

Imazalil and alternatives

Aqueous application research

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- 🍊 2018 request for lowering of EU MRL's for IMZ
 - 🍊 Resulted in a review - a gap in the toxicology dossier was discovered (metabolites of IMZ)
- 🍊 Janssen is well on track to submit the data within the timeframe they were given, which is early 2022
 - 🍊 IMZ use on citrus has been revised - resulted in new MRL's we have had since early 2020
- 🍊 Closure of data gap will mean that use of IMZ will stand as is, until 2029

- 🍊 Launched in 2019 to investigate possible IMZ alternatives for use against *Penicillium* moulds
 - 🍊 Co-funded by PHI
- 🍊 All available registered fungicides
 - 🍊 Azoxystrobin (Azo), Fludioxonil (Flu), Ortho phenyl phenate (OPP), Pyrimethanil (PYR), Thiabendazole (TBZ)
- 🍊 Compared with IMZ and H₂O- Controls
- 🍊 Curative ability and sporulation inhibition – Dip trials
 - 🍊 Time after infection
 - 🍊 Solution temperature
 - 🍊 Residue

- 🍊 Green mould, *Penicillium digitatum*
- 🍊 Inoculations
 - 🍊 Curative and sporulation

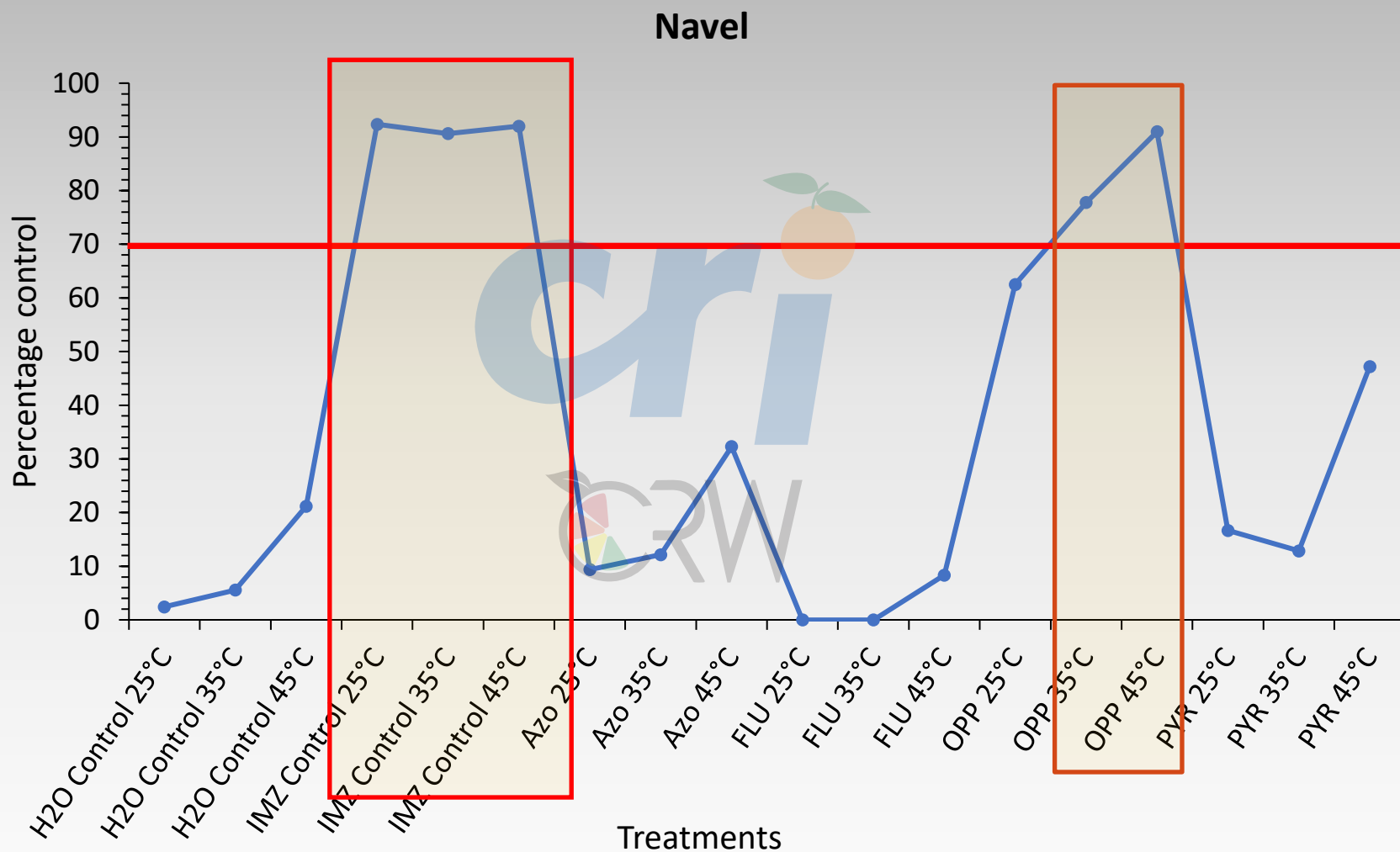


- 🍊 25°C, 35°C, 45°C
 - 🍊 8 hr, 12 hr, 18 hr, 24 hr
- 🍊 35°C
 - 🍊 8 hr
- 🍊 Fruit were incubated at 25°C until 80% rot was observed on control fruit (3-5 days).

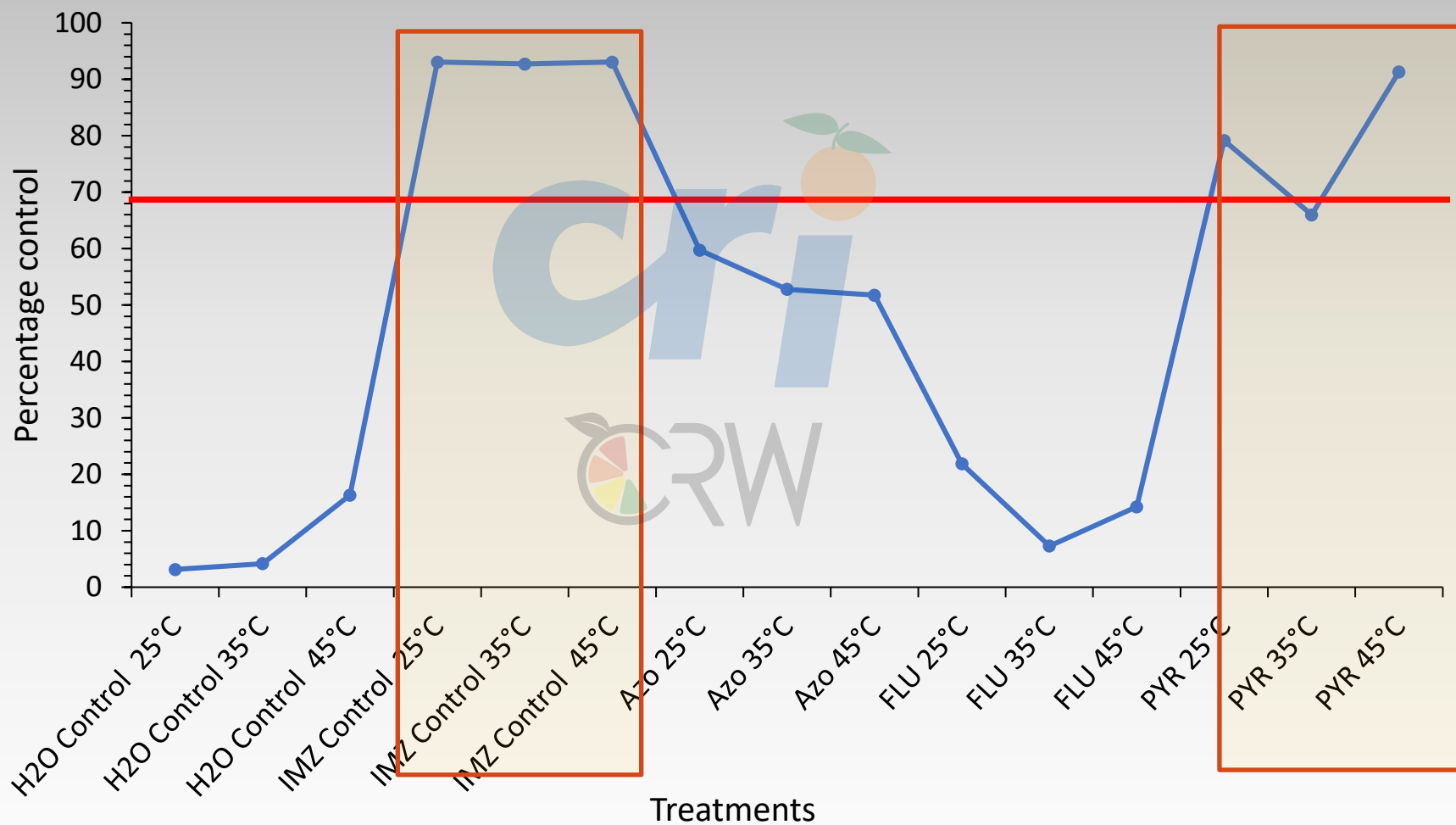


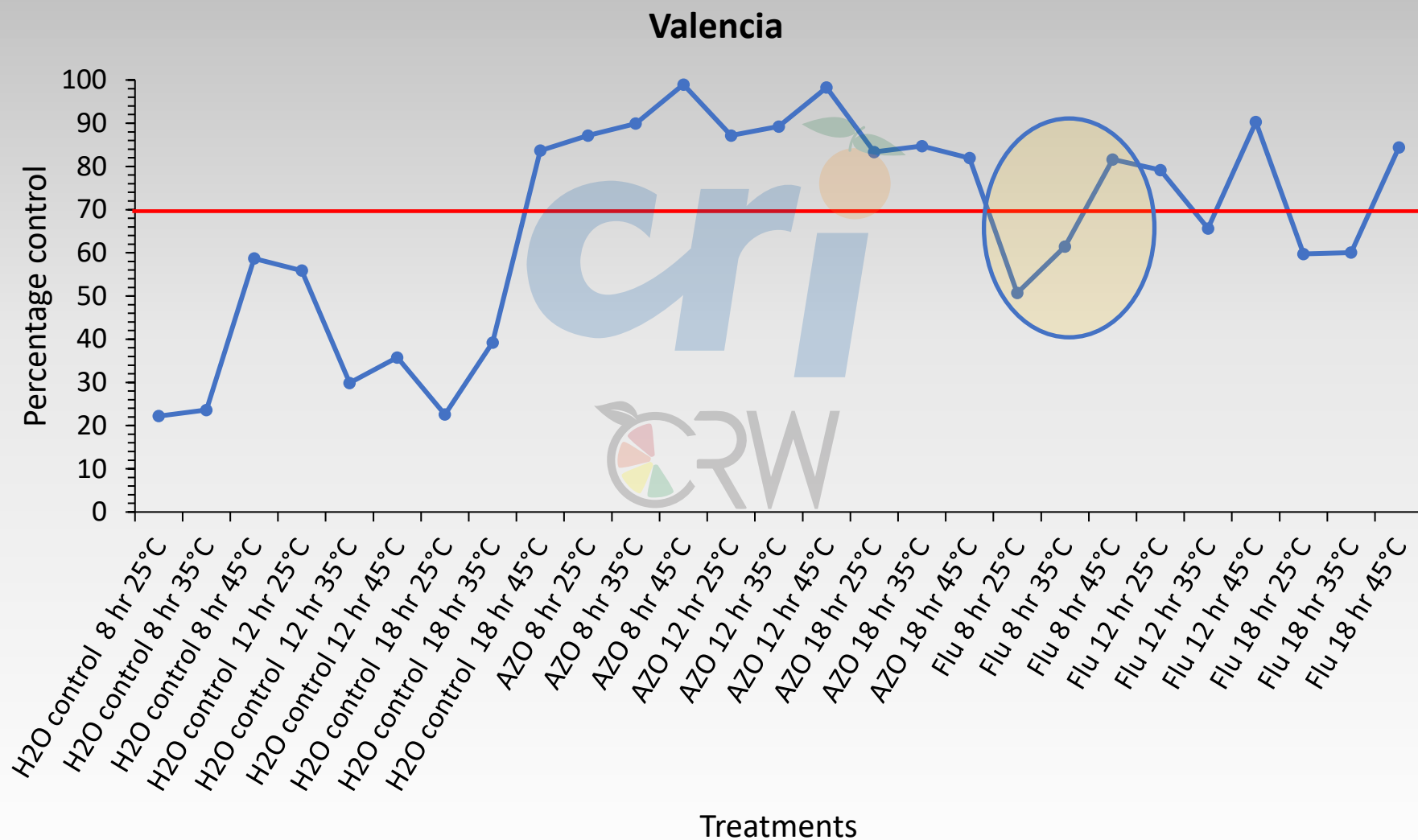
- 🍊 Presence of infection
- 🍊 Subjective to rating 1-6
 - 🍊 1= absence of green or grey spores

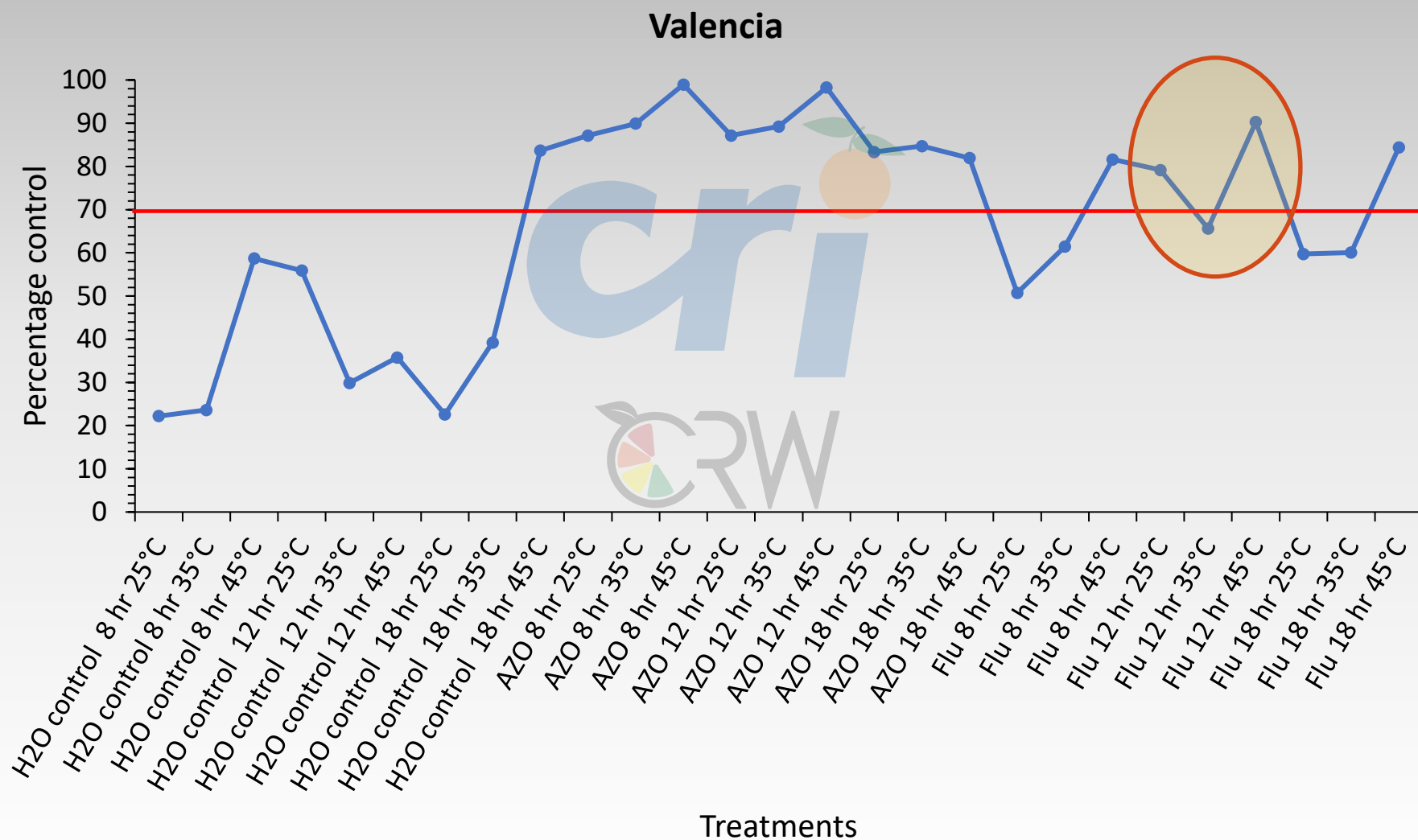


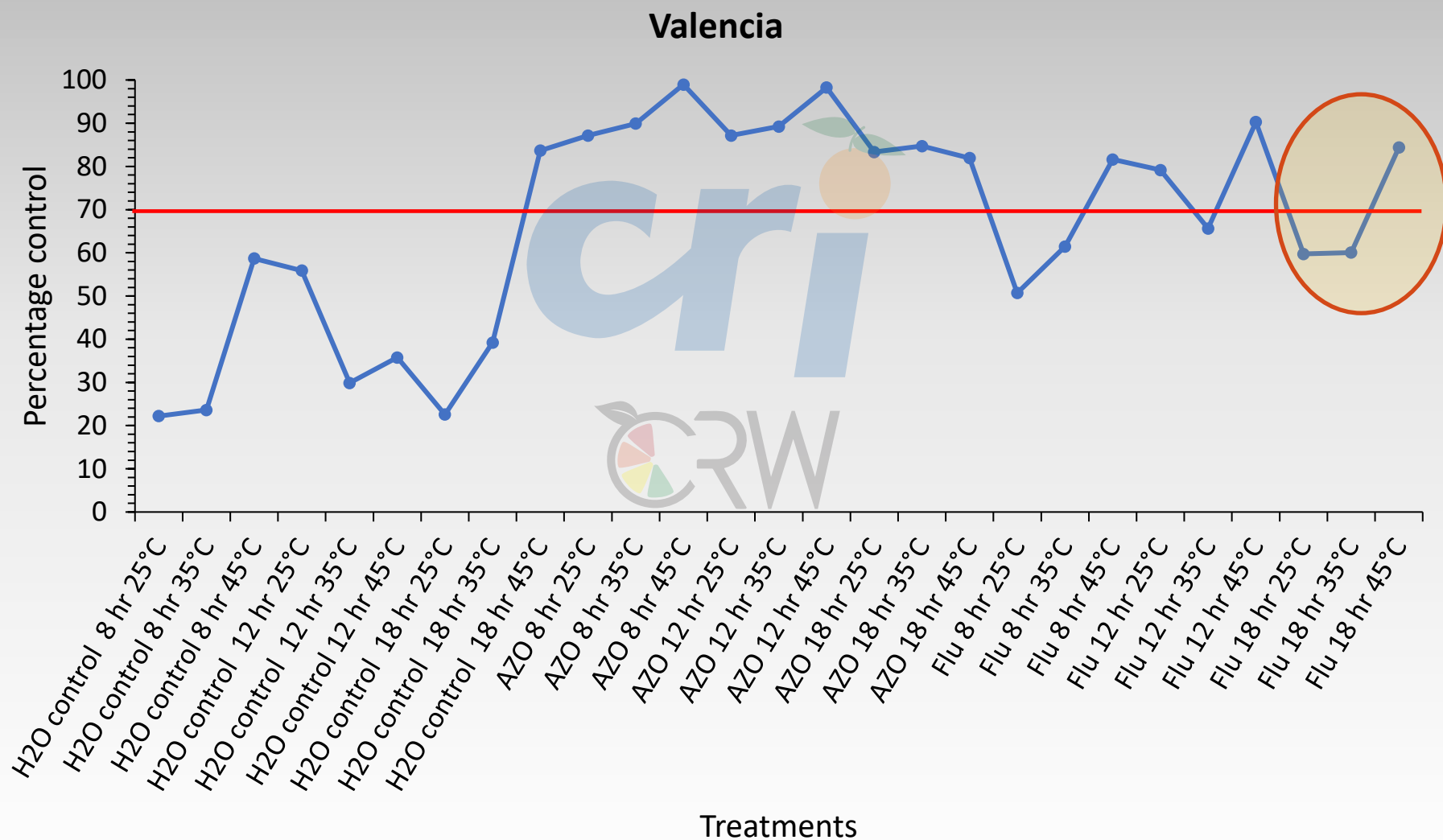


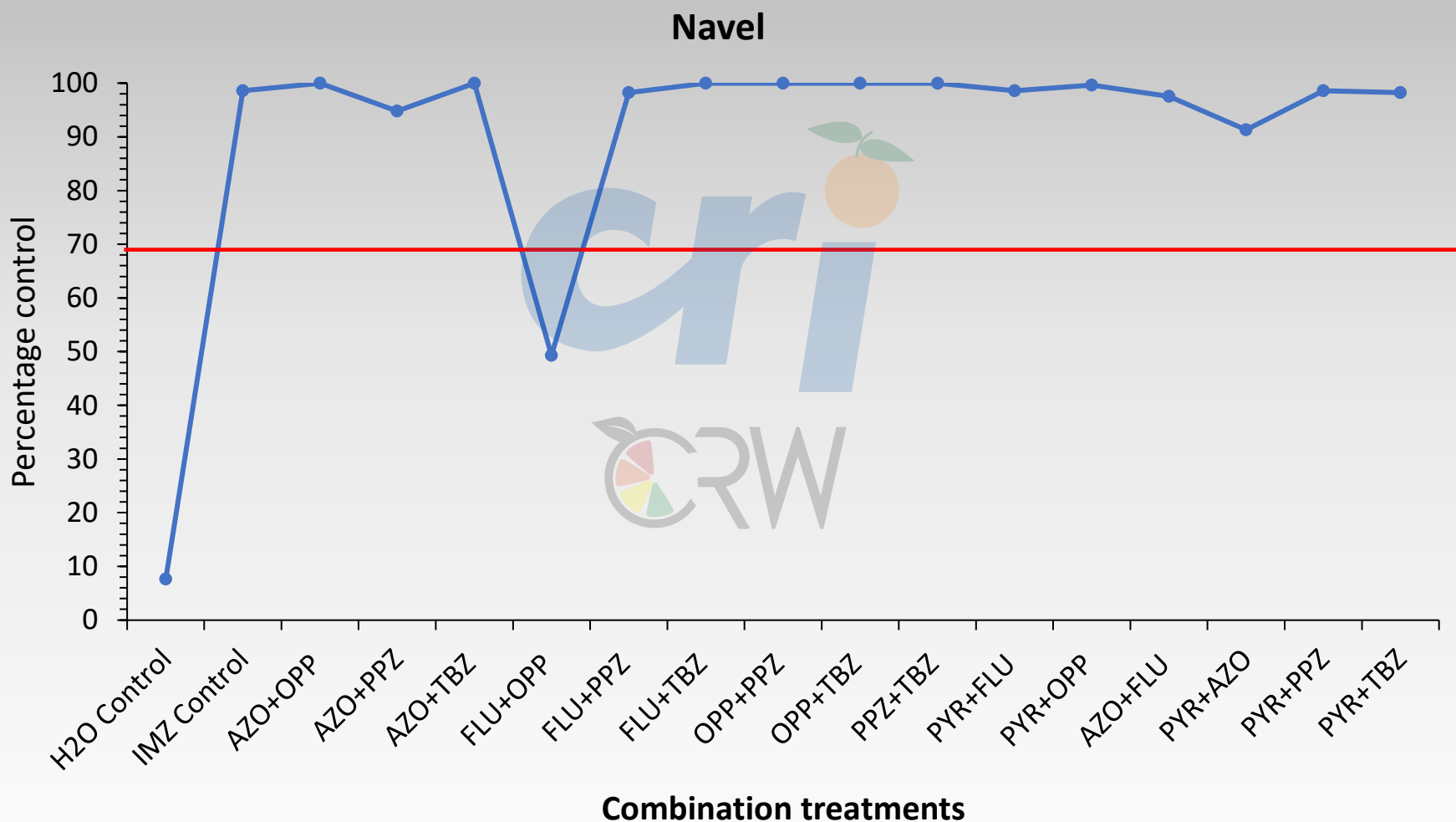
Lemon

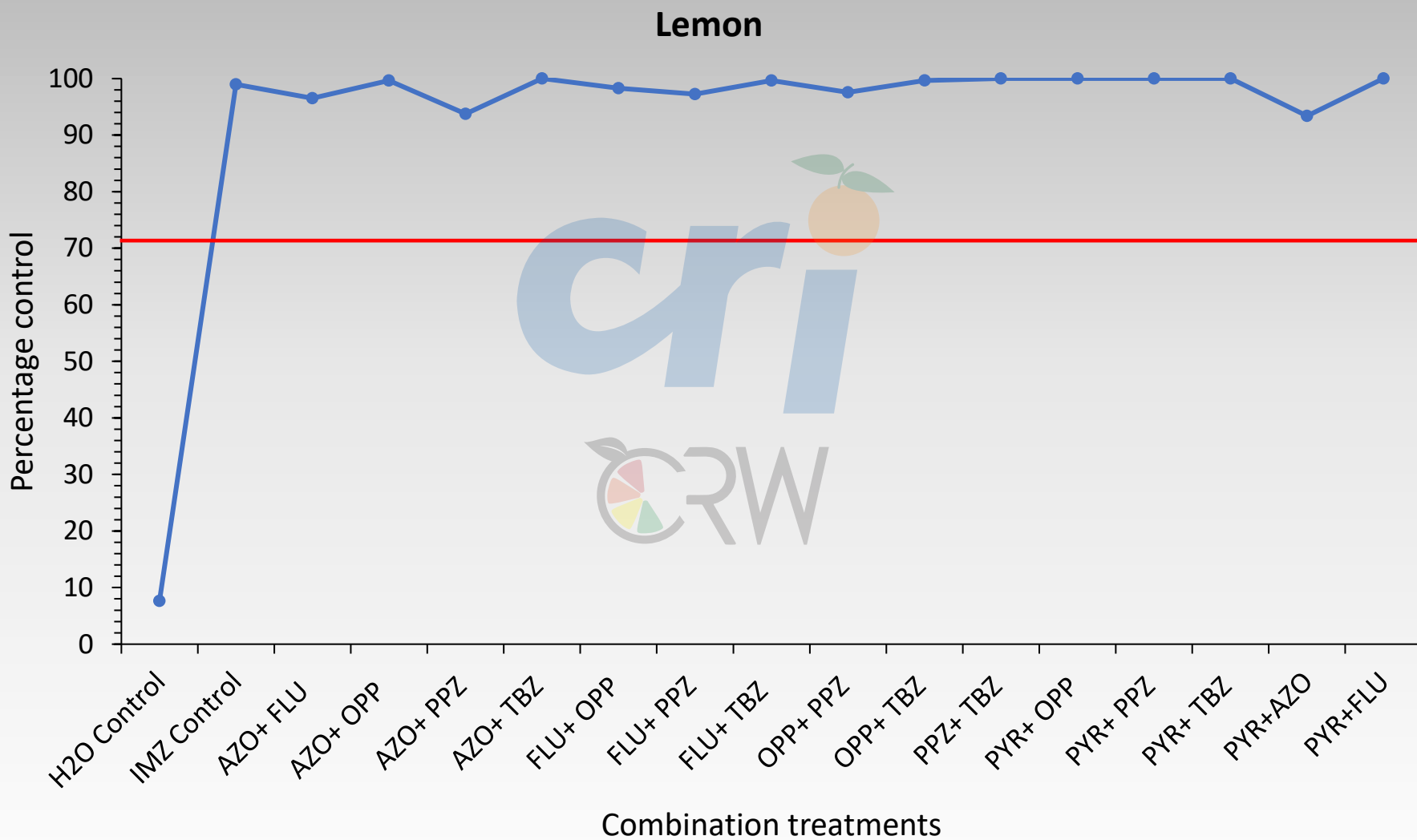


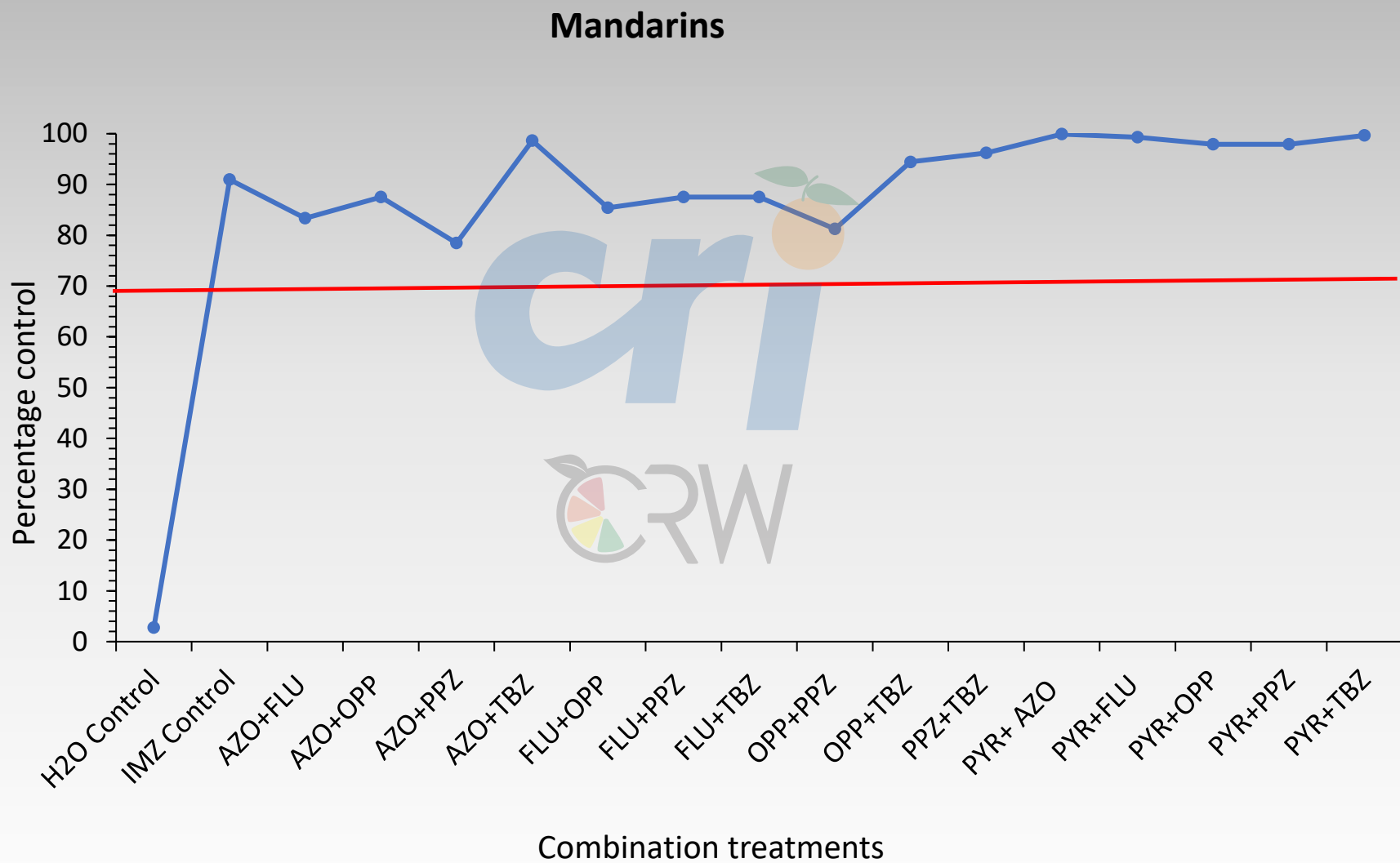












- 🍊 Good sporulation control:
 - 🍊 TBZ+PPZ
 - 🍊 PYR+FLU
- 🍊 No other combination, stand-alone product, or temperature could inhibit sporulation



Take home message

- 🍊 Evident that no stand-alone fungicide measures up to IMZ
- 🍊 Individual chemicals seem to have variable control in different citrus types
 - 🍊 This may not be feasible in terms of number of residues allowed
- 🍊 MOA
- 🍊 Combinations give excellent results

Thank you

