DETECTION OF *Bacillus* SPECIES FROM LOCAL SAMPLES, IMPLICATIONS IN AGROTEERRORISM

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**Abstract**: *Bacillus* species are ubiquitous Gram-positive organisms found throughout the world. Members of this genus are diverse organisms that can be isolated from animals, insects and soil. These bacteria produce toxins that are specific to the environment from which they are isolated. Members of the *Bacillus cereus* group include the insect pathogens *Bacillus thuringiensis* and *Bacillus larvae* and the human pathogens *Bacillus cereus* and *Bacillus anthracis*, the etiological agent of the zoonotic disease anthrax. These organisms are genetically similar and were initially predicted to be one species. The link between these organisms has heightened the concern for more vigilance in food safety and agroterrorism. We have identified viable *Bacillus* species on organically grown local and international food in Mississippi markets. Samples tested positive for toxin production and spore formation. Samples taken from the same market also displayed differences in *Bacillus* infectivity, suggesting that random sampling of agriculture might not prove effective in identification of *Bacillus* contamination on food. While routine washing can decrease exposure to *Bacillus* species, consumers do not normally wash these samples with soap or bleach prior to consumption. The ability of *Bacillus* spores to attach to food makes it a particularly important mechanism for introduction of a biological weapon. Indeed, most of the samples that tested positive for *Bacillus* are handled by large numbers of individuals, are placed in well ventilated areas and are prepared without cooking.

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