

Breeding for Disease Resistance in Winter Wheat

Mike Taylor
Wheat Breeder
Limagrains Rosenthal

mike.taylor@limagrains.de

Very practical
breeder



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The most important diseases of Winter Wheat in Germany

- Leaf Septoria (*S. tritici*)
- Fusarium Head Blight
- Brown Rust
- DTR / Tan Spot
- Mildew
- Yellow Rust
- Eyespot
- **Take-All** greatest and most difficult challenge !
- Glume Blotch (*S. nodorum*)
- BYDV ...Aphid vector
- WDV ... Leaf Hopper vector
- Soil Born Mosaic Viruses
- Snow Mould. (*Microdochium nivale*)
- Stem Rust ?

Winter Wheat

Importance of characteristics for entry of new varieties into Regional Trials (LSV)

Region	Nr.	Quality Group				Falling Number	Stability	Protein Content	Yield			Agronomics				Resistances			
		E	A	B	C				Yield untreated (St1)	Yield treated (St2)	Yield Stability (St2)	Earliness	Late ripening	Winter Kill	Lodging	Mildew	Leaf Septoria	Yellow Rust	Brownrust
Marsch	1		x	x	x	x			x	x	x	x	x		x	x	x	x	
Geest (Sand)	2		x	x	x	x			x	x	x		x	x	x	x	x	x	
Östliches Hügelland SH (Lehm)	3	(x)	x	x	x	x			x	x	x		x	x	x	x		x	
Diluvial Standorte Nord (Ostdeutschland)	4	(x)	x	(x)		x			x	x				x		x		x	
Mecklenburg Süd / Brandenburg Nordwest	45	(x)	x	(x)		x	x		x	x	x		x			x		x	
Diluvial Standorte Süd (Ostdeutschland)	5	(x)	x			x	x		x	x	x		x			x		x	
Sandböden Nordwest	6		x	x	x	x			x	x	x		x	x	x	x	x	x	
Köln-Aachener Bucht	7		x	x	x	x			x	x	x			x				x	
Sandböden Nordhannover	8		x	x	x	x			x	x	x		x	x	x	x	x	x	
Oderbruch	10	x	x			x	x		x	x	x		x	x		x		x	
Lehmböden Südhannover	12	x	x	x	x	x			x	x	x		x	x	x	x		x	
Lößstandorte der Ackerebene (Mittel- / Ostd.)	13	x	x			x	x		x		x		x	x		x		x	
Lehmstandorte Nordwest	14		x	x	x	x			x	x	x		x	x	x	x		x	
Höhenlagen Mitte/West	15	x	x	x	x	x			x	x	x		x	x	x	x		x	
Mittellagen Südwest	16	x	x	x		(x)	(x)	x	x		(x)		x	x			(x)	x	
Verwitterungsstandorte Südost	17	x	x	(x)		x	x		x		x		x	x		x		x	
Lößstandorte der Übergangslagen (Mittel- / Ostd.)	18	x	x			x	x		x		x		x	x		x		x	
Höhenlagen Südwest	19	x	x	x				x	x				x	x				x	
Wärmelagen Südwest	20	x	x	x		(x)	(x)	x	x				x	x			(x)	x	
Fränkische Platte	21	x	x	x				x	x		x					x		x	
Tertiärhügelland / bayer. Gäu	22	(x)	x	(x)	(x)	x		x	x					x		x		x	
Jura / Hügelland	23		x	x	x	x		x	x							x		x	

Chemical Plant Protection



Resistance Breeding



Poster by German Breeders Association (BDP)

Any Questions ?