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Research Article

COST-EFFECTIVENESS OF AFLATOXIN CONTROL METHODS: ECONOMIC INCENTIVES

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Abstract

Multiple sectors within U.S. crop industries—growers, elevators, handlers/shellers, processors, distributors, and consumers—are affected by aflatoxin contamination of commodities, and have the potential to control it using methods developed at both the pre- and postharvest levels. While methods exist, adoption is low; thus, we seek to investigate ways to increase adoption. We believe there are at least three ways to improve adoption of existing aflatoxin control techniques: (1) providing economic incentives; (2) proving and/or improving cost-effectiveness of the control methods; and (3) education/outreach across all the relevant industry sectors. Frequently within a commodity there is a mismatch in economic incentives, such that different sectors bear the brunt of aflatoxin costs at disproportionate rates. For example, corn and cottonseed

growers bear most of the cost for aflatoxin control, whereas in peanuts and tree nuts, shellers and handlers incur the costs of aflatoxin control. Thus, peanut and tree nut growers may have no economic incentive to apply preharvest aflatoxin control. Postharvest control options are limited and in many cases are not yet approved by the EPA or FDA. The Kaldor-Hicks efficiency criterion may help to resolve this economic dilemma. If this criterion was to be applied to aflatoxin control in peanut and tree nuts, growers could be compensated by shellers/handlers to adopt preharvest aflatoxin control methods. However, the control methods must be cost-effective for this compensatory arrangement to work. We present three case studies of cost-effectiveness to reduce aflatoxin contamination in different crops: AF36 in cottonseed, Bt in corn, and Afla-Guard in peanuts.

Keywords:

aflatoxin control methods biocontrol Bt corn economic incentives cost-effectiveness

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Related Research Data

[Biocontrol of aflatoxin in corn by inoculation with non-aflatoxigenic *Aspergillus flavus* isolates](#)

Source: Biocontrol Science and Technology

[The Economic Impact of Bt Corn Resulting from Mycotoxin Reduction](#)

Source: Journal of Toxicology Toxin Reviews

Modification of immune function through exposure to dietary aflatoxin in Gambian children.

Source: Environmental Health Perspectives

[Aflatoxin Reduction in Corn Through Field Application of Competitive Fungi](#)

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