

Breeding for Improved Switchgrass in Eastern Canada

Erik Delaquis, Gail MacInnis, Roger Samson



REAP-Canada's history with switchgrass in Quebec and Ontario began in 1991. Since then, REAP has been instrumental in the development of the Canadian bioeconomy through key partnerships with both government and private sectors. REAP's breeding program will give producers access to switchgrass germplasm specifically selected to maximize yield and quality in their particular environment.

Our Goal

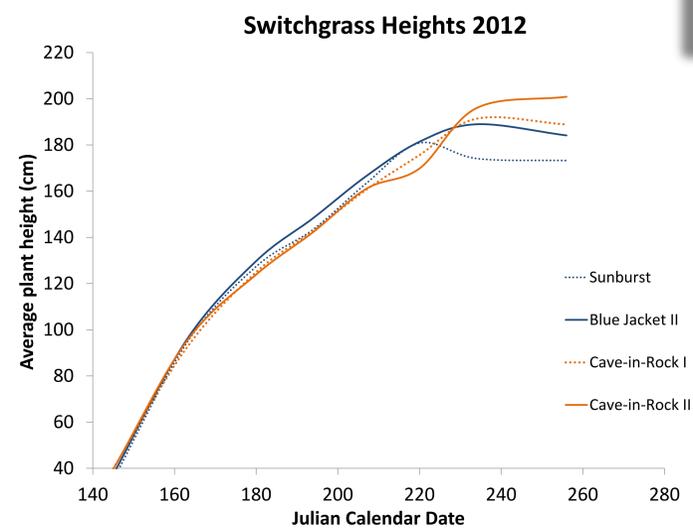
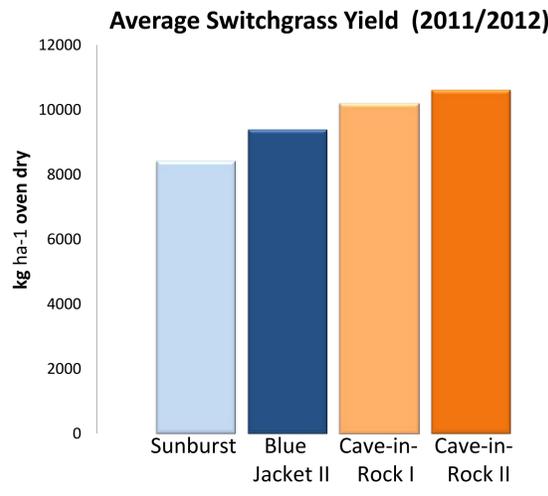
To develop advanced switchgrass cultivars for eastern Canadian farmers with improved yield and biomass quality for fibre and energy markets. We aim to make incremental improvements in agronomic traits including seed size, reduced dormancy, improved seedling vigor, reduced lodging and increased disease resistance.



Our Approach

In partnership with leading switchgrass farmers and scientists, we identify promising switchgrass germplasms adapted to Eastern Canada. We further improve these populations through a simplified breeding program that incorporates several selection methods in both seedlings and mature plants. In particular we place emphasis on selection methods focused on reducing tillering and increasing height and weight of reproductive tillers. To date, we have developed five switchgrass populations, two of which had a 13% higher yield than their parent materials.

Switchgrass Population	Estimated Days to Maturity
Cave-in-Rock	140
Cave-in-Rock II	141
Sunburst	126
Blue Jacket II	128



Blue Jacket III spaced-plant nursery – First Year material

Our Results to Date

Through several cycles of selection we now have advanced populations that are providing promising results in trials throughout eastern North America. Bluejacket II and Cave-in-Rock II are two of our improved germplasms which are proving to be top yielders in performance trials in eastern Canada.

Our switchgrass breeding research has been jointly supported by the Conseil Pour Le Développement de L'Agriculture du Québec (CDAQ) & by CanAdapt Ontario