

Wasithee Paoleng 2009: Influence of Aflatoxin Contamination on Seed Quality and Storability of Peanuts. Master of Science (Agriculture), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Juangjun Duangpatra, Ph.D. 117 pages.

Studies on the influence of aflatoxin contamination on seed quality and storability of peanuts were conducted in five peanut cultivars: Kasetsart 50, Kaset 1, Tainan 9, Khon Kaen 60-3 and Khon Kaen 6. Two groups of peanut seeds of each cultivar with aflatoxin contamination at lower than 20 ppb and higher than 20 ppb were divided into two portions. The first portion of each cultivar was hand shelled, put in the plastic containers and stored at controlled storage of 10° C – 75 % RH. The second portion of the unshelled dried pods of each cultivar was put in jute bags and stored at ambient condition. Seed quality analysis and aflatoxin contamination were determined every 3 months throughout the storage period of 9 months. It was found that peanut seed quality of those that having lower than 20 ppb aflatoxin contamination were not different from those that higher than 20 ppb aflatoxin contaminated peanuts. After 9 months storage, peanut seeds which were lower than 20 ppb aflatoxin contamination before storage were lower in aflatoxin contamination than those peanuts that were higher than 20 ppb aflatoxin contamination. Maximum aflatoxin contamination before and after 9 months storage was 52 ppb and 94 ppb respectively. Field emergence tests of those of 9 months storage peanuts showed that peanut seeds which were lower than 20 ppb aflatoxin contamination and higher than 20 ppb aflatoxin contamination before storage were not different in field emergence, plant growth as determine by plant height and canopy width, pod yield and seed yield. Field emergence of every seed lot was higher than 95%. Therefore the aflatoxin contaminated peanuts at 20 ppb to 52 ppb could be stored for 9 months before being used as seeds for planting.

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Thesis Advisor's signature