

## Plant Growth Attributes of Brassicaceous Cover Crops

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Nineteen and twenty accessions of brassicaceous cover crops were evaluated at St. Paul, MN and E. Lansing, MI, respectively, in a coordinated trial. Included were brown and oriental mustard (*Brassica juncea* [L.] Czern.), white mustard (*Sinapis alba* L.), rapeseed (*Brassica napus* L.), turnip (*Brassica rapa* L.), radish (*Raphanus sativus* L.), and hybrid forage turnip (*Brassica rapa* x *B. napus*).

Seed was drilled in late summer following an agronomic crop. Percent canopy cover, plant population, flowering, and other growth data for both above and below ground biomass were recorded at 1 to 2 week intervals from late August through mid-November. Plants were analyzed for N content.

Ninety to 100% ground cover was achieved by all accessions about 45 days after planting or upon accumulation of 330 to 390 growing degree days (base 10° C). Average total biomass ranged from 3800 to 7000 kg/ha (1.7 to 3.1 ton/a), and average biomass N accumulation ranged from 105 to 165 kg/ha (95 to 145 lb/a). Radish had greater root biomass and root: shoot ratio than other species.

All of the mustards flowered; none of the turnips or rapeseed flowered. Daikon radish flowered (as did several experimental accessions) while most of the branded radishes (e.g. 'Groundhog' and 'Driller') did not. Several mustards and radishes had green seed pods at the end of the season.

Cover crop growth attributes will be used in developing and/or validating models such as Agricultural Land Management Alternatives with Numerical Assessment Criteria (ALMANAC), Revised Universal Soil Loss Equation, Version 2 (RUSLE2), and Wind Erosion Prediction System (WEPS) in order to better predict the effect of cover crops in cropping systems.

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