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Response Procedures and Biosensor Technologies for Detecting Bio-Terrorist Threats in the Grain and Oilseed Industry

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Globally, the grain and oilseed industry is one of the fastest-growing food-producing sectors of the world and is a significant contributor to poverty alleviation, food-security and income generation. Domestically, these industries for the most part have been efficiently evolving and adapting to prevailing economic conditions, environmental regulations, and/or varying governmental policies. In recent years, however, growth has been reduced due to increasing costs, environmental restrictions, and stronger imports leading to lower prices. Due in part to recent trade arrangements, the short- and long-term impacts on the U.S. grain and oilseed sector, policy makers, researchers, and industry leaders are acknowledging renewable fuels requirements and bio-terrorism threats alike (Allen and Houston 2005).

Trade arrangements, renewable-fuels requirements, and bio-terrorism threats are external to the firms in the grain and oilseed industry, and largely outside of their control. These concerns were set in motion by governments, other political bodies, non-government organizations (NGOs), and, more recently, potential enemies of the U.S. Bio-terrorism threats are a relatively new phenomenon but potentially serious enough to warrant an assessment of the consequences by U.S. researchers (NC-1016 2004). This research places special emphasis on bio-terrorism.

Over the past decade, grain and oilseed indus-

tries have come to rely on risk-management tools and government-assisted disaster programs to help them deal with naturally caused high-probability and low-magnitude risk events (for example, hail). Naturally caused low-probability and high-magnitude risk events like the occurrence of disease (mad cow disease in USA or foot and mouth disease in UK) have caught the attention of policy makers and government recently. All firms in the grain and oilseed industry have emergency disaster plans for various events, but it is unknown how many have response procedures for “bio-terrorist events” (low-probability and high-magnitude risk events). A survey will be developed to elucidate the various response procedures of firms in the industry. The role of biosensor technologies for detecting biological agents (toxins, viruses) at firm facilities will also be developed in the survey instrument.

References

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- NC-1016 Multi-state Research Proposal. 2004. “Economic Assessment of Changes in Trade Arrangements, Bio-terrorism Threats and Renewable Fuels Requirements on the U.S. Grain and Oilseed Sector.”

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