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### Evaluation of Intermediate and Tall Wheatgrass for Biomass in the Northeast

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Perennial forage grasses have the potential to be utilized as a biomass fuel for heating which could displace heating oil or propane, both important petroleum products in the Northeast subject to fluctuating prices. Many marginally productive fields in the Northeast are no longer utilized for forage production but could support perennial grasses for biomass production. As part of a Vermont and New York initiative to explore the potential of perennial grasses for biomass energy, replicated small plot field trials were conducted in Vermont and New York from 2009 to 2012 in order to evaluate the production, fuel quality characteristics, and sustainability of various cultivars of intermediate wheatgrass (*Thinopyrum intermedium*) and tall wheatgrass (*Thinopyrum ponticum*). In Vermont, reed canarygrass (*Phalaris arundinacea* L.) was also included as a control treatment since this species is so commonly found in marginal sites. Plots were established in August 2009 and harvested once per year from 2010 to 2012. Yields ranged from 4.5 to 6.7 Mt per ha and 6.7 to 8.7 Mt per ha in the first and second year, respectively, depending on location. Ash content varied by year and location. In both years in Vermont, ash content of the wheatgrass species was lower than that of the reed canarygrass. It was observed that both intermediate and tall wheatgrass were susceptible to lodging which can cause potential soil contamination leading to higher ash content and mineral contamination, thus, negatively affecting their thermal usage as a biomass feedstock.