

## Cultivar effects on weeds and yield for different control methods in wheat

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Field trials with 16 different wheat cultivars were conducted between 2004 and 2011 near Braunschweig, Germany. The investigations were aimed to evaluate cultivar effects in terms of (i) weed suppressive ability, (ii) tolerance to weed and (iii) selectivity for mechanical control treatments. We assessed the effect of harrowing and reduced herbicide dosages on weed infestation and wheat yield in two different experimental series each with 8 cultivars. As expected we found clear cultivar effects on weed biomass and a strong correlation between cultivar-specific growth characteristics, light penetration (PAR) and weed suppression. In contrast to one of our hypotheses there were no significant interactions between harrowing and cultivar regarding weed biomass and grain yield for winter wheat. Compared to the overall average, none of the tested cultivars showed a higher tolerance in terms of mechanical weeding. Also, the yield reduction caused by the natural weed infestation and by the model weed *Sinapis alba* were similar in all tested cultivars. However, looking at the herbicide effects, the experiments demonstrated that a reduction of the dosage by up to 50% in competitive cultivars achieved the same control level as the full dosage in cultivars with weak weed suppression. As a consequence the competitiveness of cultivars should be estimated and published regularly in order to provide an additional tool for integrated weed control.