Proposal No. _____

The Andersons Research Grant Program
Team Competition

Project Title: Incidence and Spread of Insects from Bucket Elevator Leg Boots

Principal Investigator(s)

Name	Institution/Agency/Other
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(Attach an additional sheet if more space if needed.)

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Period of Proposed Project Dates:

Beginning: 01/01/2009 Ending: 12/31/2010

Amount Requested (maximum $75,000 per year for two years):

Year 1: $74,000 Year 2: $72,000

Problem Identification and Related Research

Commercial grain elevator storage facilities can quickly become infested with stored-product insect pests (Reed et al., 2003 and Arthur et al., 2006). The likely source of insect pests that infest new crop grain in commercial elevators shortly after harvest is previously infested grain carried over from one crop year to the next. Ingemansen et al. (1986) found that the percentage of insect infested bins and the average insect densities in stored oats correlated with the previous year peak insect densities of the stored grain. Recorded data suggested insect pest infestation was carried over from one year until the next in the same bin. Likely sources of elevator areas being infested are grain residues in empty bins, discharge spouts, dump pits, head houses, spills, and residual grain in handling equipment (Dowdy and McGaughey, 1996; Reed et al., 2003; Arthur et al., 2006) Thus it appears that many areas of the grain elevator provide insect pest harborage that contribute to insect pest carry-over from one year to the next; however, the dynamics of insect infestation in grain-handling equipment has not been characterized.