

Disease control in Sweden 2019 and 2020 in cereals

NORBARAG 12th April 2021

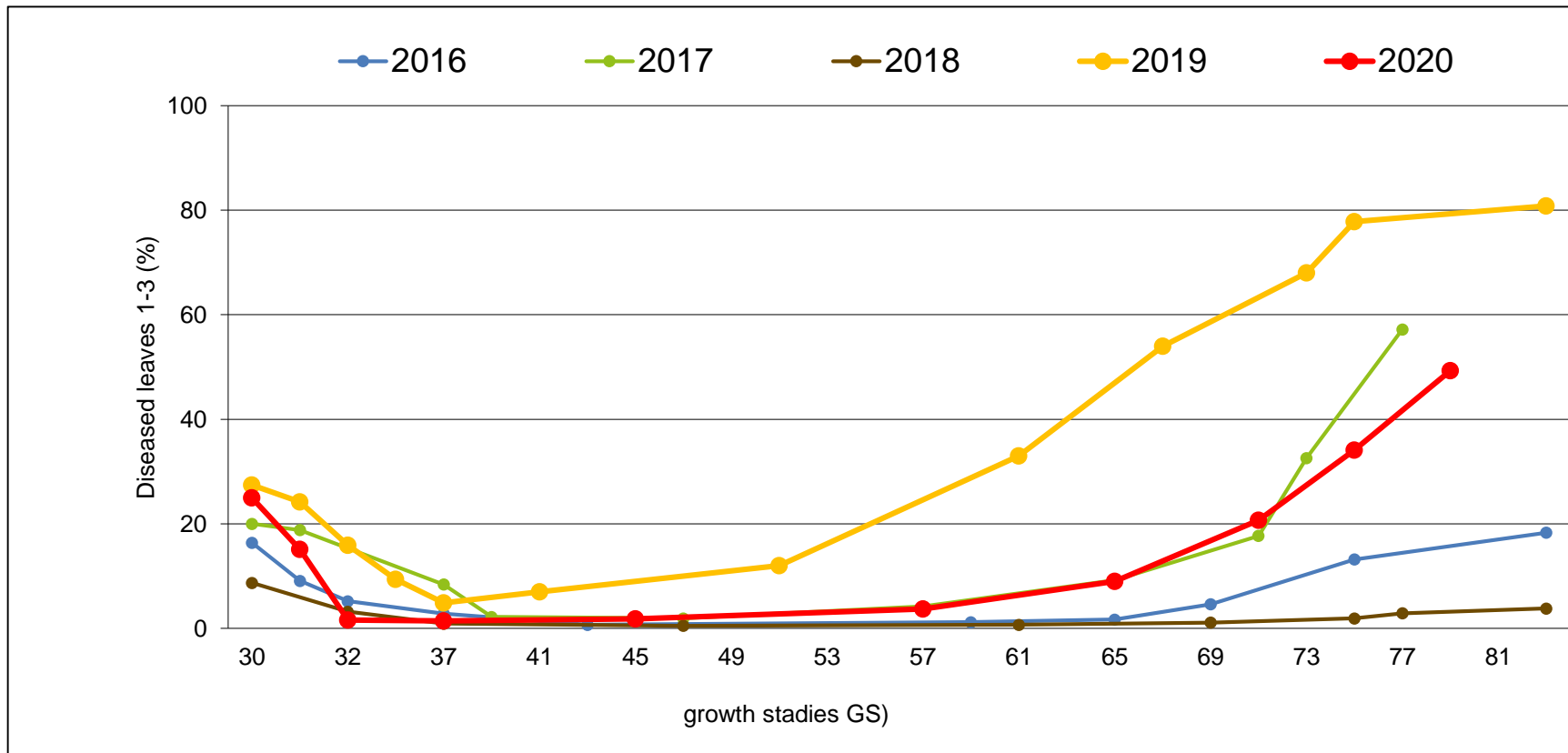
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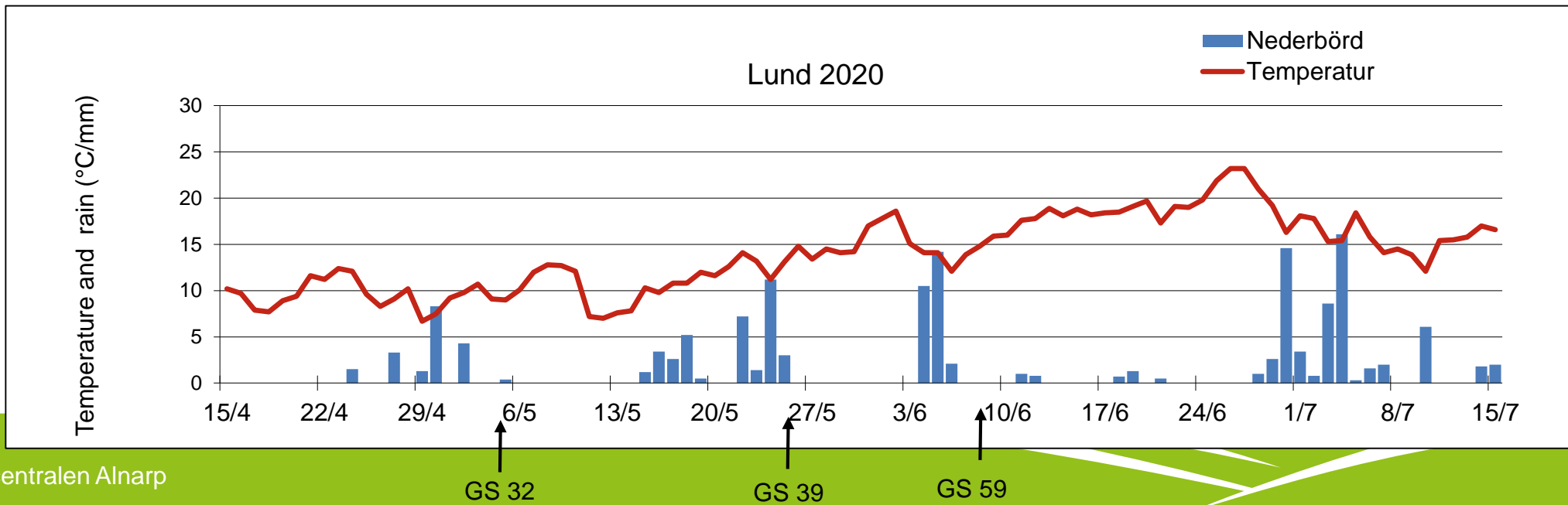
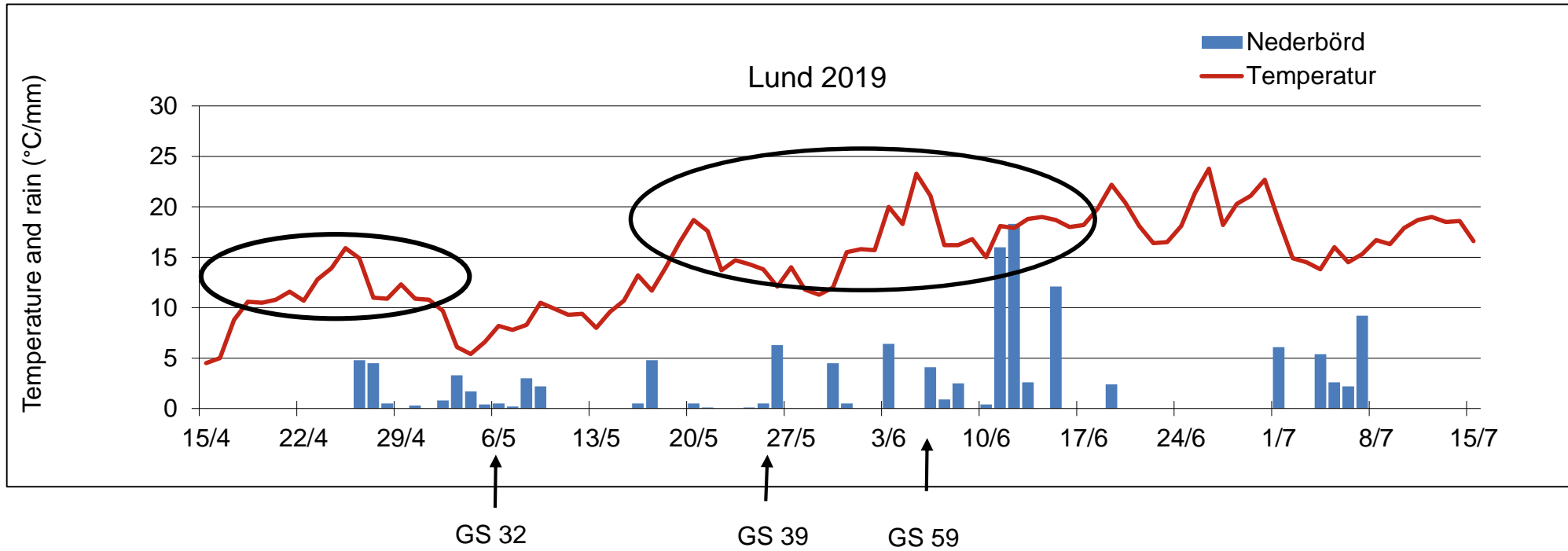


Winter wheat - development of *Zymoseptoria tritici*

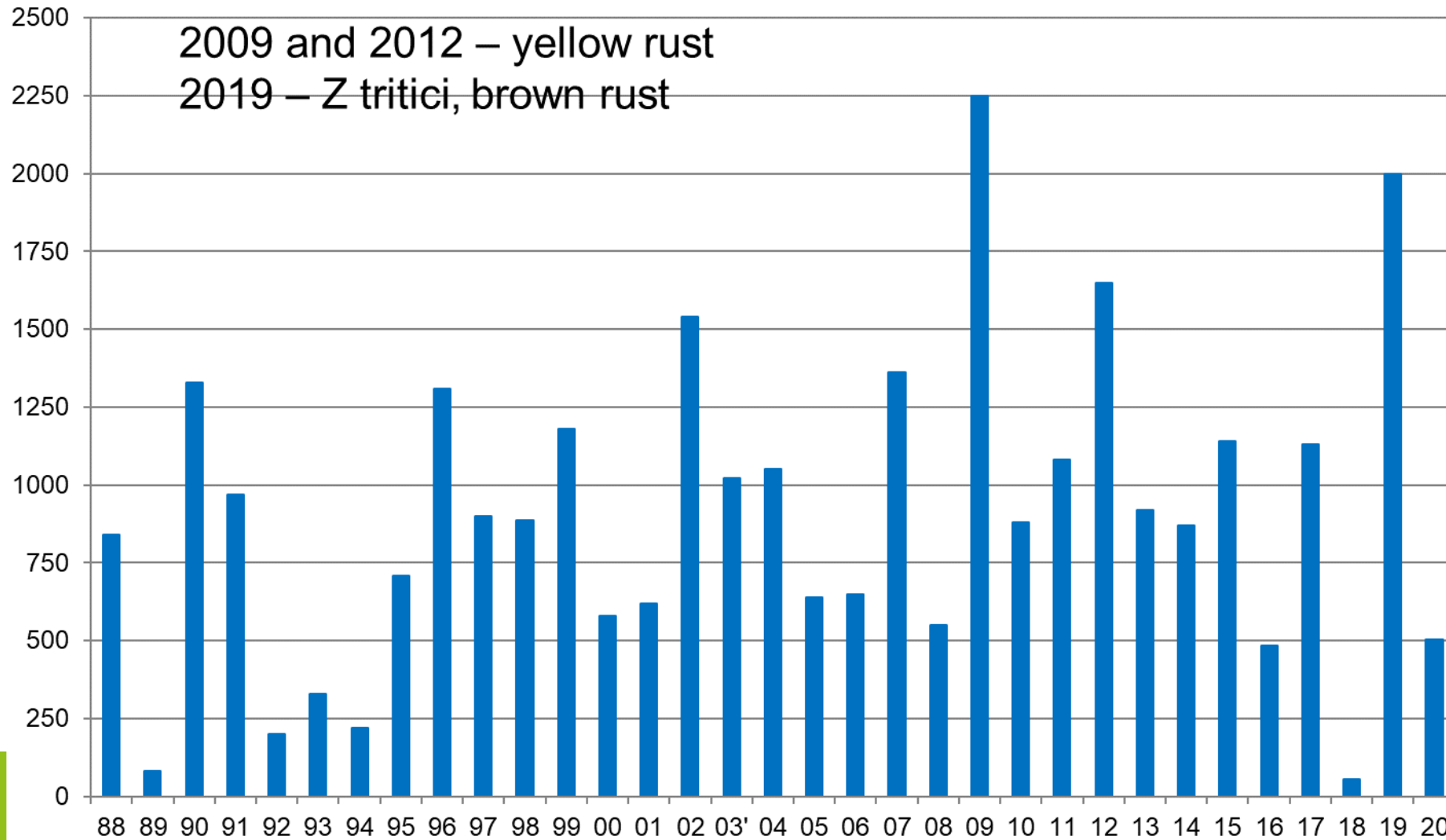
2016-2020 i southern Sweden (Skåne, Blekinge och Halland)

Source : Växtskyddscentralens monitoring plots (about 80)



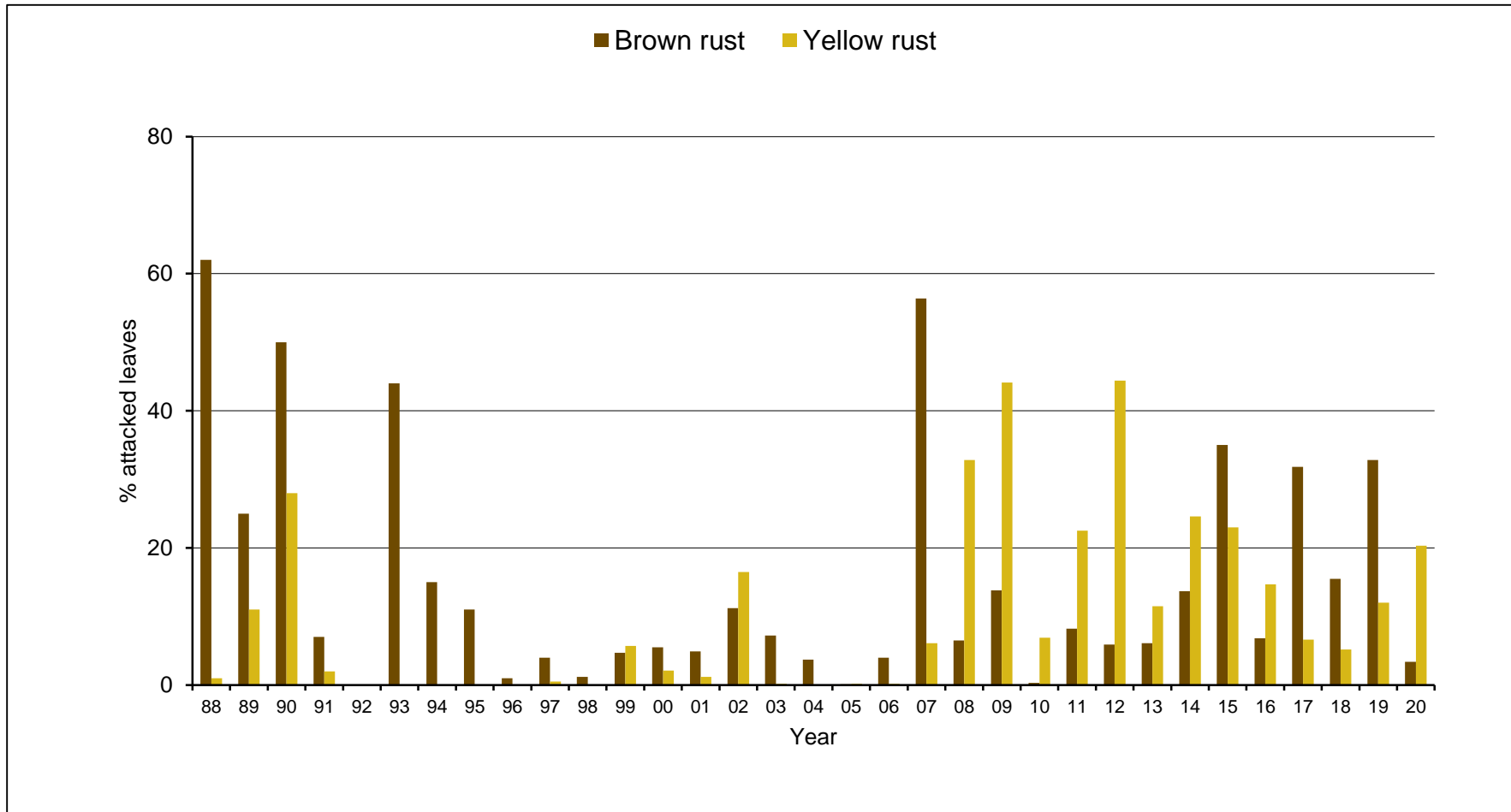


Winter wheat – Yield increase (kg/ha) 1988-2020 Fungicide trials Skåne



Rust - winter wheat

Monitoring 70-80 plots/year in farmers fields, different varieties

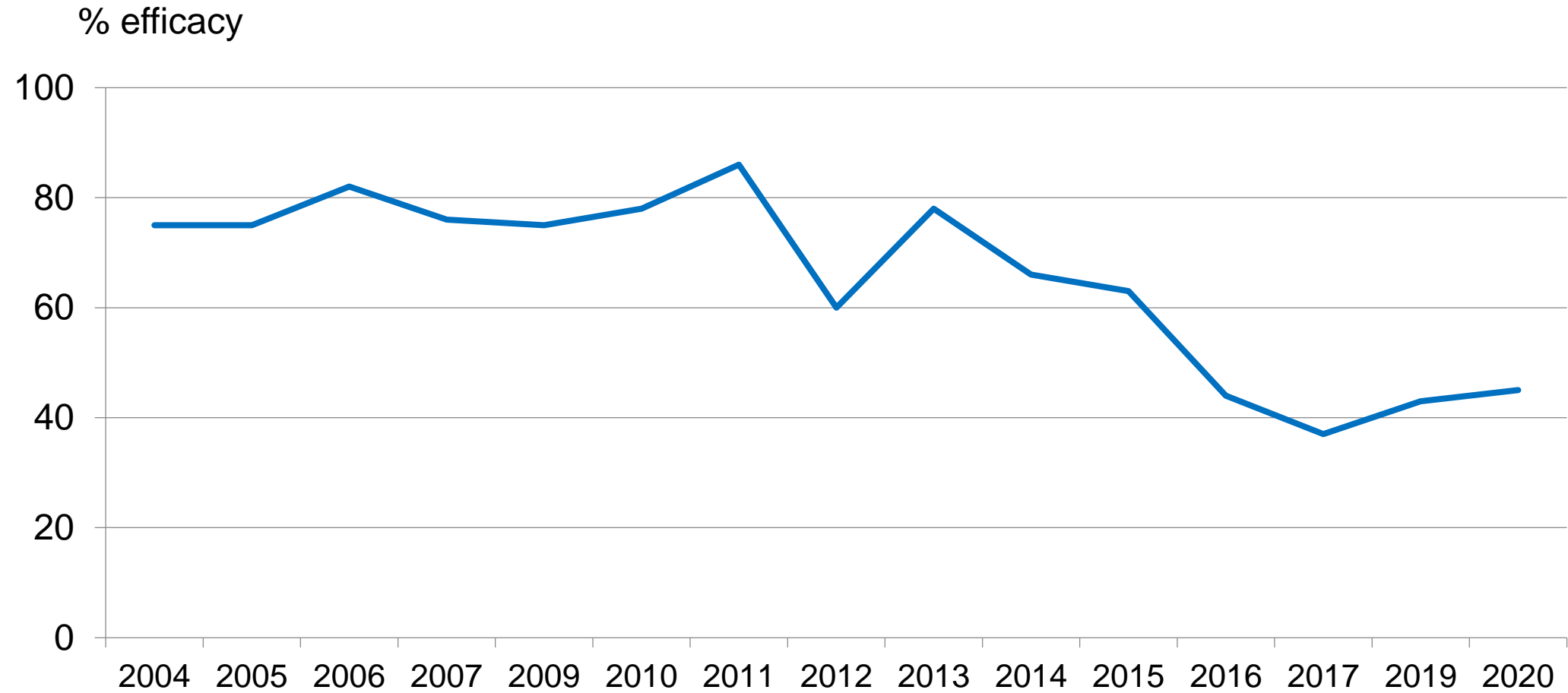


Approved fungicides in Sweden 2021-03-01

FRAC group	Fungicide grupp	Active substance	Products
11	Strobilurines (QoI)	Azoxystrobin Pyraclostrobin Fluoxstrobin Trifloxystrobin	Amistar/Mirador, Mirador Forte Comet Pro, Priaxor , Balaya (not approved) Varianso Xpro Delaro
1	MBC-fungicides	Tiofanatmetyl	Topsin
7	SDHI	Bensovindiflupyr Bixafen Fluopyram Fluxapyroxad Isopyrazam	Elatus Era, Elatus Plus Siltra Xpro, Aviator Xpro, Ascra Xpro, Varianso Xpro Ascra Xpro, Propulse Priaxor, Imtrex, Librax, Revystar XL, Revytrex Bontima, Gigant
21	Qil -fungicider	Fenpicoxamid	Univoq (not approved)
3	DMI-fungicides (azoles)	Mefentriflukonazol Metkonazol Prothioconazole Tebukonazole	Revystar XL, Revystrex, Balaya (not approved) Librax Proline, Protendo, Delaro, Folicur Xpert, Input, Ascra Xpro, Aviator Xpro, Siltra Xpro, Propulse, Elatus Era, Prosaro, Varianso Xpro, Gogant Univoq (not approved) Mirador Forte, Folicur Xpert, Prosaro, Orius
9	Anilinpyrimidiner	Cyprodinil	Kayak, Bontima
13	Azanaphaler	Proquinazid	Talius
U8	Benzophenone	Metrafenon Pyriofenon	Flexity Property
U6	Fenylacetamider	Cyflufenamid	Upstream
5	Morfoliner	Fenpropidin Fenpropimorf Spiroxamin	Tern, Leander Forbel Input
M4	Phthalimider (multisite)	Folpet	Folpan

Prothioconzole – control of *Zymoseptoria tritici* 2004-2020

Skåne 2 x ½ rate GS 37/39 & 55/59

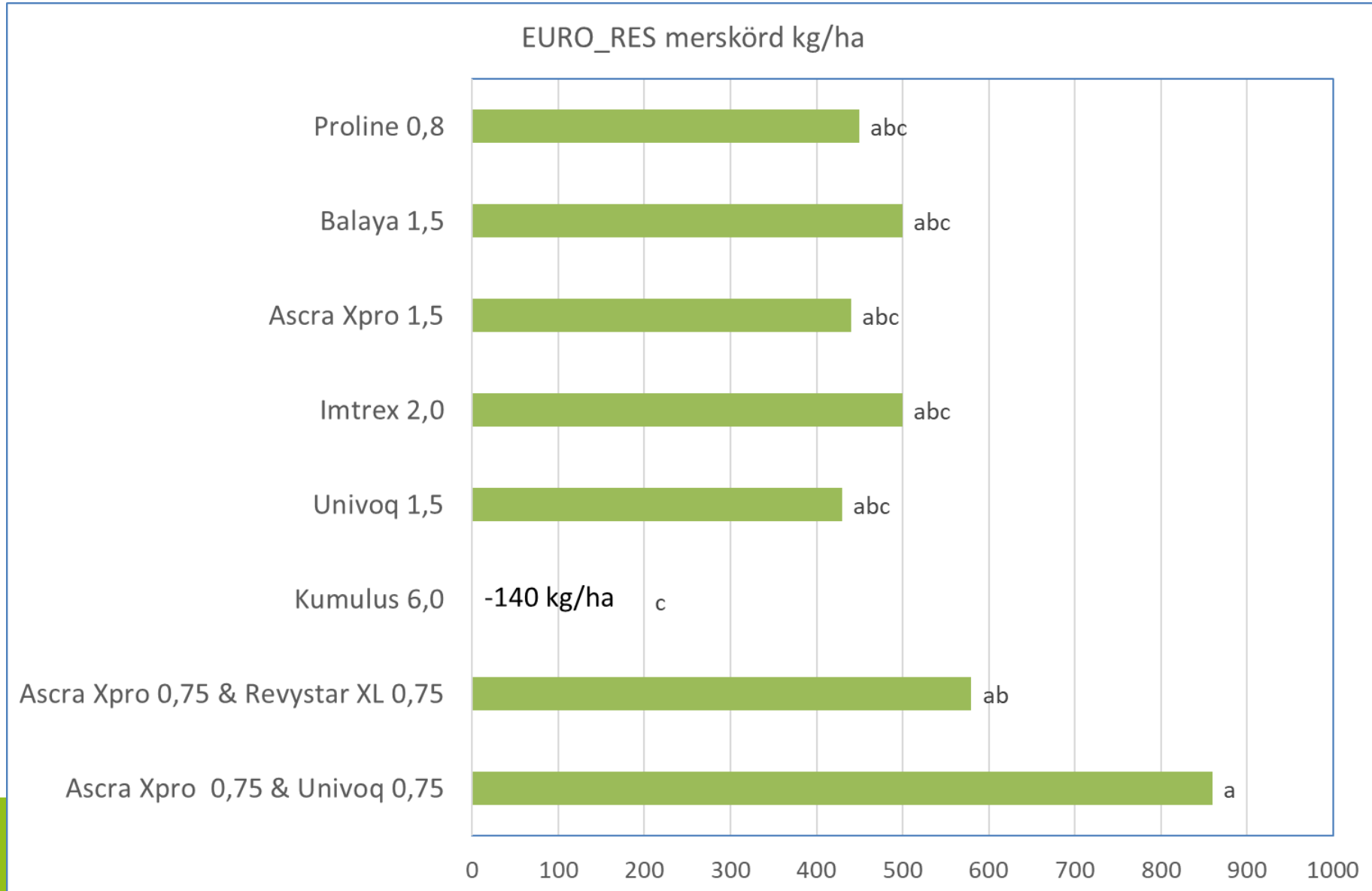


Winter wheat Trial plan - EURO_RES – 2020 Skåne

Led	GS 32		GS 39		GS 55	
1	Untreated	Dose		Dose		Dose
2			Proline	0.8		
3			Balaya	1.5		
4			Ascra Xpro	1.5		
5			Imtrex	2.0		
6			Univoq	1.5		
7			Kumululus	6,0		
8	Ascra Xpro	0,75			Revystar XL	0,75
9	Ascra Xpro	0,75			Univoq	0,75

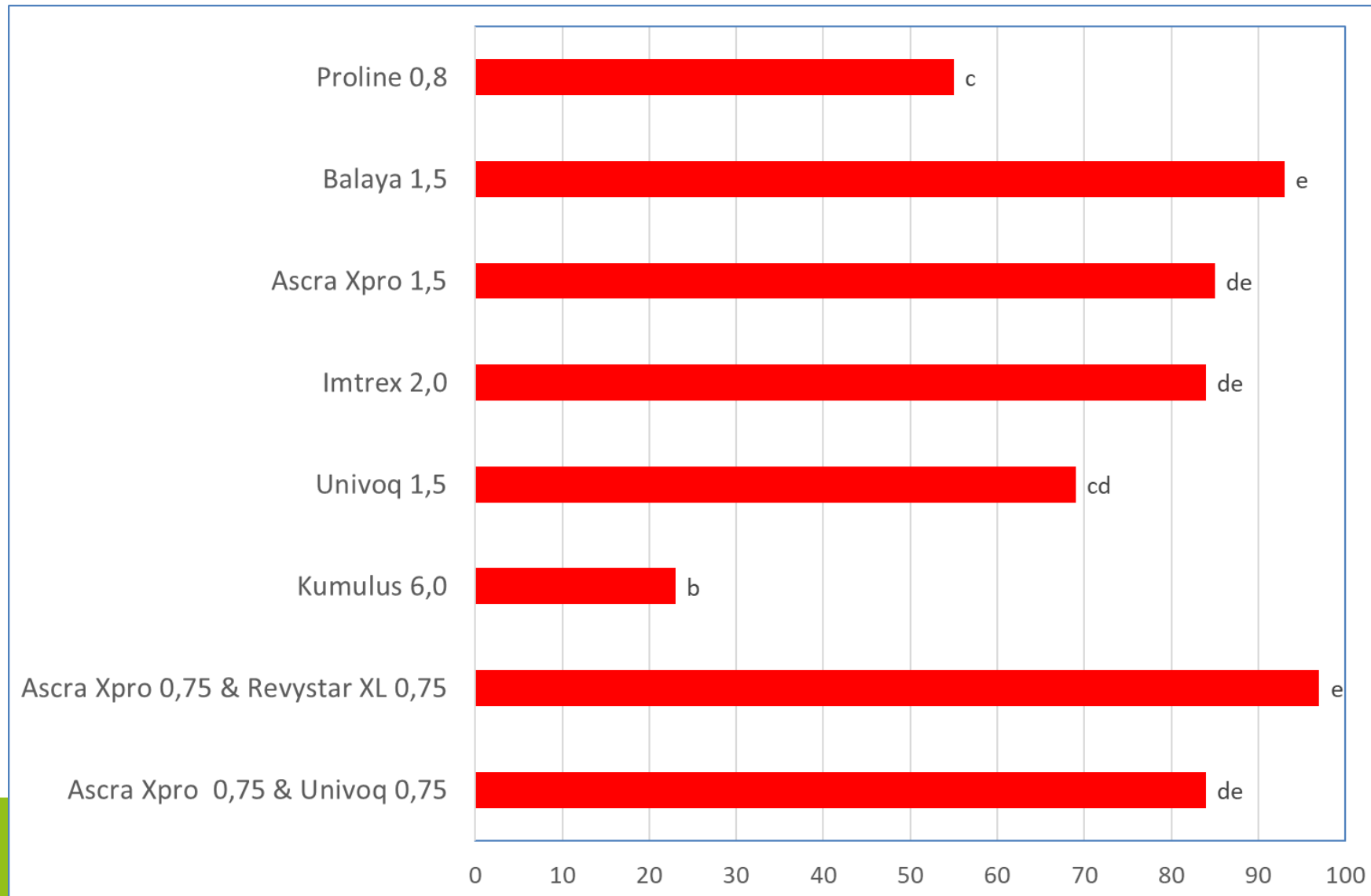
EURO_RES yield increase kg/ha

Yield in untreated 12 000 kg/ha



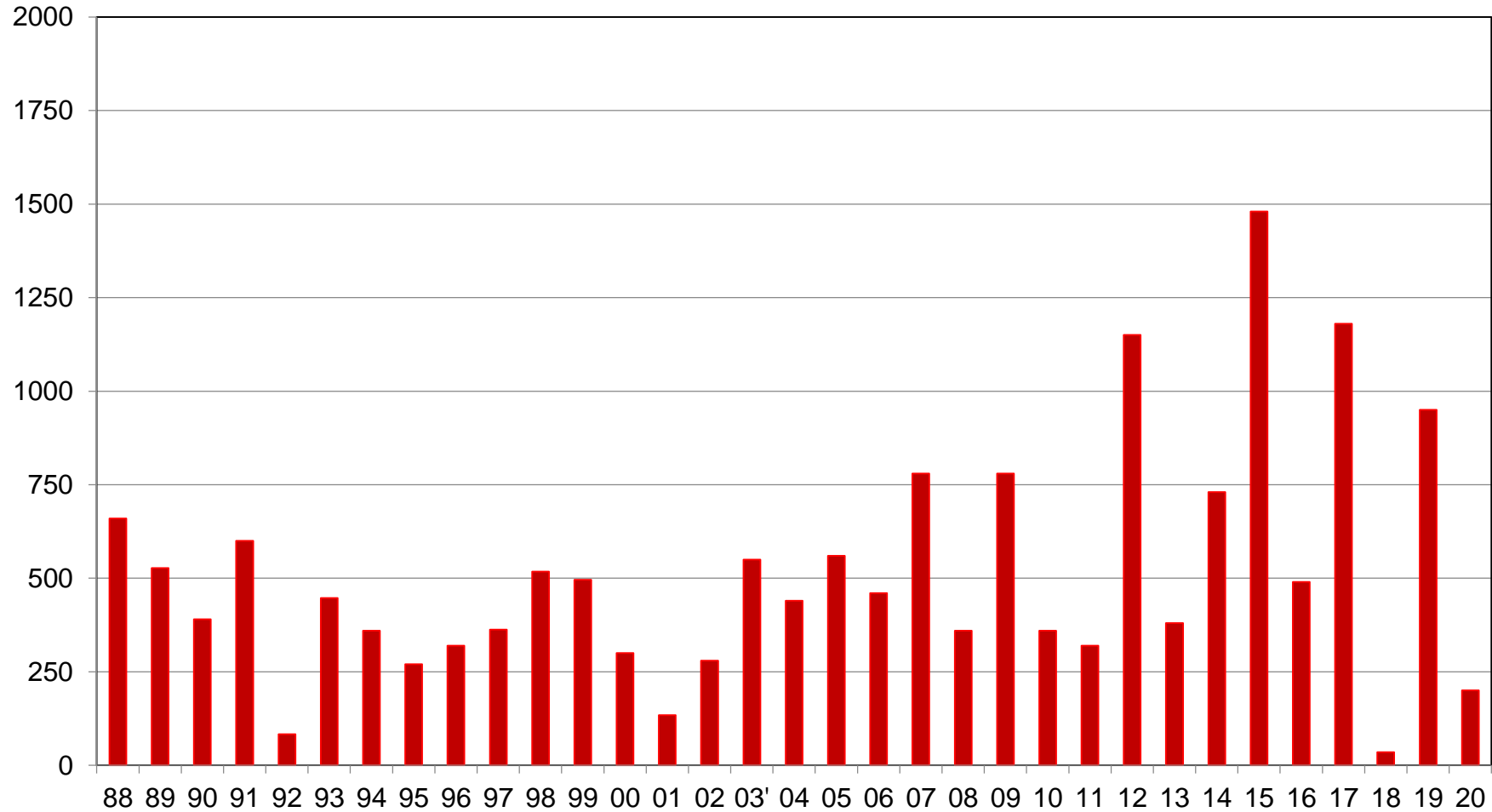
Control of *Zymoseptria tritici* - EURO_RES

Untreated 20 % disease (leaf 2)



Spring barley – Yield increase (kg/ha)

1988-2020 Fungicide trials Skåne



Barley Net blotch Sweden

Resistance strobilurins mutation F129L

Source: BASF, Syngenta, DuPont

	Number of samples	Number of samples without resistance	Number with Low resistance 1-20 %	Number with Moderate resistance 20-60%	Number with High resistance > 60 %	% samples with resistance
2008	10	8	0	2	0	20
2009	40	31	0	9	0	22
2010	21	17	1	3	0	19
2011	25	23	0	2	0	8
2012	28	27	1	0	0	4
2013	16	15	1	0	0	6
2014	13	12	0	1	0	7
2015	24	17	5	0	2	30
2016	10	8	1	0	1	20
2017	14	8	3	2	1	43
2019	7	4	1	1	1	42
2020	7	1	0	4	2	85

SDHI 2020. Mutationen C-S135R was found in low percentage in 4 out of 7 places