

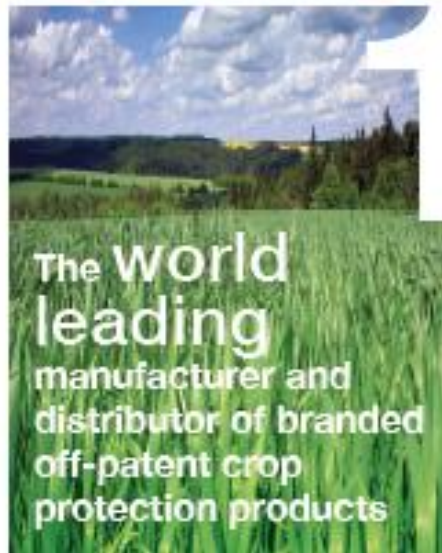
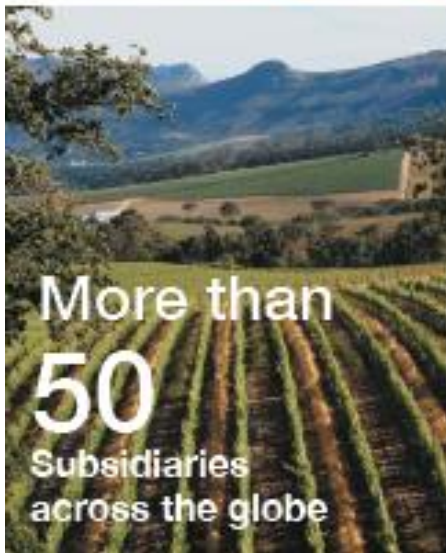


# Late Blight Management in Potatoes, Israel

**Daphna Blachinsky**  
**MA-Industries**



# MAI - Who we are



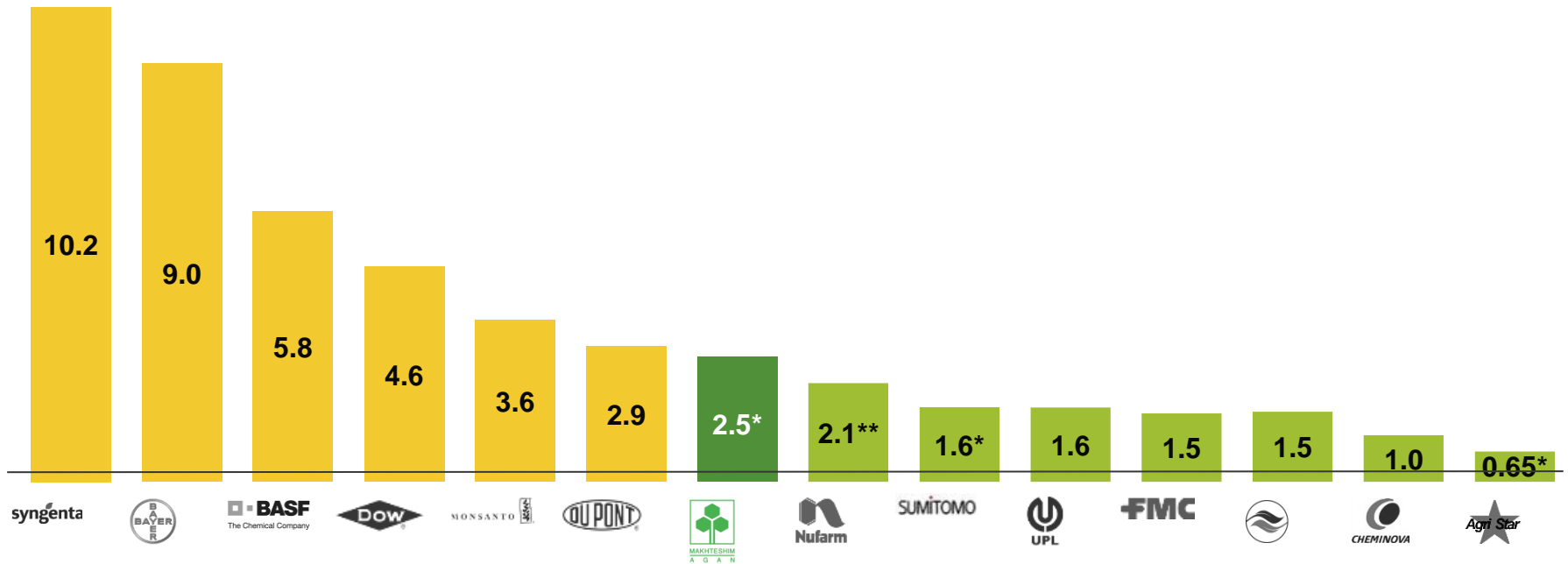


# The Seventh Largest Company in the Overall Industry



2011 Agrochemical sales, \$ billion (excluding seeds and traits)

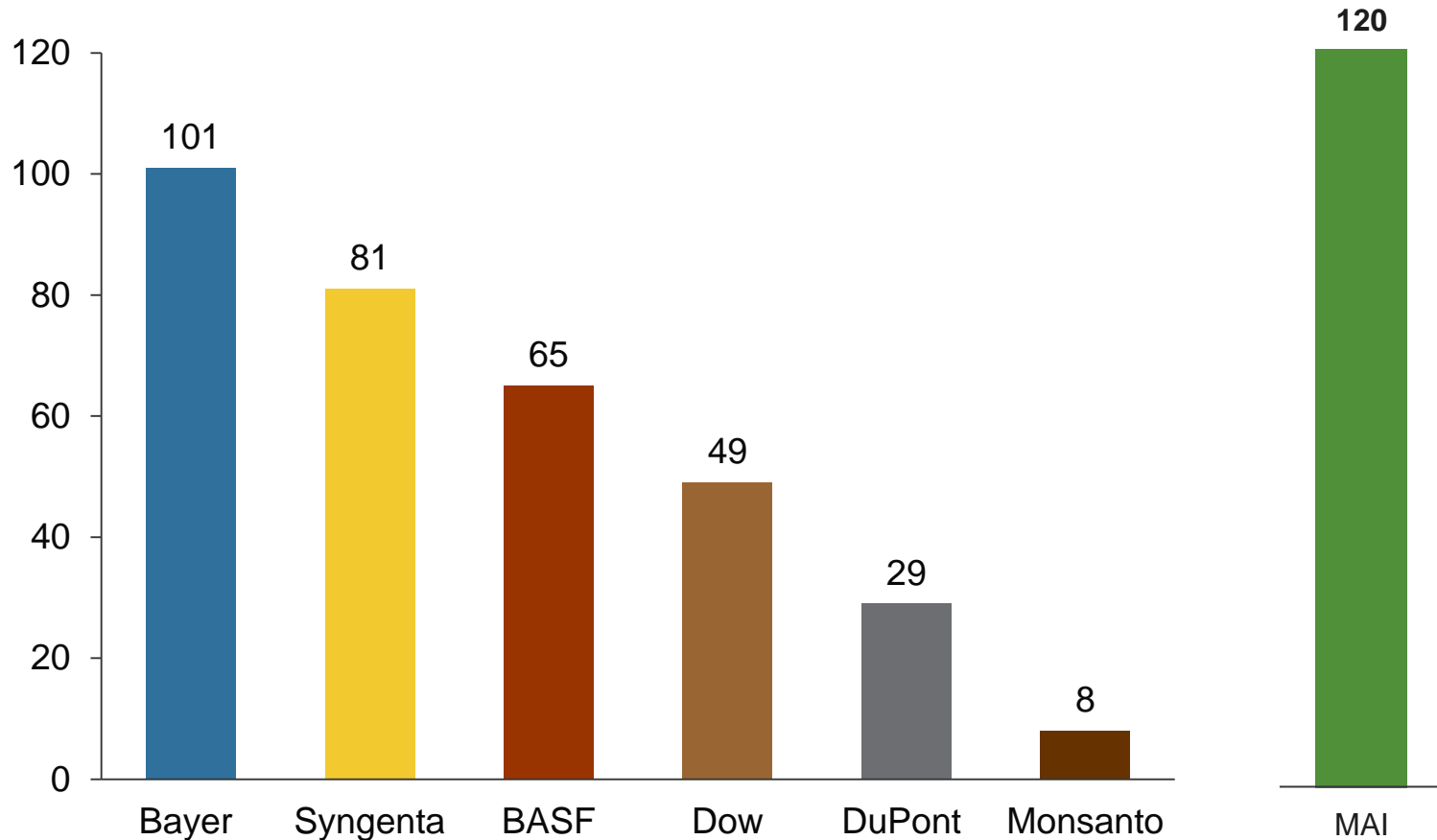
- Large Scale RBC
- Off patent



\*\$0.2 billion of non-agro sales  
\*\*2010 results, \*\* Non-Agro Sales  
Source: MAI Analysis



# One of the Broadest Product Portfolios in the Industry



RBC's Active Ingredient:  
By Phillips McDougal



# Potato Late Blight Management, Israel

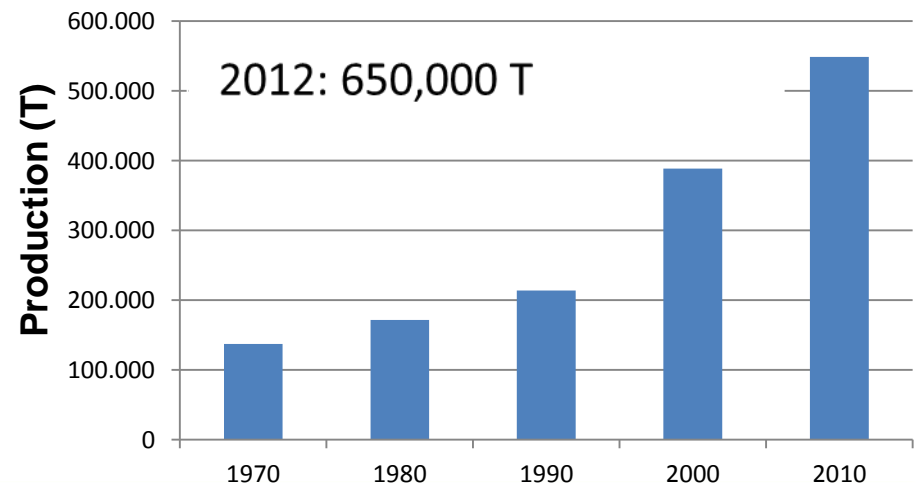


# Potato Production in Israel

The potato is considered one of the major crops for consumption.

Consumption of potatoes in Israel, has been increasing steadily.

Along with the consumption, the production of potatoes has also been increasing.





# Production Areas in Israel



## Total of 18,000 ha (2012)

1. Hula valley - peat soil
2. Sharon - sandy red soil
- 3-5. Negev region – sandy to medium heavy soil (>80% of total production)
6. Arava desert - medium heavy soil with saline water (winter crop only)





# Growing Seasons

	Autumn	Spring
Origin of tubers	Israel (local)	UK, NL, FR, DE
Planting	September - November	December - April
Harvest	December - February	May - June
Growth areas	North – 5%	
	<b>Negev – 70%</b>	<b>Negev - 94%</b>
	Central – 25%	Central – 6%
Consumption	Export	Seeds (for following season)
	Local market	Local market
	Industry	Industry





# Growing Seasons

## Autumn

- Days getting shorter
- Slow growth rate
- Longer season
- Lower plant vigor
- Senescence leave

## Spring

- Days getting longer
- High growth rate
- Shorter season
- Strong plant vigor
- Young canopy

Environmental trigger(autumn and spring): Rains + fog + irrigation  
+dew



**Early Blight + Late Blight**



**Late Blight**



# Fungicide Used to Control Late Blight

- **Protectants**
  - Mancozeb
  - Chlorothalonil
- **“Super protectants” – translaminar**
  - Dimethomorph
  - Bentiavalicarb Isopropil
  - Mandipropamid
  - Propamocarb -HCL
- **Curative - systemic**
  - Mefenoxam (Metalaxyl)
  - Cymoxanil





# Late Blight Monitoring and Control

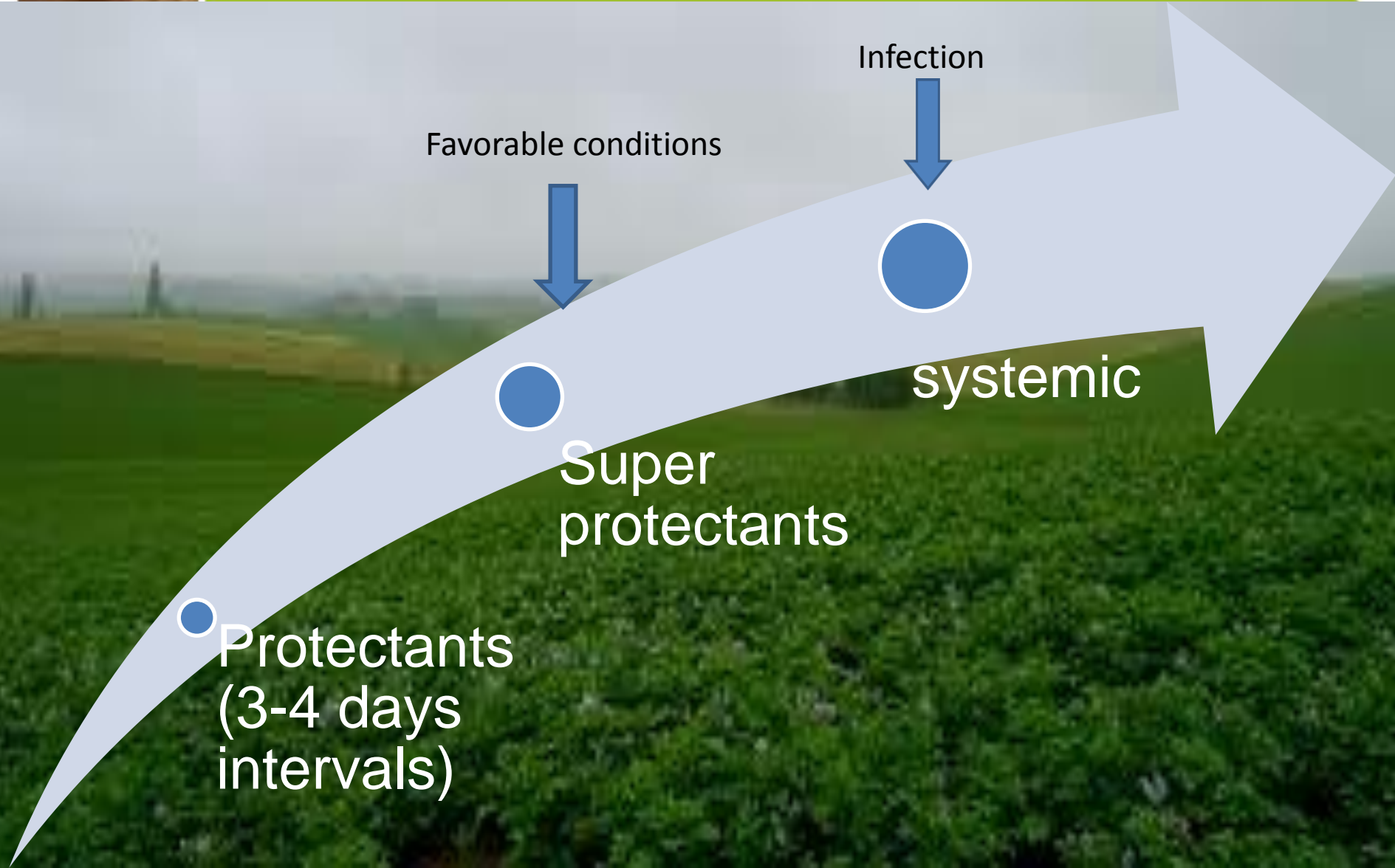
**Monitoring is done on daily basis – searching for new late blight spots**

- At ~70% emergence: protectants (Mz, Chlorothalonil) every 3-4 days (after each irrigation).
- At favorable conditions (foggy days, rain) – “super protectants” (+ Mz)
- At infection – Metalaxyl (+Mz)
  - A sample is sent to Prof. Yigal Cohen (Bar-Ilan university) for resistance monitoring
  - Results are reported to “Yacham” (potato growers cooperative) and delivered back to the growers (2-3 days).
- ✓ In case of infection with Metalaxyl resistance - super protectants.





# Late Blight Control



Favorable conditions

Infection



Protectants  
(3-4 days  
intervals)

Super  
protectants

systemic



# 2012 Potato Disease Control

Data from 15,000 ha

**Protectants: ~15 sprays**

**Translaminar (“super protectants”): 2 - 4 sprays**

**Systemic fungicides: 1 spray**



**Fungicide value (early + late blight)**

**328\$ / ha**



# Banjo Forte 400 SC

(Fluazinam 200 g/L + Dimethomorph 200 g/L)





# Banjo Forte Activity

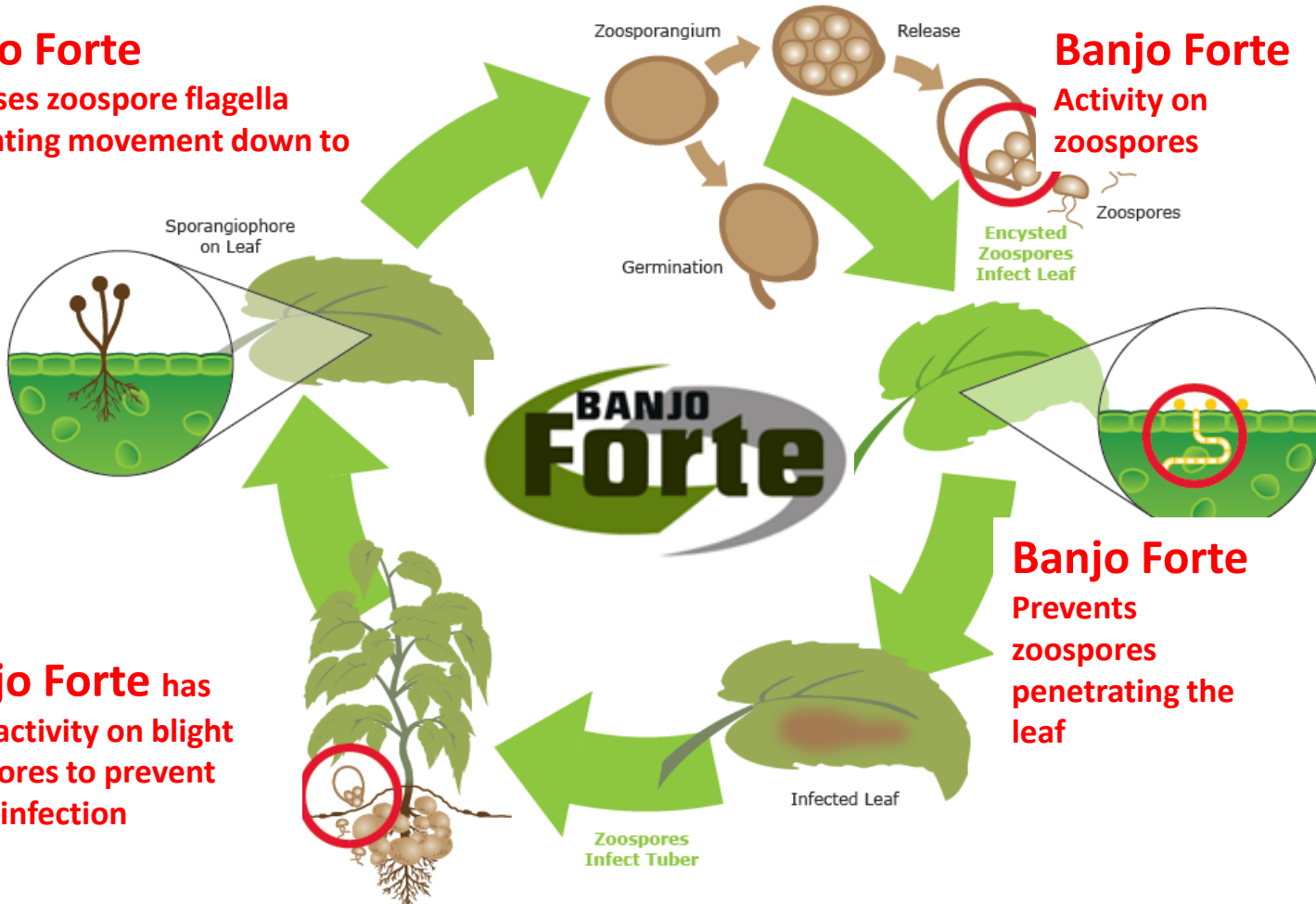
**Banjo Forte**  
paralyses zoospore flagella  
preventing movement down to  
tubers

**Banjo Forte**  
Activity on  
zoospores

Encysted  
Zoospores  
Infect Leaf

**Banjo Forte**  
Prevents  
zoospores  
penetrating the  
leaf

**Banjo Forte** has  
good activity on blight  
zoospores to prevent  
tuber infection





## Technical information



- Trade Name: Banjo Forte, Hubble
- Registered: UK, Belgium, Germany, Netherlands, Sweden, Poland
- Ratio: 200:200 g/L – Fluazinam : Dimethomorph
- Disease spectrum: Late blight , Sclerotinia, Alternaria (side affect)
- Labelled Crop: Potato
- Max Individual Dose: 0.75-1L/ha
- Maximum **4** applications per season
- Application timing: As soon as conditions favour the disease (7-10 day intervals – high pressure)
- Harvest interval:7 days before harvest