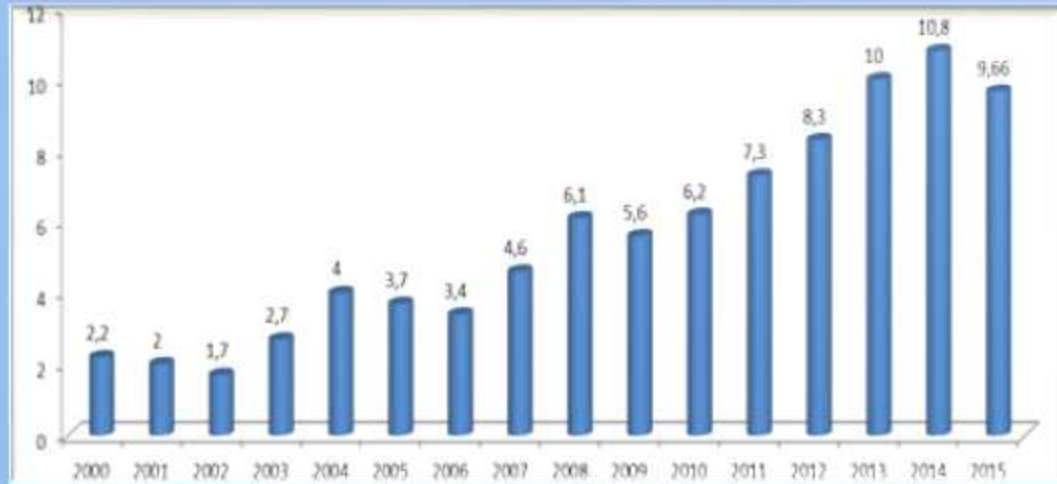




Doing things better!

Crop Protection Brazilian market evolution 2000 - 2015

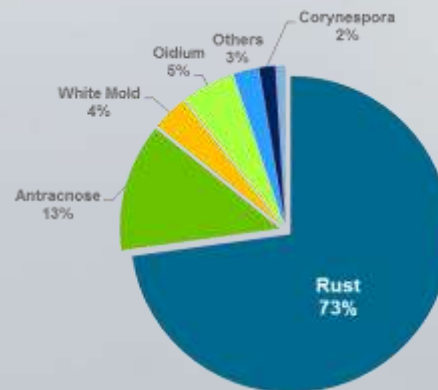
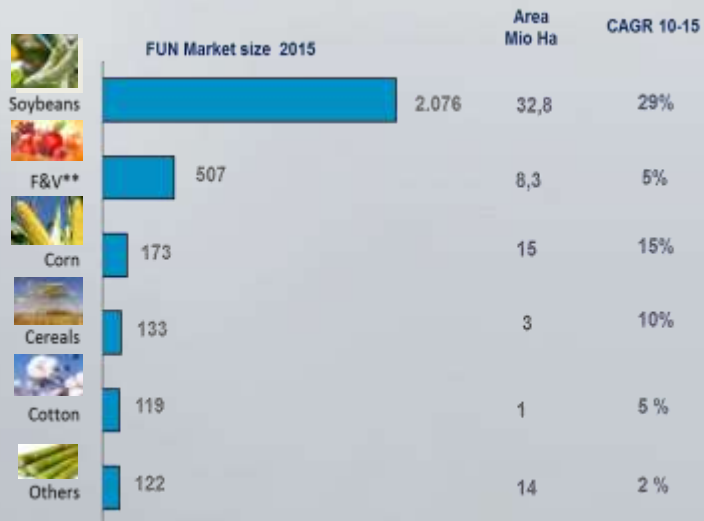


- **Strong market growth after soybean rust appearance in Brazil, 2003/2004 season massively**



Crop Protection Brazilian market size

Major fungicides markets by crop – M USD



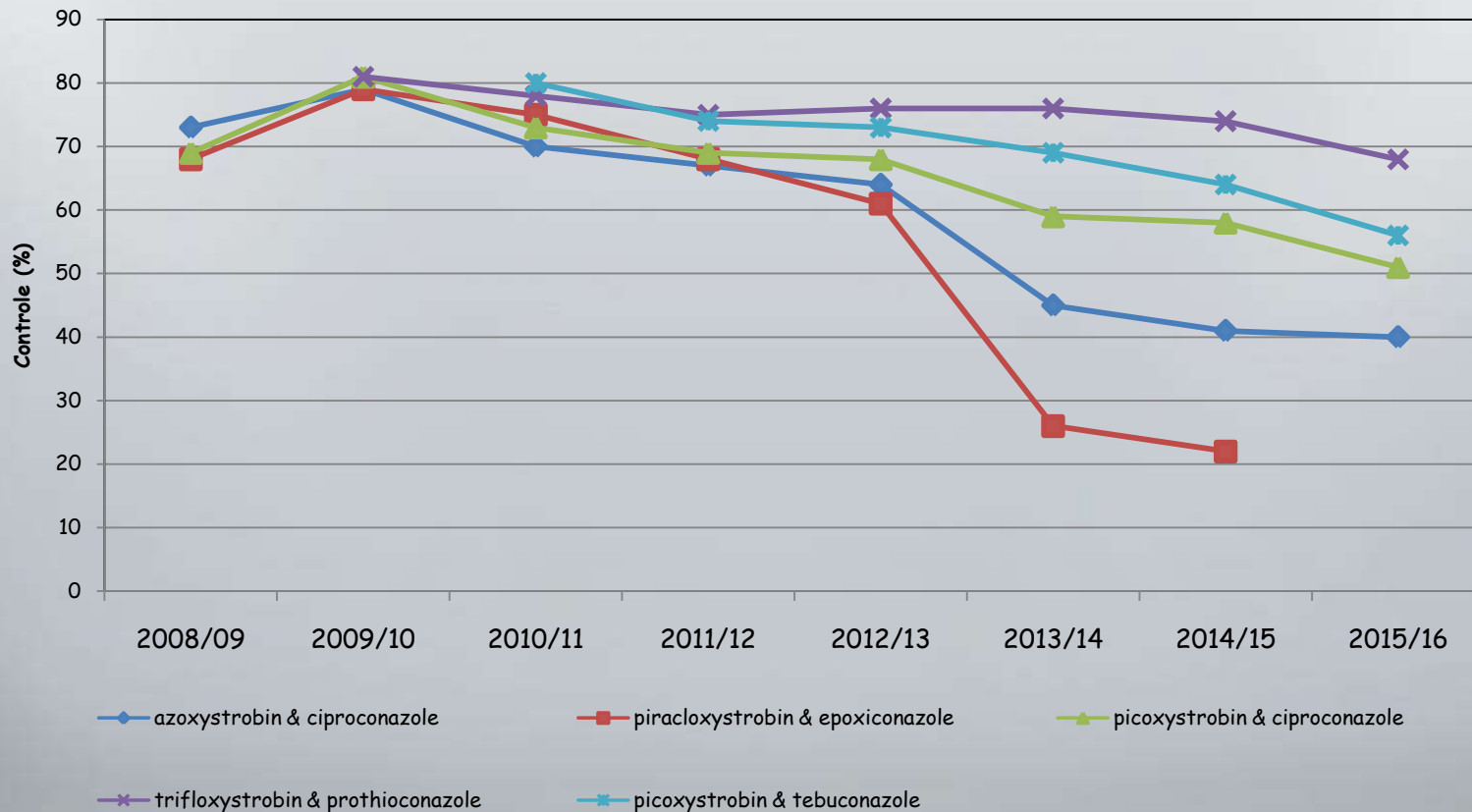
Soybeans key Fungal diseases

- Soybeans larger crop and 66% of relevant crops for fungicides
- Rust 73% of Soybeans fungicide market

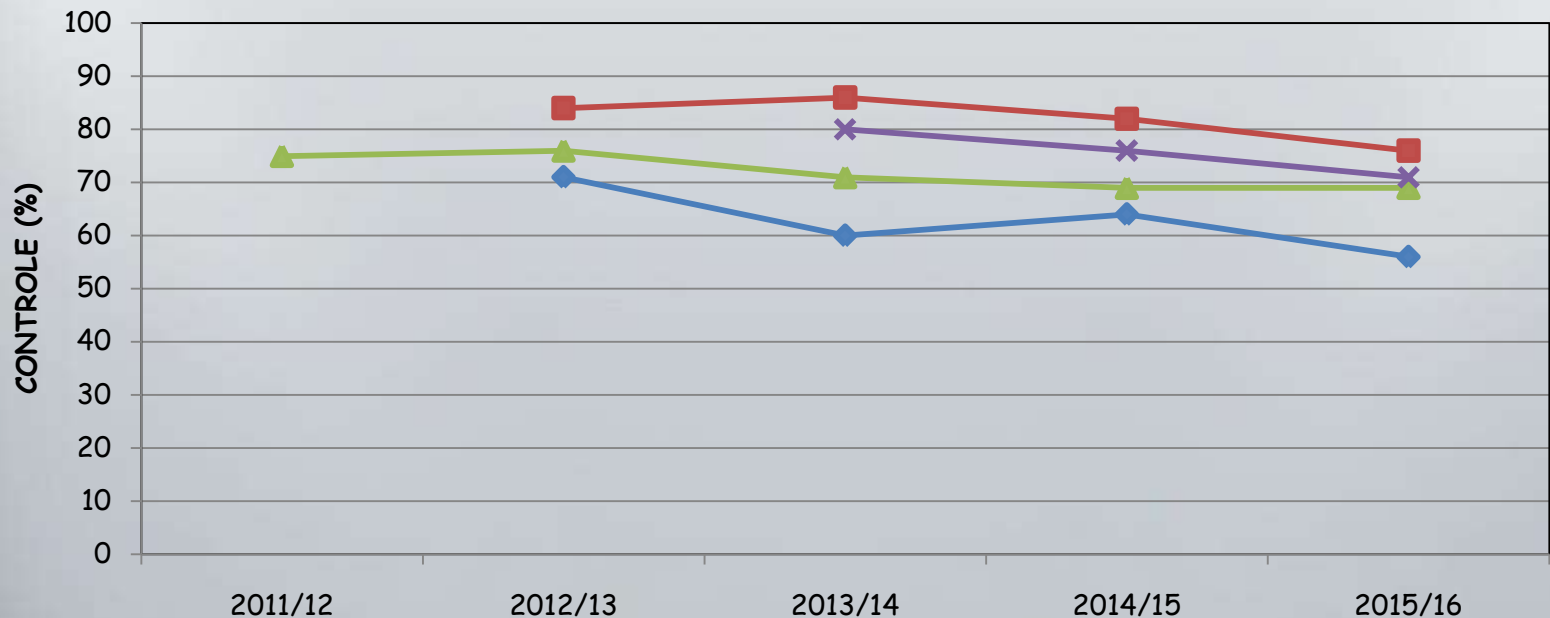
Fungicide Market – assumptions from 2010 to 2020

- Increase of soybean area (+ 12 Mio Ha)
- Intensive tropical agriculture leads to dramatically increasing diseases pressure
- Growing importance of “Secondary Diseases” in Soybeans e.g. Target spot , Anthracnosis ...
- Increasing demand for quality and low residues in fruits & vegetables
- Increasing technology adoption in Corn, Cotton and other crops like Sugar Cane

Fungicides performance from 2008 – 2016 – Ring trials results for soybean rust control / EMBRAPA



Fungicides performance from 2008 – 2016 – Ring trials results for soybean rust control / EMBRAPA



◆ py+flu¹

■ az+ben²

▲ py+flu+epz³

✕ tr+bix+ptz⁴

1 – piraclostrobin & fluxapyroxad

2 – benzovindiflupyr & azoxystrobin

3 – piraclostrobin & fluxapyroxad & epoxiconazole

4 – trifloxystrobin & bixafen & prothiococonazole

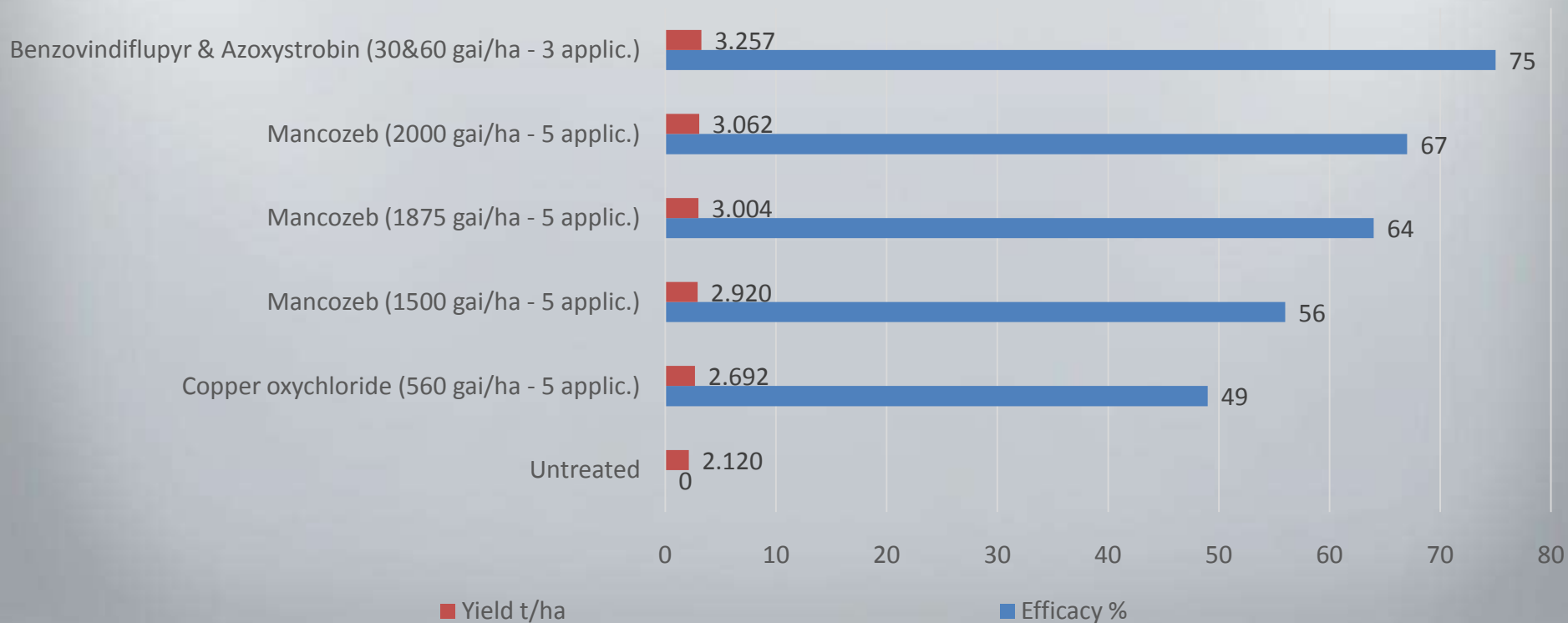
Fungicides Brazilian market assumptions

- Soybeans larger crop (~ 34 Mio ha) and 66% of relevant crops for fungicides – in a tropical country!
- There is no new mode of action for Soybean Rust control coming for the next 6 years, at least
- Erosion of efficacy of DMI´s since 2008 – CYP51 mutation confirmed (there are different response for each DMI)
- F129L mutation confirmed (2014) for the QoI´s
- SDHI are very specific for diseases control, for soybean rust control, benzovindiflupyr still works well, but must be protected
- **What is the importance of protectant fungicides on this scenario?**

Protectant Fungicides performance season 2015/16 – Ring trials results for soybean rust control / EMBRAPA

Average of 22 field trials

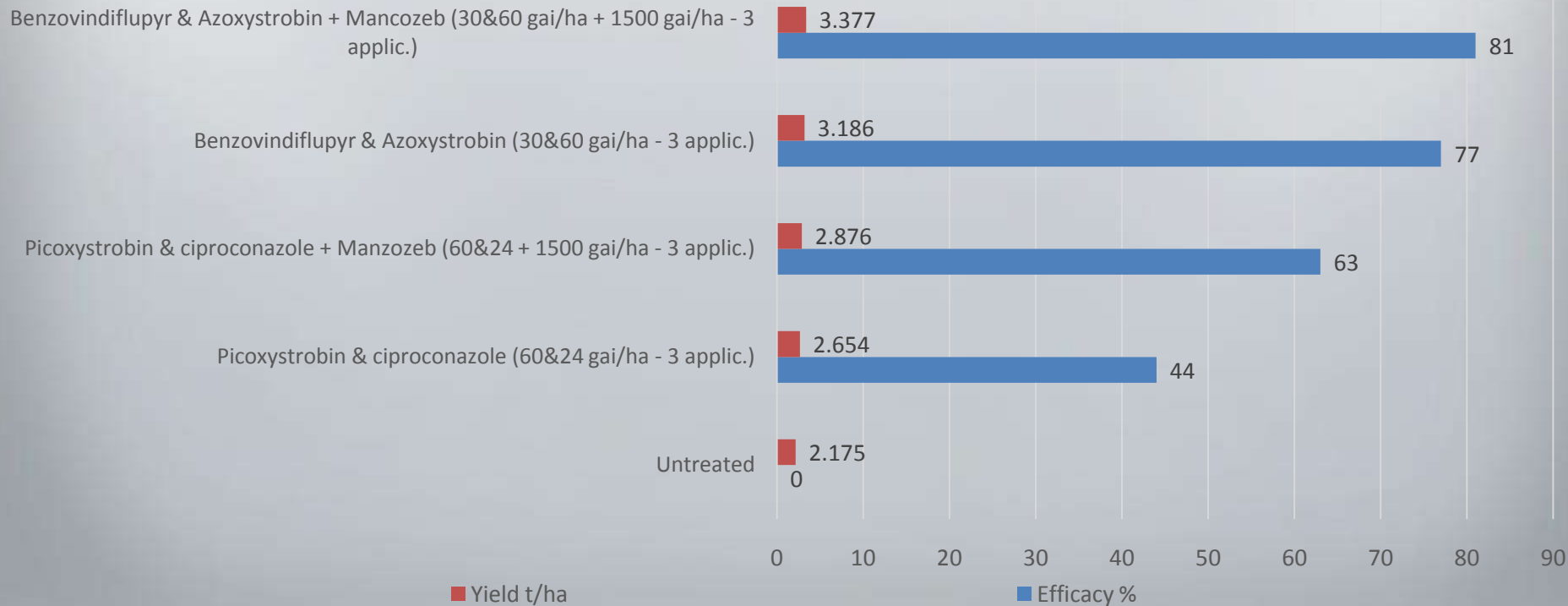
Protectant Fungicides - 22 trials - Soybean rust efficacy % / Yield t/ha



Protectant Fungicides performance season 2015/16 – Ring trials results for soybean rust control / EMBRAPA

Average of 20 (efficacy) / 21 (yield)

Protectant Fungicides in combination with specific MoA - 20 trials - Soybean rust efficacy % / Yield t/ha



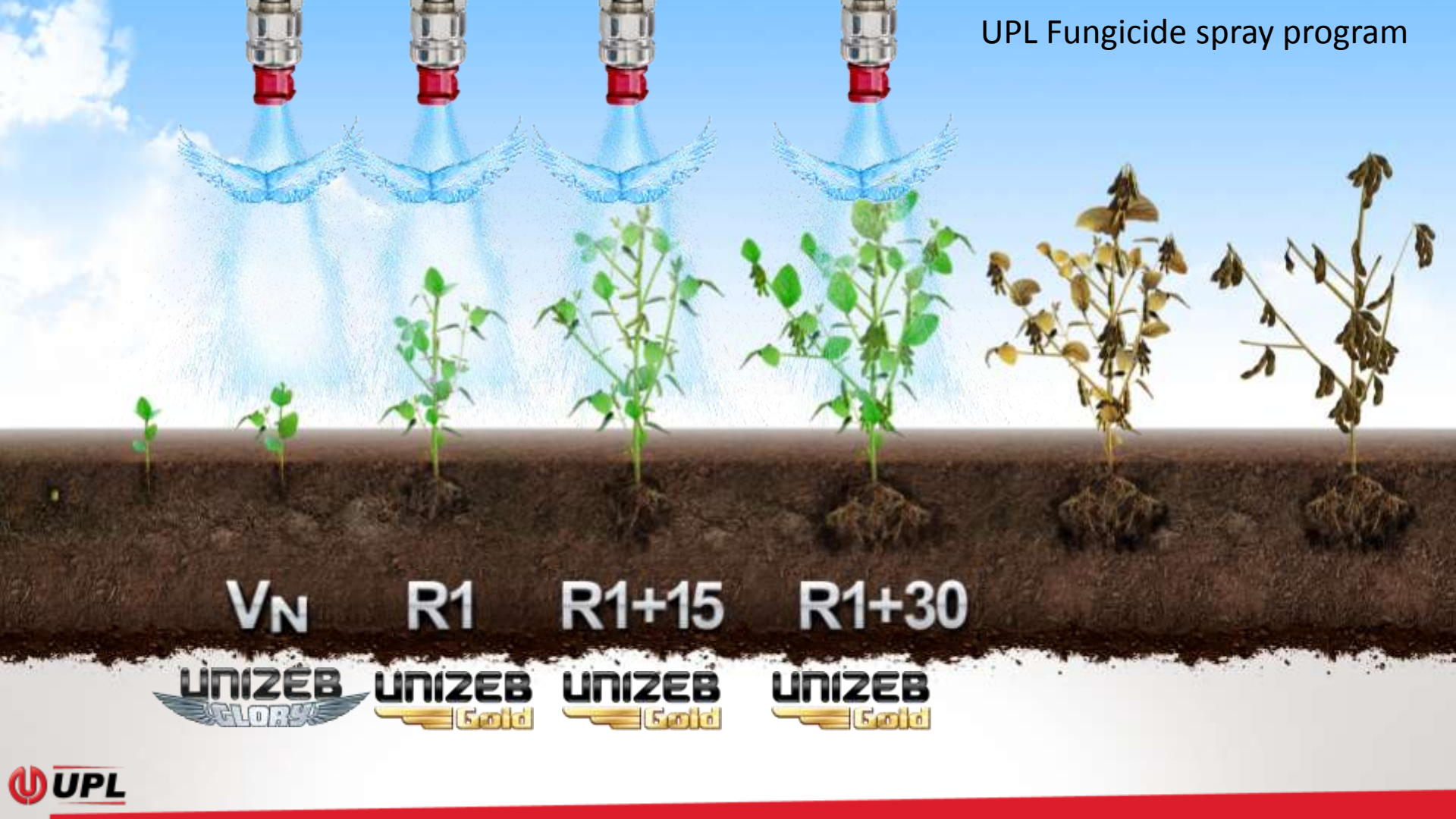
FRAC – Comitê de ação de resistência de fungos a fungicidas

Recomendação de monitoramento segundo o risco de resistência



- Recommended ●
- Recommended ●
- Recommended ●
- Some Monitoring Advisable ●
- Not Necessary ●

After Brent & Hollomon (2007) modified



VN

R1

R1+15

R1+30

UNIZEB
GLORY

UNIZEB
Gold

UNIZEB
Gold

UNIZEB
Gold



Doing things better!

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