Wheat and Bluegrass Straw Utilization for Papermaking and Fertilizer Production. (A08-pan012259-Poster)

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Abstract:

The overall goal of this interdisciplinary collaboration is to stimulate an integration of the Pacific Northwest paper and agricultural industries for improving their environmental and economic sustainability in the face of declining fiber supplies and increasing needs to develop alternative straw uses. Our objectives are to characterize genetic and environmental variability in wheat straw as a supplemental source of fiber in papermaking. In addition, we are assessing the utility of the straw pulping liquor to produce a fertilizer/soil amendment for recycling nutrients and organic matter back to agricultural soils. Pulping studies are identifying optimal low temperature and pressure-pulping conditions required to produce high quality fiber from physically pre-processed wheat and grass seed straw. Straw morphological differences among wheat and bluegrass cultivars are evident, and longer fibers have been observed under irrigation. Black liquor can improve soil aggregation and nutrient availability, depending on the pulping chemistry selected.

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