

# Biocontrol usage in my farm

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# My Farm

**Conventional farming**

**350 ha**

**Loamy – Clay soil**

**Crops : Wheat / Sugar Beet / Potatoes / Maize / Rapeseed/  
Barley /Beans**

# Biocontrol history in my farm

**80's : Sugar Beet & Sulfur**

**90's : Corn & *Trichogramma***

**2000 : Rapeseed / Wheat & Ferric Phosphate**

**2010 :**

**Wheat & Seaweed**

**Rapeseed & *Bacillus pumilus***

**2020 : Rhapsody & potatoes ?**

# Sulfur – Sugar Beet



**Disease** : Powdery Mildew (Oïdium)

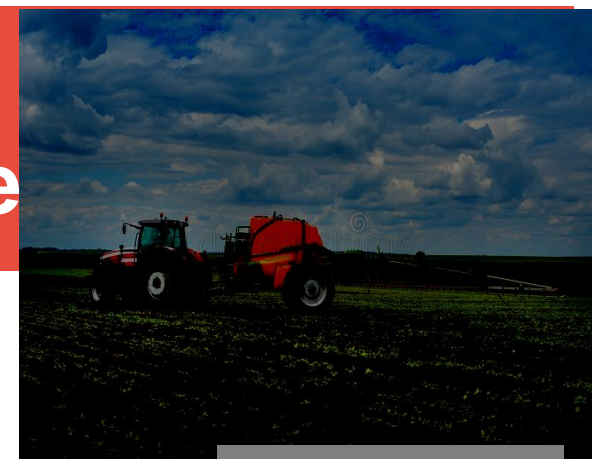
**Biocontrol Solution** : Sulfur



**Natural Fungicide**



# Technical / Economical point of view



## Stage : crop coverage (July)

	Chemical	Biocontrol
Product	Spyrale (Difénoconazole/ Fenpropidin)  Optisoufre (fertilizer)	Microthiol special disperss (800g/kg of sulfur)
Using	7L/ha Optisoufre 0,9L/Ha Spyrale	7kg/Ha Microthiol 0,9L/Ha Spyrale
Cost	<b>59€/Ha</b>	<b>44€/Ha</b>



**Sulfur Fertilizer not  
registered as biocontro**

**Avoid fungus  
resistances  
development**

# Corn - *Trichogramma*

**Pest :** Moth Larva

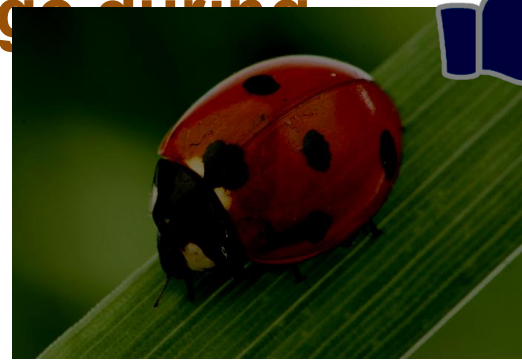
**Biocontrol Solution :**

*Trichogramma* (egg-parasite, Hymenoptera)

**Selective management and beneficials protection**

~~application~~

No crop damage during



# Technical / Economical point of view

**Stages : 6 leafs**

**Timing : 10 ha / 3 peoples / 1 hour**



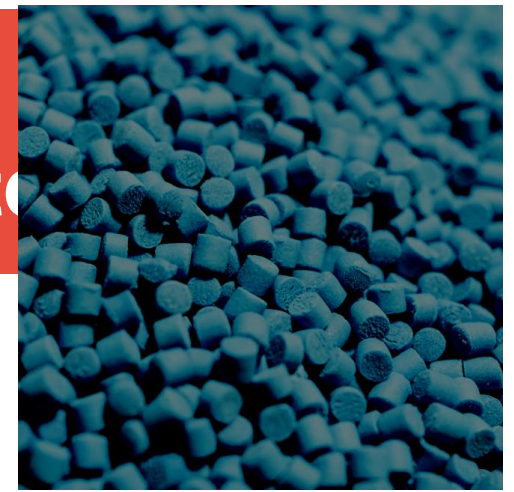
	Biocontrol	Chemical
Commercial Brand	Bio - Logic (Trichogramma)	Coragen (Chlorantraniliprole)
Using	1	0,125 L
Cost	<b>32 €/Ha</b>	37 €/Ha



**Storage : Maximum 48h to cold**

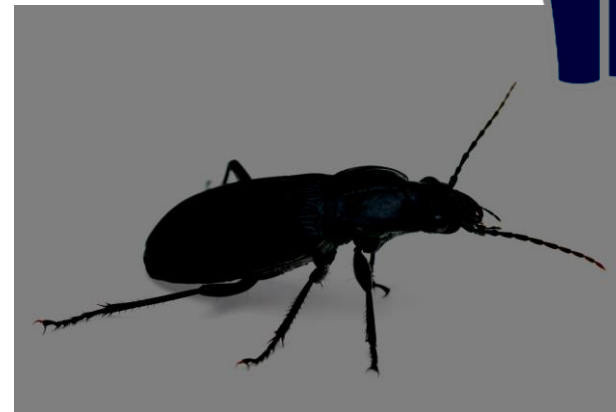
**Indirect Cost : Workforce**

# Rapeseed / Wheat - Ferric Phosphate



**Pest** : Slug

**Biocontrol Solution** : Ferric Phosphate





# Technical / Economical point of view



## Stages : Sowing – Post sowing

	Biocontrol	Chemical
Commercial Brand	Sluxx	Metarex
Using	5 Kg/Ha	4 Kg/ha
Cost	<b>19,8 €/Ha</b>	<b>19,2 €/Ha</b>

# Seaweed – Wheat & Barley

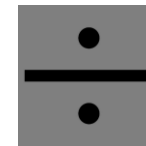


**Diseases : Septoria & Rust**

**Biocontrol Solution : Laminarine**



**Quantity**



**2**

# Technical / Economical point of view

**Stage : Ears of wheat 1 cm**

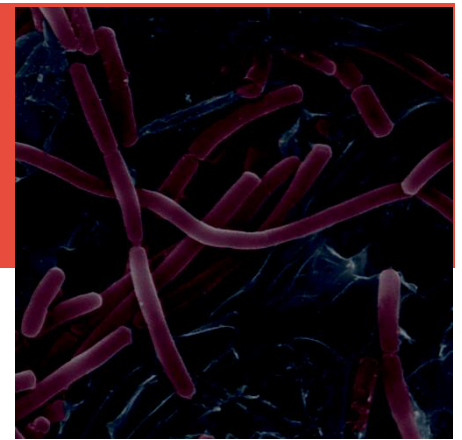
	Biocontrol	Chemical
Commercial Brand	Vacciplant (Laminarine)	Kromatic (prochloraze/Tebuconazole/fenpropidin)
Using	0,5L Vacciplant + 0,6L Kromatic	1,2L Kromatic
Cost	<b>24€/Ha</b>	<b>28€/Ha</b>



**Only resistant variety**

**Loosing curative effect**

# Bacillus Pumilus - Rapeseed

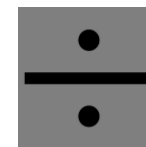


**Disease** : Sclerotinia

**Biocontrol Solution** : *Bacillus pumilus*



Quantity



2

# Technical / Economical point of view



## Stage : Flowering

	Biocontrol	Chemical
Commercial Brand	Ballad ( <i>Bacillus pumilus</i> )	Propulse
Using	1L/Ha Ballad 0,5L/Ha Overdyn	0,8L/Ha
Cost	<b>38€/Ha</b>	<b>39€/Ha</b>

# Limits of biocontrol

**Too little biocontrol solutions available**

**Less security of success than chemicals**

# Motivation

**To decrease using chemicals product**

**To get new certification**

**for example : High Environmental Value – Level 3**

**To adapt the farm to the new legislation – No chemicals close to habitations**