

Western Regional IPM Grants Research/Extension Accomplishments Report

INSTRUCTIONS: PLEASE PROVIDE ONLY THE ESSENTIAL COMPONENTS OF ACCOMPLISHMENT WHICH ARE:

1. A CLEAR IDENTIFICATION OF THE PROBLEM/ISSUE ADDRESSED BY THE RESEARCH/EXTENSION.
2. A CONCISE EXPLANATION OF HOW THE RESEARCH/EXTENSION ACHIEVEMENT CONTRIBUTED TO THE SOLUTION OF THE PROBLEM/ISSUE BEING RESEARCHED.
3. THE IDENTIFICATION OF OTHER BENEFITS RESULTING FROM THE RESEARCH/EXTENSION, EVEN IF UNPLANNED.
4. PLEASE ATTACH A SUMMARY OF THE PAST YEARS PROGRESS, ONE PAGE MINIMUM.

CONTACT: Barry J. Jacobsen

PROJECT NUMBER: **W0654**

TELEPHONE: 406 587-6013

PROJECT TITLE: Developing integrated management programs for soilborne potato diseases using mycofumigation, *Trichoderma* sp., pesticides and host resistance

PRINCIPAL INVESTIGATOR: Barry J. Jacobsen

INSTITUTIONAL ADDRESS: 119 Plant BioSciences Building MSU, Bozeman, MT 59717-3150

CO-PIs or TEAM MEMBERS:

THE PROBLEM, ISSUE, OR REASON FOR CONDUCTING THE RESEARCH/EXTENSION:

Potatoes are grown in every Western Region state with more than 749,000 acres of production equaling 57.3% of the total U.S. acreage (USDA Ag Statistics 2002). The majority of the production is in ID (375,000 acres), WA (170,000 acres), CO (78,000 acres), OR (50,000 acres) and CA (44,400 acres). As evidenced in the The Pest Management Strategic Plan for Pacific Northwest Potato Production and in Potato Crop Profiles for Idaho, Washington and Colorado, management of the early dying complex, nematodes and *Rhizoctonia* are high priorities from a production basis. Losses from these diseases are approximately 20% on more than 200,000 acres. Montana seed producers provide approximately 50% of the seed potatoes planted in the Pacific Northwest and their concern is to produce high quality disease-free seed tubers. Alternative management strategies for *Rhizoctonia* black scurf and canker, the early dying complex that involves *Verticillium dahliae* or *V. albo-atrum*, *Colletotrichum coccodes* and root lesion nematodes (*Pratylenchus* sp.) and control of other nematodes including *Meloidogyne chitwoodi* have been identified as high priorities by in the Pest Management Strategic Plan for Pacific Northwest

THE SINGLE MOST IMPORTANT ACCOMPLISHMENT OR BENEFIT RESULTING FROM THIS RESEARCH/EXTENSION:

Black dot resistant and highly susceptible cultivars have been identified.

ADDITIONAL BENEFITS, SUCH AS:

SOCIAL BENEFITS -

ECONOMIC BENEFITS –

Growers have new controls for soilborne diseases of potato that include a new non chemical control-mycofumigation with Muscodor albus 620. Losses of approximately 20% on more than 200,000 acres will be reduced or eliminated by implementation of this research.

ENVIRONMENTAL BENEFITS – Alternatives to broad spectrum highly toxic fumigants have been identified

OTHER -

PLEASE SUBMIT A HIGH RESOLUTION DIGITAL IMAGE REPRESENTATIVE OF YOUR RESEARCH/EXTENSION PROJECT THAT WE CAN USE TO HIGHLIGHT YOUR PROJECT!

When you have completed this form, return to both:

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and

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THIS FORM WAS COMPLETED BY:

Barry J. Jacobsen, Professor of Plant Pathology

(Name and Title)