

Perennial Grasses as Sugar Platform Stocks for Industrial Processing
2003 Study Summary
Cooperative Study with USDA-NRCS Forage Seed and Cereal Research Unit
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During the 2003 growing season the PMC collected forage samples which were sent to the USDA-ARS Forage Seed and Cereal Research Unit in Corvallis, Oregon. The ARS is in the process of analyzing the samples for use as biofuel feed stocks.

The following table lists the accessions that were sampled from the Grass Display Nursery in Field 20 at the PMC Home Farm:

Sand Hollow squirreltail	<i>Elymus multisetus</i>
High Plains sandberg bluegrass	<i>Poa secunda</i>
Sodar streambank wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>
Bannock thickspike wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>
Whitmar beardless wheatgrass	<i>Pseudoroegneria spicata</i>
Goldar bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>
Secar Snake River wheatgrass	<i>Elymus wawawaiensis</i>
Rosana western wheatgrass	<i>Pascopyrum smithii</i>
Sherman big bluegrass	<i>Poa secunda</i>
Pryor slender wheatgrass	<i>Elymus trachycaulus</i>
Magnar basin wildrye	<i>Leymus cinereus</i>
Shoshone beardless wildrye	<i>Leymus triticoides</i>
Bromar mountain brome	<i>Bromus marginatus</i>

Samples were collected on May 6 (vegetative stage), June 3 (boot stage), June 20 (flowering stage) and July 15 (seed fill stage). Four random samples were collected from each accession on each date, air-dried and shipped to the ARS Research Unit for biochemical analysis. The objective of the analysis is to identify the change in lignin, hemicellulose, cellulose, and sugars as a plant grows. The ARS is also conducting detailed greenhouse and growth chamber studies to verify the field sampling.

The PMC also provided to the ARS Research Unit standard seed packets of Magnar basin wildrye, Sodar streambank wheatgrass, Bannock thickspike wheatgrass, Godar bluebunch wheatgrass, and Nezpar Indian ricegrass for the greenhouse studies.

Samples of field run seed (in dirt) of Magnar, Bannock, Godar and Nezpar were also provided to the ARS Research Unit for evaluation of seed processing procedures.

It is anticipated that the PMC will continue to cooperate with ARS to evaluate perennial grasses as sugar platform stocks for industrial processing.