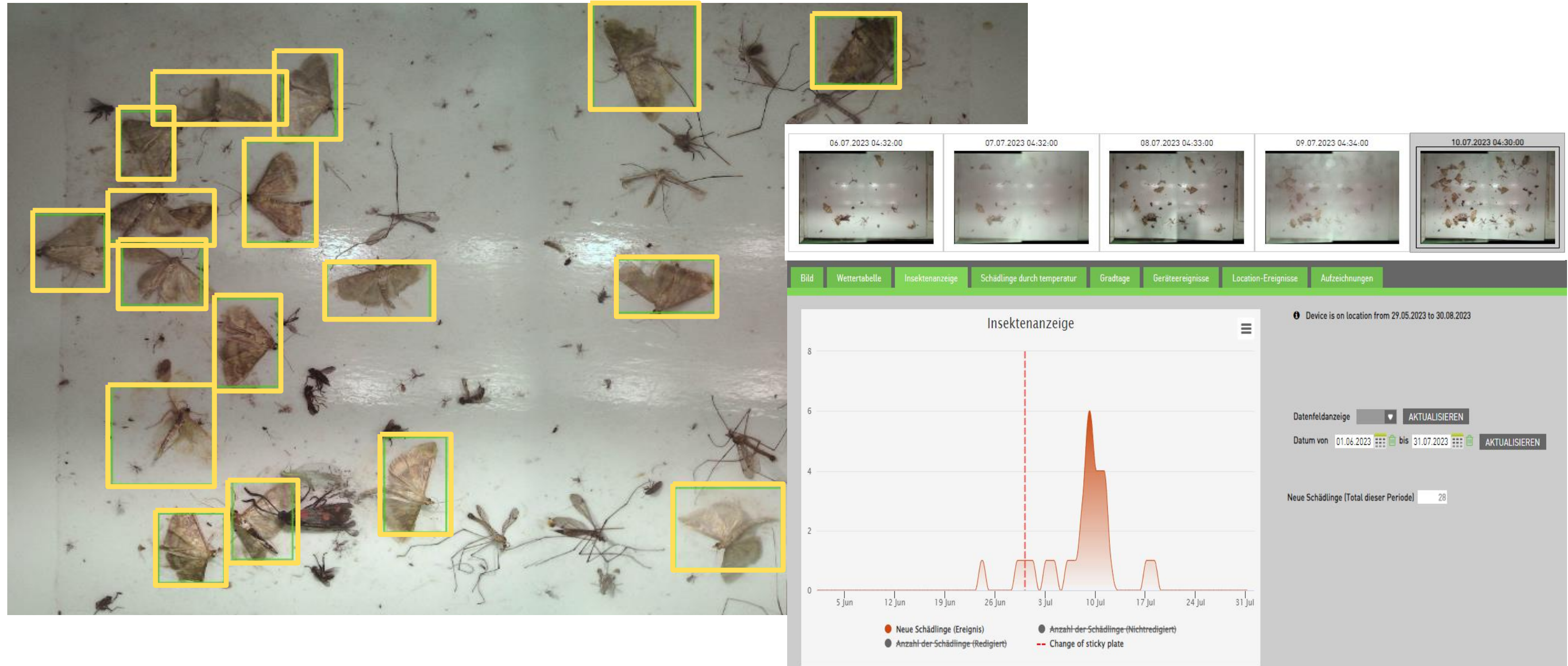
Monitoring and judging

What is the best release time of Trichogramma?



Monitoring and judging

What is the best release time of Trichogramma?



Trichogramma breeding and deployment

Incubators
Trichogramma



Cooling
chambers



Manufacturing
process



Production steps of
OptiKugel



Pilot and field management via digital platform

How digitalisation and sustainable/organic crop protection come together



Piloten einblenden

Filter: Alle | Neue Filter | Filter in Bearbeitung | Überlege Filter | Filter ohne Zusammenfassung

Bitte auswählen: Piloten-Simon, x | Bitte auswählen: Status | Bitte auswählen: Produkt | Bitte auswählen: Freilassungsgebiet | Höhe: 0 m | 0

Filter anwenden | Filter zurücksetzen

Filter nach Piloten zusammen | Zuweisung entfernen | Status ändern | Löschen

Zeige 10 Einträge | Anzahl 1 | Fläche: 1,07ha

<input type="checkbox"/>	Kunde	Fläche	Form	Produkt	Freilassung	Status	Zuweisung	Fläche	Höhe	Startzeit	Endzeit
<input type="checkbox"/>	Piloten-Simon	3225	1537	Kaplanweidung Dr.	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	540,00m	4,90m	12.04.2023 09:17	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1538	Kaplanweidung Dr.	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	311,00m	1,07m	14.04.2023 09:05	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1539	Kaplanweidung Dr.	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	321,00m	1,19m	12.04.2023 10:40	28.04.2023 14:45
<input checked="" type="checkbox"/>	Piloten-Simon	3225	1540	Kaplanweidung Dr.	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	476,00m	1,07m	14.04.2023 09:49	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1541	Kaplanweidung Dr.	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	351,00m	1,07m	14.04.2023 09:54	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1538	Schmidhaus	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	397,00m	0,20m	14.04.2023 09:59	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1539	Silte	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	524,00m	1,19m	12.04.2023 09:14	28.04.2023 14:45
<input type="checkbox"/>	Piloten-Simon	3225	1539	Silte	Desant OH, Auser SE und VO	Freigegeben	Sen,Lauf	438,00m	1,27m	14.04.2023 09:02	28.04.2023 14:45

Seite 1 / 1 | Ergebnisse pro Seite: 10 | Ergebnisse gesamt: 8



Plant protection with beneficial insects

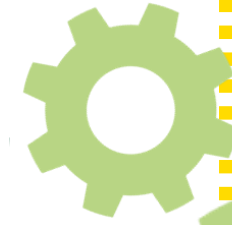
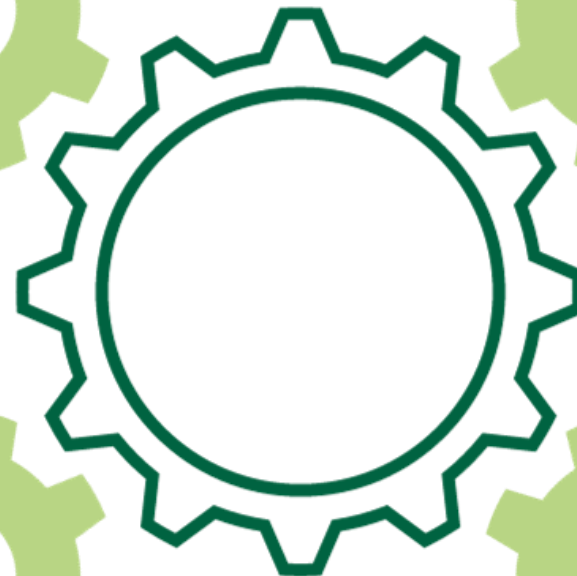
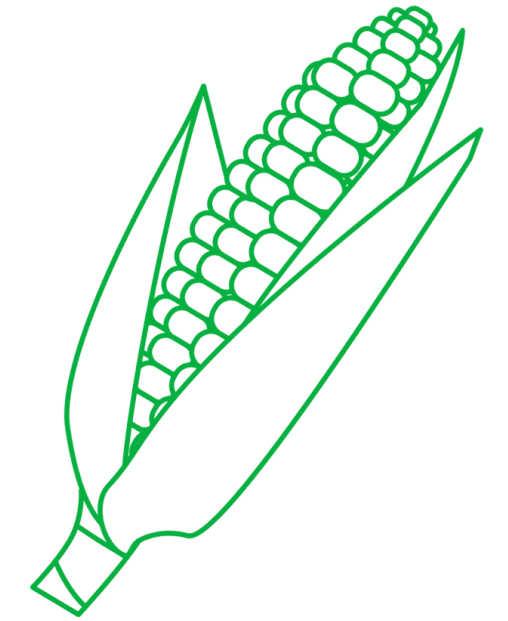
Example of the European corn borer and *Trichogramma ichneumon* flies





**time-saving
& efficient**

**no formation
of resistance**



**gentle on
the soil**

**user protection
& bee-friendly**





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Service & Bioprotect