

Notat

SEGES, Landbrug & Fødevarer F.m.b.A.
PlantelInnovation

Differentialle karaktertræk mellem sorter til forædlerne	Ansvarlig	NHKR
	Oprettet	13-12-2021
	Side	1 af 1
Projekt: OPTICROP - WP3		

Phenotypic characterization of selected winter wheat varieties

Our focus is on grain protein content and on the genetic elements underlying this trait. A total of twelve selected winter wheat varieties were tested this year in four replicates in a field trial at Flakkebjerg Research Center, some of these known to have high grain protein content, while some others with lower grain protein content.

It is well known that nitrogen uptake, metabolism and remobilization processes, as well as senescence related processes, are connected to grain protein content. Related to senescence, we monitored and recorded chlorophyll content of flag leaves through SPAD measurements for all plots, at plot level. We also scored all the plots for the level of senescence, which, as expected, at the last two time points in the season had a strong negative correlation with chlorophyll content (-0.87, -0.91). We noted differences between the varieties of interest related to decline in chlorophyll content and senescence patterns, but also related to resistance to yellow rust infection.

In order to assess the post anthesis nitrogen uptake and the amount of nitrogen remobilized in the plants, we harvested plant material from the three best plots for each variety at anthesis, and before harvest. The plant material was further processed and analyzed for nitrogen and carbon content. We noted differences between the selected varieties with respect to post anthesis nitrogen uptake and nitrogen remobilization, but also related to protein content, especially plant protein content at anthesis and grain protein content. We also noted a strong effect of the environment, translated into differences compared to our results from last year, where the observed field trial was located on Fyn, with significant differences in the weather conditions between the two years.