FUMIGATION DECISION MAKING PROCESSES: ECONOMIC LOSSES VS. RISKS

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Management of the stored wheat system needs to include the producer, local elevator, terminal elevator, and processor. The system in the Southern United States is a fumigant intensive system with increased fumigant use at each level in the system. The decision to fumigate and the factors that intimate fumigation vary at each of these levels. Decisions at each point are based on a combination of known insect infestations, potential economic losses, market risks, enterprise risks, and the unkown. One of the primary reasons for fumigation at the farm and local elevator level is the reltive abundance of insects. Timing of fumigation is surprisingly close to the population dynamics of this system. At the local level, subterminal, terminal, and processor, the increasing role of enterprise, market, and economic risk increase the frequency and utilization of fumigants. Some of these are not based on biological occurrence, but on risk reduction philosophies.

We examined this system and implemented a research-based pesticide education program examining the biology and sociology of this system. Managers at all levels monitored their system extensively checking grain moisture, insect and temperature levels more frequently than we often recommend. Factors that can improve management include: monitoring and management of insect migration in and around facilities; improved utilization of temperature to manage molds and insects; and improved use of fumigants.