

Abstract Submitted
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Dynamic Allocation of Sugars in Barley¹ L.C. CUMBERBATCH, A.S. CROWELL, B.A. FALLIN, C.R. HOWELL, Duke University and TUNL, C.D. REID, Duke University Department of Biology, A.G. WEISENBERGER, S.J. LEE, J.E. MCKISSON, Thomas Jefferson National Accelerator Facility — Allocation of carbon and nitrogen is a key factor for plant productivity. Measurements are carried out by tracing ¹¹C-tagged sugars using positron emission tomography and coincidence counting. We study the mechanisms of carbon allocation and transport from carbohydrate sources (leaves) to sinks (stem, shoot, roots) under various environmental conditions such as soil nutrient levels and atmospheric CO₂ concentration. The data are analyzed using a transfer function analysis technique to model transport and allocation in barley plants. The experimental technique will be described and preliminary results presented.

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