



AARHUS
UNIVERSITY

DEPARTMENT OF AGROECOLOGY

Efficacy of alternatives to control late blight (*Phytophthora infestans*)

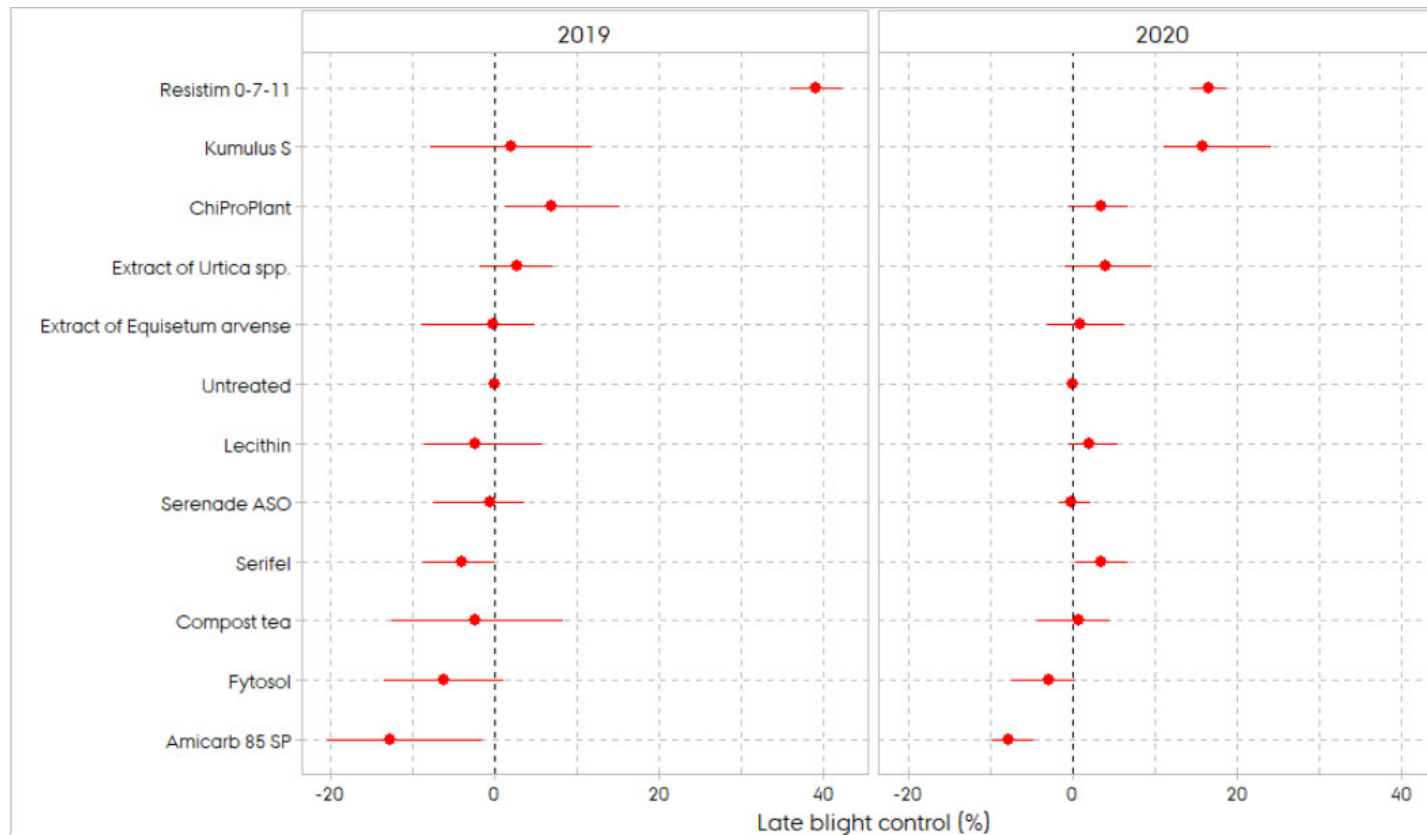
Isaac Kwesi Abuley & Peter hartvig

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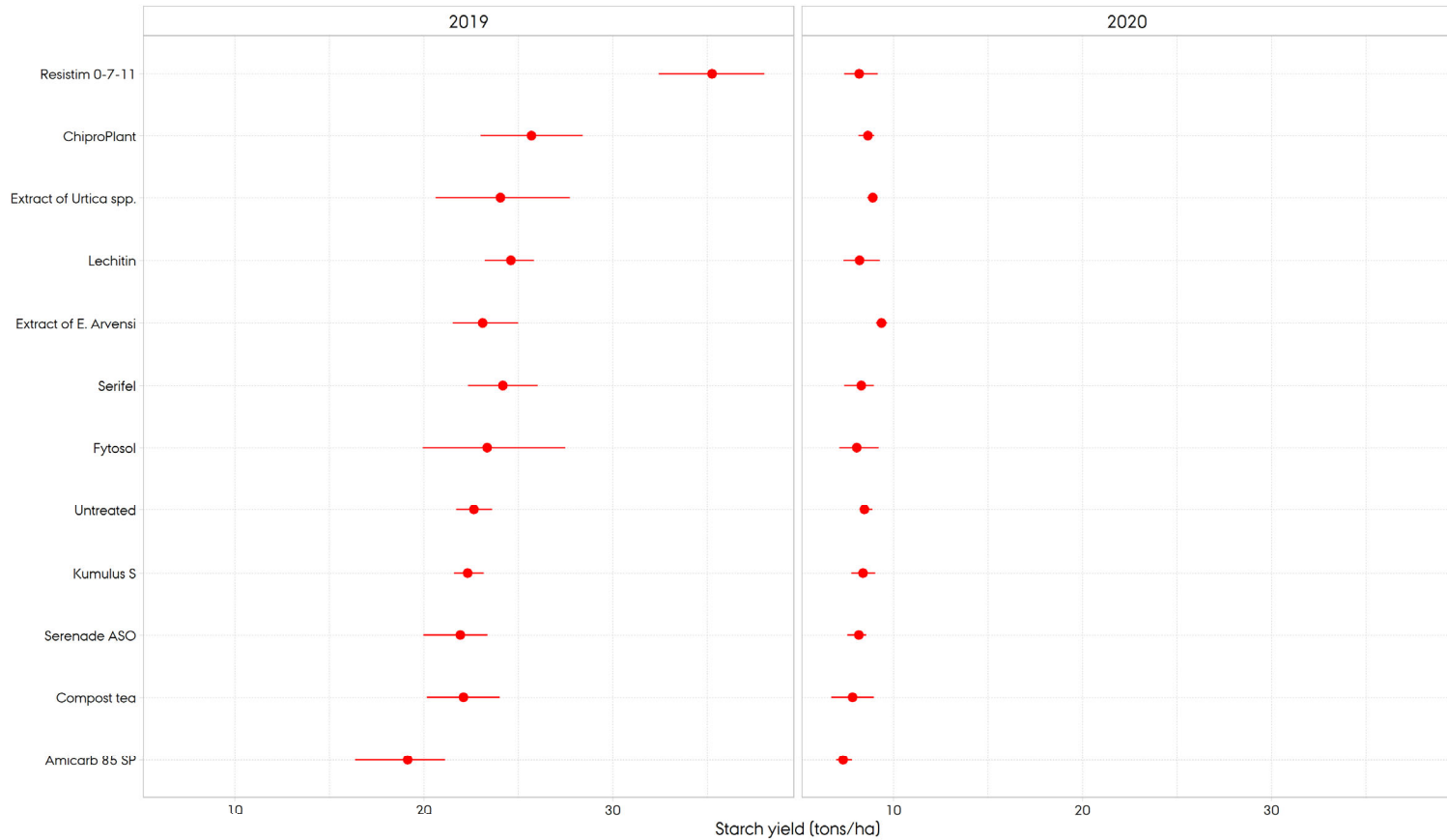
Alternatives tested (cv Kuras) in 2019 and 2020

	Product	Active	Dose	l/ha	Interval
1.	Untreated				
2.	Kumulus S	Sulphur	6,0 kg/ha	300	Weekly or twice a week in "risk periods"
3.	Armicarb 85 SP	Potassium bicarbonate	5,0 kg/ha	300	
4.	Serifel	Bacillus amyloliquefaciens	0,5 kg/ha	300	
5.	Extract of Equisetum arvense	Basic substance	300 l ekstrakt/ha	300	
6.	Extract of Urtica spp.	Basic substance	300 l ekstrakt/ha	300	
7.	Lechithin	Basic substance	0,8 kg/ha	300	
8.	ChiProPlant	Chitosan	300 g/ha	300	
9.	Compost tea	Extract of pig manure	600 l/ha	600	
10.	Resistim 0-7-11	Potassium phophite	3,0 l/ha	300	
11.	Serenade ASO	Bacillus subtilis	4,0 l/ha	300	
12.	Fytosol	Plant elicitor based on (COS-OGA)	4,0 l/ha	300	

Standalone treatments of alternatives



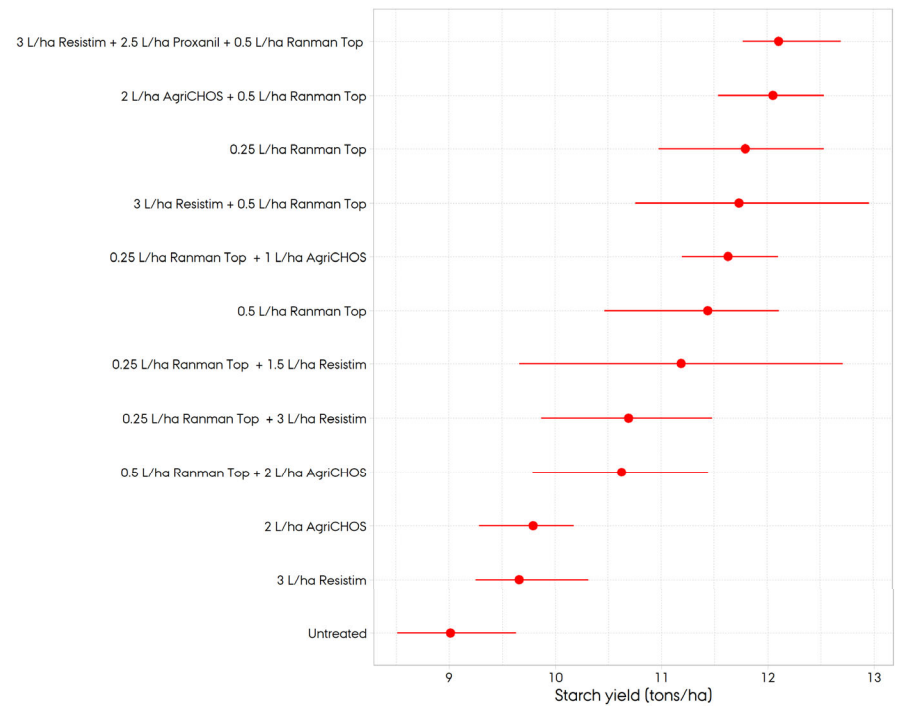
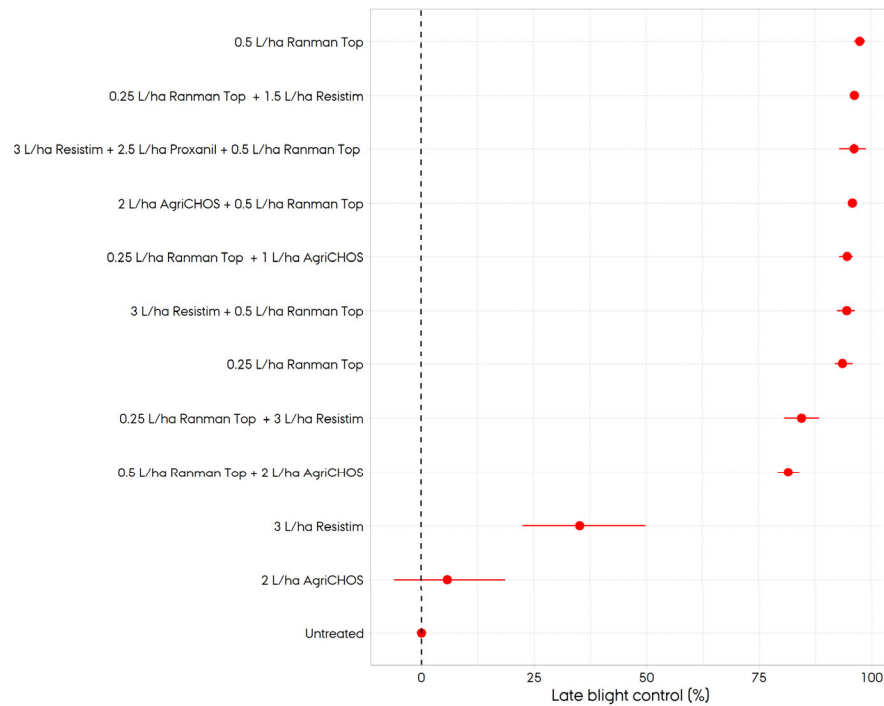
Starch yield from standalone treatments



Standalone treatments and IPM strategies (cv Kuras)

	Strategy	Product	Dose (l/ha)	Timing	Interval
1.	Untreated				7 days*
2.	half dose Ranman Top	Ranmann Top	0,25	ABCDEFGHijkl	
3	Full dose Ranman Top	Ranmann Top	0,5	ABCDEFGHijkl	
4	AgriCHOS	AgriCHOS	2,0	ABCDEFGHijkl	
5	Resistim	Resistim	3,0	ABCDEFGHijkl	
6	Ranmann Top+AgriCHOS	Ranmann Top	0,5	ACEGIK	
		AgriCHOS	2,0	BDFHJL	
7	Ranmann Top+ AgriCHOS	Ranmann Top	0,25	ABCDEFGHijkl	
		AgriCHOS	1,0	3-4 dage efter ABCDEFGHijkl	
8	Ranmann Top+Resistim	Ranmann Top	0,5	ACEGIK	
		Resistim	3,0	BDFHJL	
9	Ranmann Top+Resistim	Ranmann Top	0,25	ABCDEFGHijkl	
		Resistim	1,5	3-4 dage efter ABCDEFGHijkl	
10	AgriCHOS+ Ramman Top	AgriCHOS	2,0	ABCDEF	
		Ranmann Top	0,5	GHIJKL	
11	Resistim+Ramman Top	Resistim	3,0	ABCDEF	
		Ranmann Top	0,5	GHIJKL	
12	AgriCHOS+Proxanil+Ranman Top	AgriCHOS	2,0	ABCDEF	
		Proxanil	2,5	GHI (stopsprøjtninger indsættes ved angreb)	
		Ranmann Top	0,5	JKL	

Integrated strategy versus standalone treatments



Conclusions

- Standalone treatments of alternatives are less effective compared to fungicide treatments.
- Phosphite is the most promising alternative, but there are regulatory and bioaccumulation concerns with this compound
- Integrating alternatives into fungicide strategies seems very promising.
- Such IPM strategies, including host resistance, will be key in the effort to cut-down fungicides.