

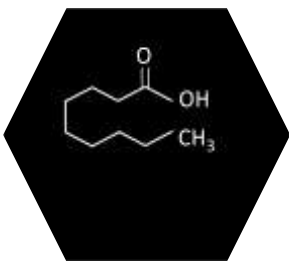
New results of BÖLN Projects on copper minimization in apple scab management

current experimental evidence
greenhouse and field
(trial years 2017 & 2018)



Structure

I. Introduction



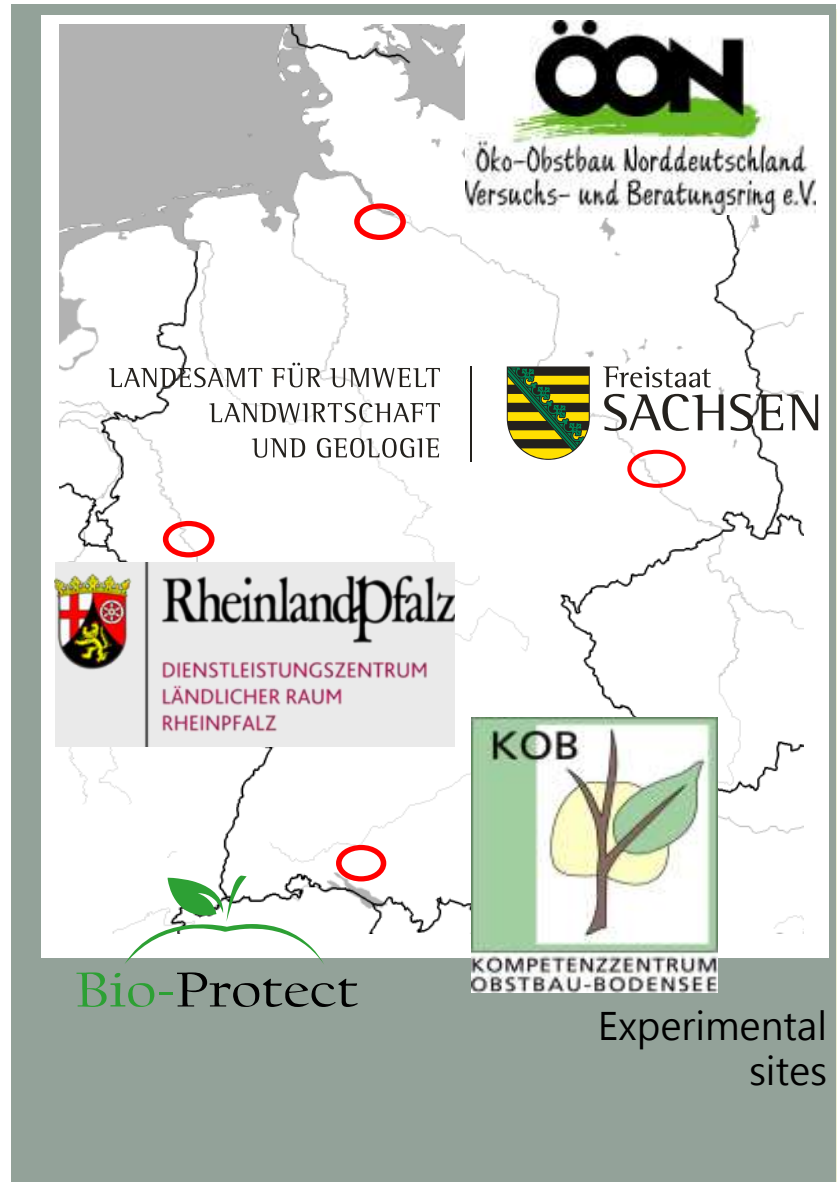
II. Field results



III. Greenhouse

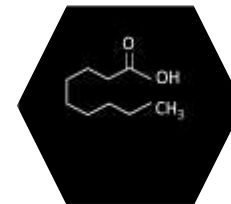


IV. Summary



Map of Germany showing experimental sites marked with red circles. The map includes logos for ÖÖN (Öko-Obstbau Norddeutschland Versuchs- und Beratungsring e.V.), Freistaat Sachsen, Landesamt für Umwelt, Landwirtschaft und Geologie, Rheinland-Pfalz Dienstleistungszentrum Ländlicher Raum, KOB (Kompetenzzentrum Obstbau-Bodensee), Bio-Protect, and Kompetenzzentrum Obstbau-Bodensee. The text 'Experimental sites' is located at the bottom right of the map area.

I. Introduction NEU 1143 F



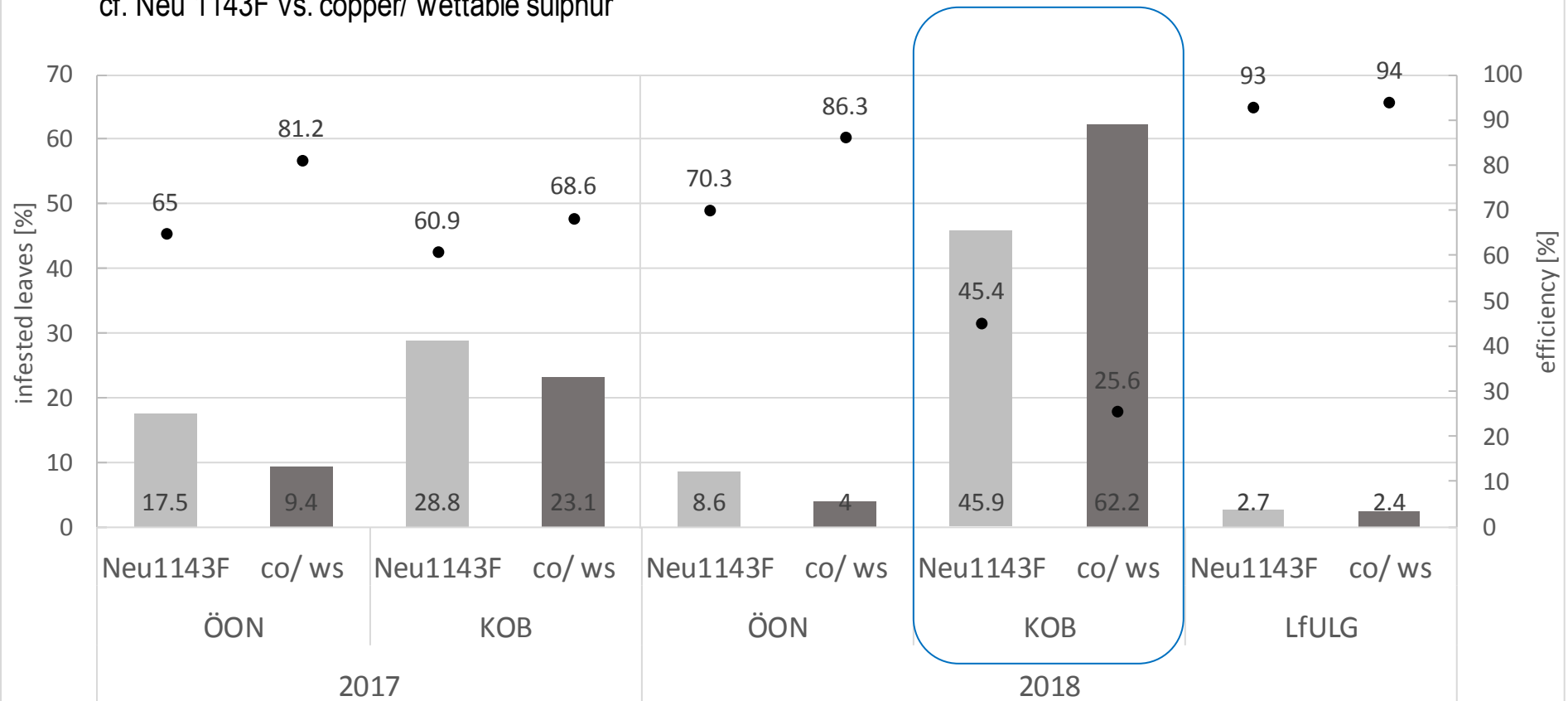
- Active substance: Iron salt of fatty acids
- a fatty acid fungicide with broad spectrum efficacy against a variety of fungal pathogens (apple scab, rust, powdery mildew, leaf spot diseases, peach leaf curl)
- unspecific mode of action → low risk of resistance development
- product suitable for organic production → copper reduction
- no fungicide authorisation so far

II. field results – long shoots

Efficacy of Neu 1143F and copper/ wettable sulphur applied protectively



cf. Neu 1143F vs. copper/ wettable sulphur

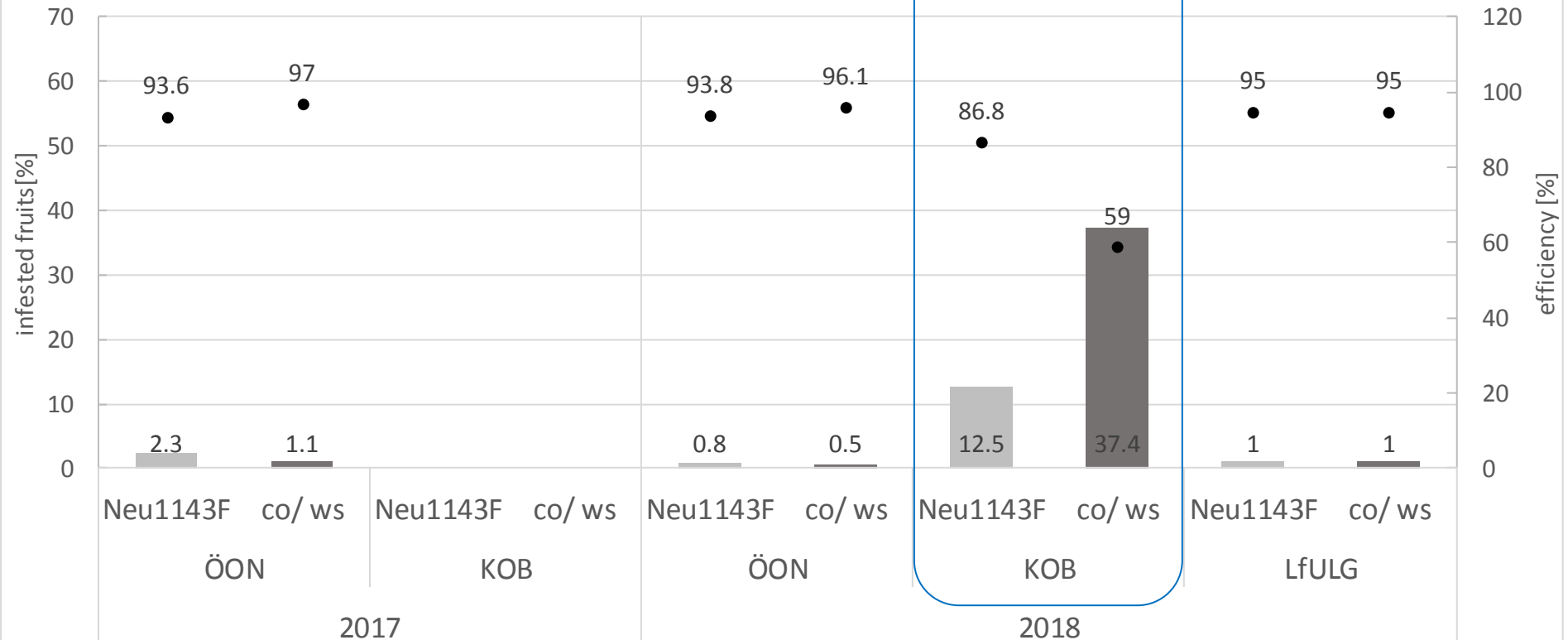


II. field results – fruits

Efficacy of Neu 1143F and copper/ wetttable sulphur applied protectively



cf. Neu 1143F vs. copper/ wetttable sulphur

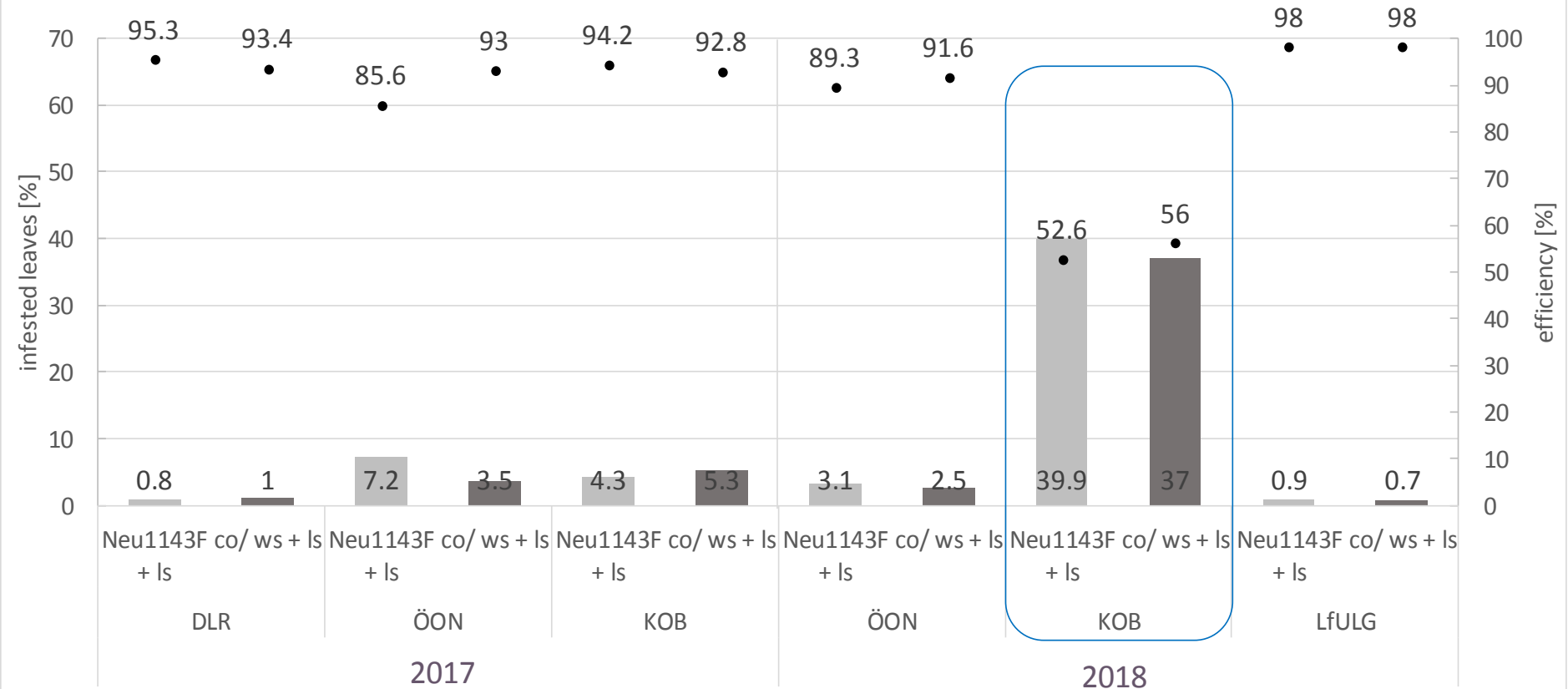


III. field results – long shoots

Efficacy of Neu 1143F and copper/wettable sulphur applied protectively + lime sulphur (germination period)



cf. Neu 1143F + lime sulphur vs. copper/ wettable sulphur + lime sulphur

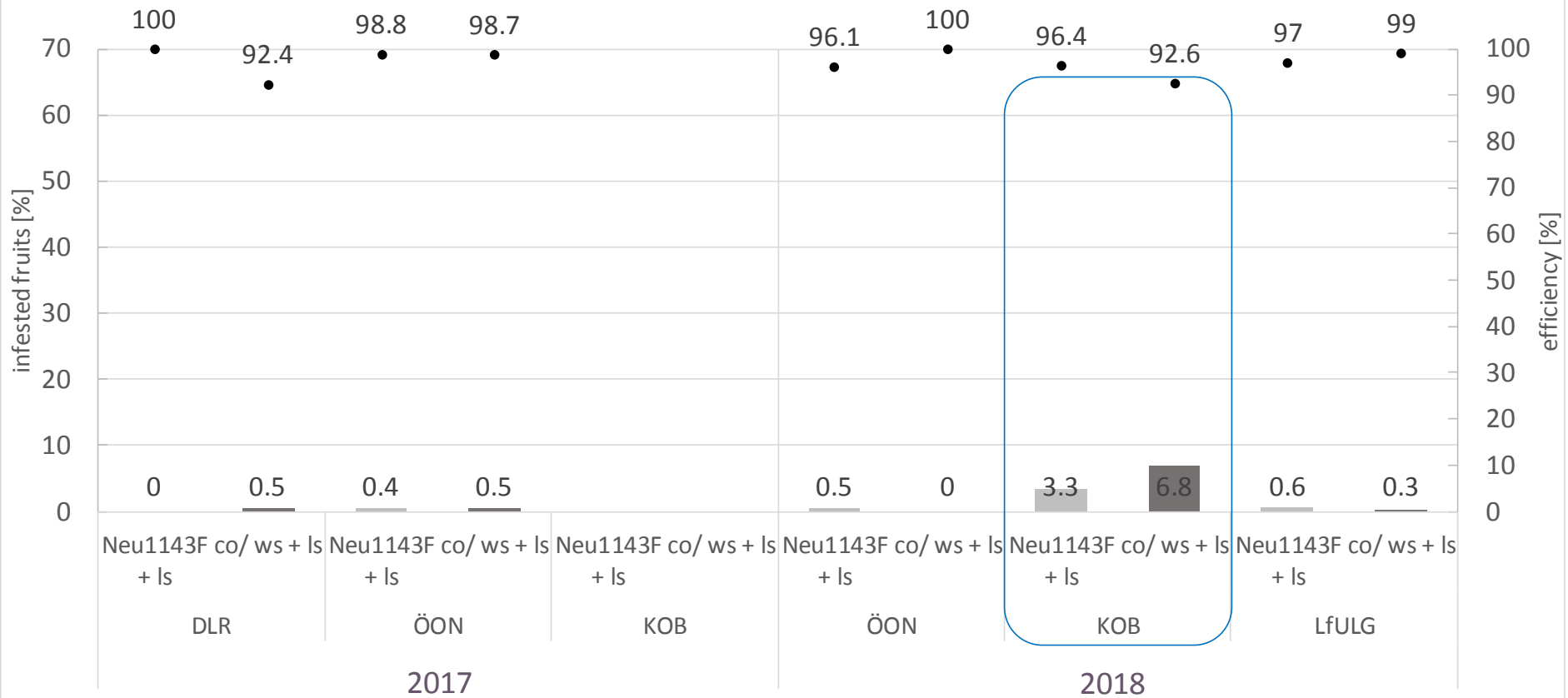


III. field results – fruits



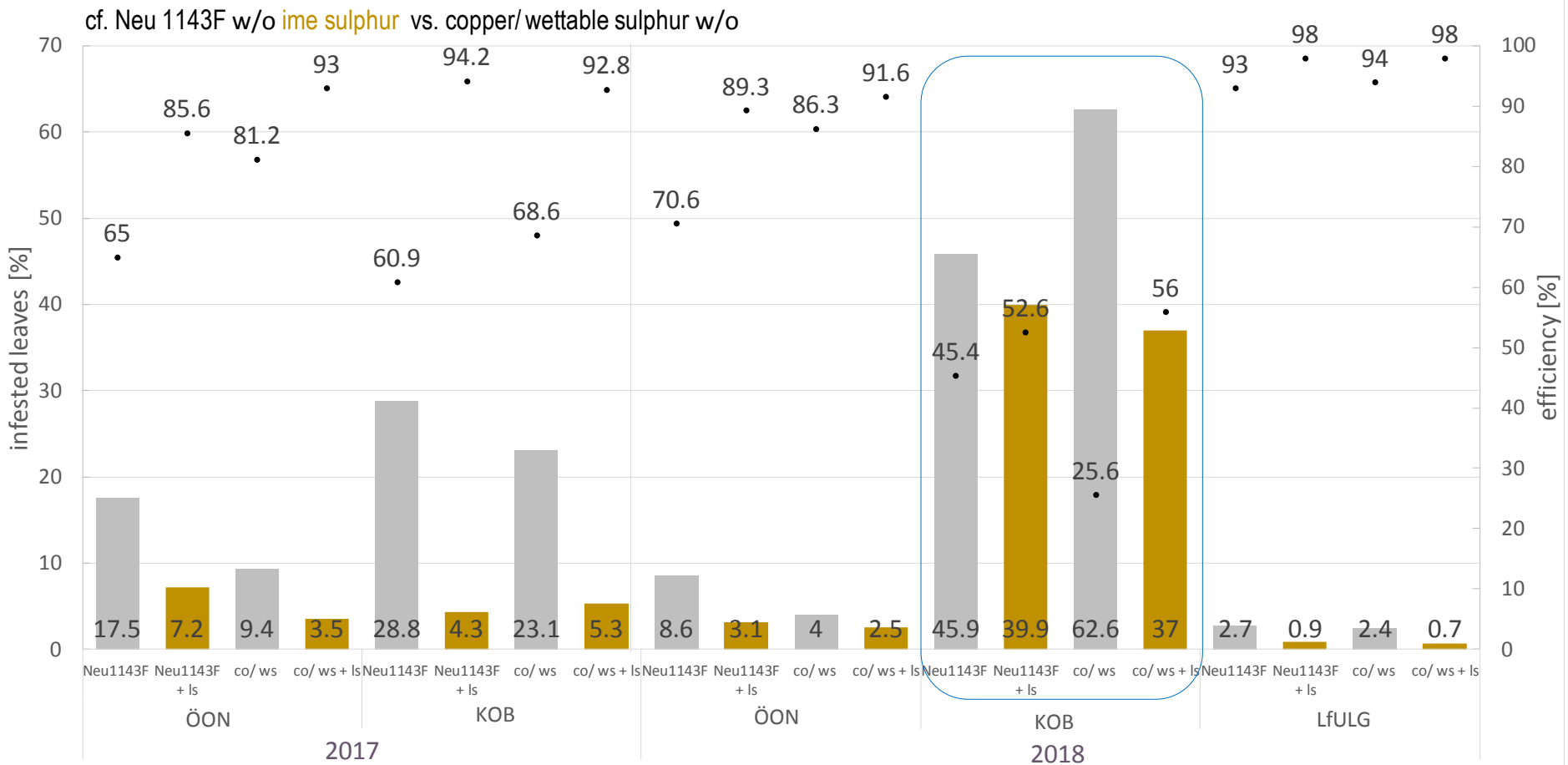
Efficacy of Neu 1143F and copper/wettable sulphur applied protectively + lime sulphur (germination period)

cf. Neu 1143F + lime sulphur vs. copper/ wettable sulphur + lime sulphur



III. field results – long shoots

Efficacy of lime sulphur (germination period)

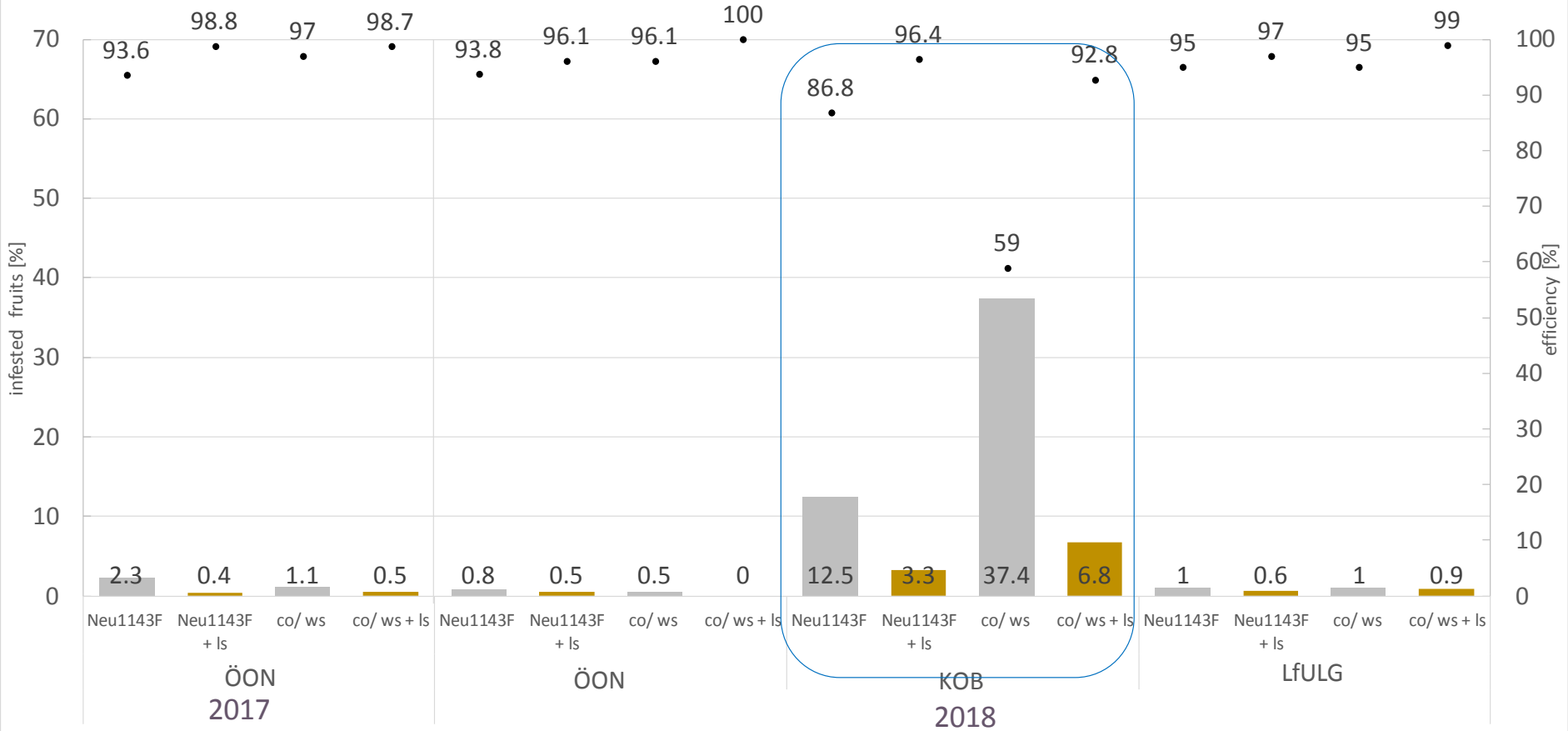


III. field results – fruits

Efficacy of lime sulphur (germination period)








cf. Neu 1143F w/o lime sulphur vs. copper/ wettable sulphur w/o lime



III. Greenhouse results



- treatment: spray dripping wet (ca. 5ml /shoot)

					
treatment	protectively	protectively rain fastness (30 mm)	IN O K	Stopp application (during germination) rain (5-10 mm)	curatively - wet leaf - dry leaf
time period (h)	-18	-18 /-1	0	+5	+24
cumulative degree hours 18°C				90	432

Protectively, 30 mm rain



treatment	rate	scab incidence (%)		efficacy
		average	± stand. deviation	
	%			(%)
untreated	-	28,4	10,2	
Cuprozin progress (300g RK/ha)	0,12	5,3	5,1	81
2H13+Cuprozin progress (300g RK/ha)	0,06+0,12	12,0	9,8	58
Cuprozin progress (100g RK/ha)	0,04	12,3	15,0	57
2H13Cuprozin progress (100g RK/ha)	0,06+0,04	10,2	10,9	64
Vinasse	10	43,2	30,1	-52
Vinasse+2H13	10+0,06	34,8	20,8	-23
Neu1143 F	4	18,4	16,6	35

IV. Summary



- 2017 & 2018: very different years fighting scab
- 2018: *Neu 1143F* and copper are hardly comparable at some trial stations
- Greenhouse trials: concerning to **rain fastness** further studies are necessary
- **Copper** still is our most powerful fungicide
- Used protectively ***Neu 1143F*** showed many a time promising results against scab
 - could play an important role reducing the use of copper (fighting apple scab) if the results can be confirmed
- **Lime sulphur**, combined with copper or *Neu 1143F* showed continuously good effects
 - **still an important pillar of ecological scab strategies**