INTERACTION OF KENTUCKY BLUEGRASS CULTIVATORS, NON-THERMAL RESIDUE MANAGEMENT, AND NITROGEN FERTILIZATION: A TRI-STATE PROJECT

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Improved environmental quality through the elimination of burning of KBG seed crop residue and improved nitrogen use efficiency (NUE), combined with a sound economic seed production system are the primary goals of a tri-state research project that began in June 1992.

This project proposes to measure the combined economic effectiveness of (1) the most current mechanical after-harvest residue removal techniques, (2) efficient nitrogen use strategies, and (3) bluegrass variety response, as a production package needed to eliminate burning and to improve NUE of bluegrass. Improved NUE of bluegrass will result in reduced loss of applied N. Improved environmental quality benefits are expected via reduced smoke emissions and nitrate leaching of air and water, respectively. Another benefit is continued production of bluegrass, a crop that provides excellent erosion control of highly erodible soils thus improving surface water quality by reducing soil sediment load. Additional benefits are potential loss of phosphates and pesticides attached to the soil particles. Finally, the studies in improving bluegrass NUE will likely be applicable to most other crops raised in the northwest, thus reducing potential nitrate contamination of water from use of N fertilizer.

This work is being conducted in the major KBG producing regions of Oregon, Idaho, and Washington. Fields have been selected to represent the primary irrigated (near LaGrande and Madras, OR and Coeur d'Alene, **ID)** and thy land bluegrass regions (Rockford, WA), and at Moscow, ID (University of Idaho Research and Extension Center). Two experiments are being conducted at each location. All field operations except planting, N application, and residue removal are the current best management practices recommended for the area and are performed by the cooperating grass seed grower at the location.

Additional cooperating scientists include: William Young and Neil Christensen, Crop and Soil Science, Oregon State University, Corvallis; Dale Coats, Central Oregon Agricultural Research Center, Madras; Gordon Cook (OSU Ext. Service.) and Gary Kiemnec (Crop and Soil Science, EOSU), LaGrande, OR. Principle funding sources for this work, in addition to USDA-ARS and state funds, include the Pacific Northwest Pollution Prevention Research Center, Seattle and CSRS Grant (STEEP).