

WSU Center for Precision Agricultural Systems
24106 N. Bunn Road
Prosser, WA 99350

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Contact: Dr. Francis J. Pierce

Tel. 509-786-9212

Email: fjpierce@wsu.edu

BENEATH THE SURFACE OF BIOFUEL CROPS

WSU and USDA-ARS researchers receive grant to study how biofuel crop production affects soil conditions.

The production of crops to produce energy will significantly change the agricultural landscape in the United States. Current energy policies mean these changes will occur in a short time span and will escalate over the next few years. According to Dr. Pierce at the Washington State University (WSU) Center for Precision Agricultural Systems, "Corn acreage is expected to increase 15% by 2008, largely due to corn prices driven by corn ethanol demand that already exceed any previous record price." And while researchers know these changes will occur, they don't know how the mass production and removal of these crops will affect the soil and, therefore, the production of crops. To discover answers, researchers at the WSU Center recently received a federal grant to study the effects of removing crop residues from grain and bioenergy crops for biofuel production on soil quality.

Dr. Pierce explains, "While long-term effects on soil quality are important, the short-term effects of a rapid transition to biomass production and removal on a national scale are of immediate interest because they will guide and shape biomass energy policy during the next decade." Over the next three years, WSU researchers will study how changes in crop production practices associated with growing crops for energy production will impact soil quality and ecosystem health. The Columbia Basin is the perfect environment for these studies because the semi-arid climate creates optimal conditions to achieve maximum crop yields. By controlling inputs of water and nutrients, a broad range of conditions can be created in soil with naturally low levels of organic matter and nutrients. "These conditions will allow us to measure carbon and nutrient changes in diverse biomass crop production systems at scales of productivity not possible in previous studies," says Dr. Pierce.

The goal of researchers is to find out how removing biomass for energy affects important soil properties and processes. The answers they discover will guide farmers who will need to make adjustments to how they grow crops for energy production. And the answers will be important to policy makers who will need to adjust national energy policies to provide for maximum production while preserving the natural resource base.

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If you would like more information about this topic, other developments in agriculture, or to schedule an interview, contact Francis J. Pierce, Ph.D, at 509-786-9208 or email Dr. Pierce at fjpierce@wsu.edu.