

## 8.8 NICOL STOCKFISCH

Institute of Sugar Beet Research (IfZ), Holtenser Landstr. 77, D – 37079 Göttingen

### **RESOURCE EFFICIENCY OF WINTER BEET CULTIVATION**

**Efficacité des ressources dans la culture de betteraves automnales /  
Ressourceneffizienz des Winterrübenanbaus**

#### **ABSTRACT**

The cultivation of winter beet offers possibilities to further increase the yield potential of sugar beet. In Germany, winter beets could be sown in August and harvested in summer or autumn of the following year. The prolonged growing season (12 months or more) can result in assets and drawbacks. The cultivation system is more challenging because the longer growing season includes the autumn and winter month.

Winter beets were grown in field trials in Kiel and Göttingen from 2009 to 2012. The experiences from the trials served to outline a cultivation system for winter beet. As it was impossible to grow bolting resistant cultivars, the yield of non-bolting winter beet was estimated by a model from the measured plant development before and after winter.

Cultivation systems for sugar beet sown in spring and for winter beet sown in August are compared concerning different issues like tillage intensity and soil protection, plant protection intensity, energy inputs, greenhouse gas emissions, and costs of cultivation. Differences between growing winter beet and spring-sown sugar beet are weighed up against the possible yield advantage of winter beet. For a comprehensive evaluation, all the different aspects of cultivating winter beet are taken into account.

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