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### **SIMULATIONS OF POTENTIAL YIELDS FOR NON-BOLTING WINTER BEET**

**Simulation du potentiel de rendement de betteraves automnales résistant à la  
montaison / Simulation des Ertragspotenzials nicht schossender Winterrüben**

#### **ABSTRACT**

Sugar beets are sown as a spring crop in Germany. Breeders are interested to breed sugar beets capable to be sown in autumn, so called winter beets. These winter beets stay over winter in the field and may provide a fast regrowth in spring from assimilates stored within the beet. This allows an earlier leaf growth and light interception in spring. Current varieties would start bolting in the following spring as a non-bolting winter sugar beet variety does not yet exist.

Potential yield advantages of non-bolting winter beets therefore only can be estimated by using of an appropriate plant growth model simulating the yield formation from fundamental yield physiological principles. We used a modified dynamic growth model for spring beets to simulate the potential yield of non-bolting winter beets for different sites across Germany considering also drought stress effects. The results show a potential yield surplus (20-30%) for non-bolting winter beets depending on site conditions.

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