

Proposal No. _____

The Anderson Research Grant Program 2001 – 2003

Project Title:

Using Varietal Differences in Postharvest Insect Resistance of Northern Great Plains Hard Spring and Winter Wheat Varieties to Increase Profit Potential

Principal Investigators

Name Institution/Agency/Other

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Period of Proposed Project Dates:

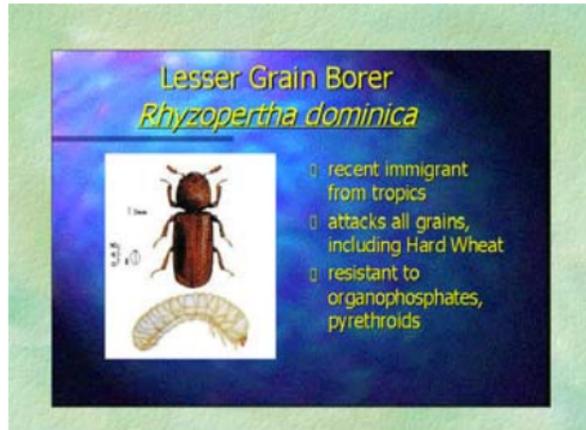
Beginning: 1 October 01 Ending: 30 September 03

Amount Requested (maximum \$20,000 per year for two years):

Year 1: \$15,850 Year 2: \$16,975

ANDERSON RESEARCH FUND - RESEARCH PROPOSAL BUDGET

Problem Identification and Related Research. Hard wheat is grown mainly in northern temperate areas of the world and is considered easy to store due to its resistance to insect attack. Some alarming recent research results now may negate this statement. Recently, the lesser grain borer, *Rhyzopertha dominica* (F.), a southern temperate/tropical insect (see insert) that thrives on hard red wheat has been moving north (Fields and Phillips 1995). *Rhyzopertha dominica* is able to survive Montana conditions, probably due to its ability to locate refugia (microhabitats with the right conditions for survival) in or near the grain mass. The lesser grain borer has been officially found in the postharvest system of Montana since 1987 (Montana Entomology Collection-Bozeman). By



1996, this species had been trapped in commercial grain elevators as well as in on-farm bins in the Helena area, Bozeman, Huntley, Miles city, and the Great Falls area (F. Dunkel, unpublished data). In 1996, however, *R. dominica* was uncommon and not readily recognized by personnel at the grain elevators. In 2001, an informal survey indicated *R. dominica* was readily identified by elevator operator personnel and was ranked by Montana elevator managers as the second most frequently encountered insect in their facility (Watts and Dunkel submitted).

After harvest, varietal suitability for long term storage