

PRESENT STORAGE PRACTICES AND AFLATOXIN CONTAMINATION OF MAIZE (*Zea mays* L.) IN MAJOR MAIZE-PRODUCING AREAS IN ANURADHAPURA DISTRICT

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The study aimed to evaluate the efficacy of postharvest handling and hygiene practices in mitigating pest infestation, pathogens, and aflatoxin contamination across different storage conditions in major maize-producing divisional secretariat divisions (DSD); *Galenbidunuwewa*, *Horowpathana*, and *Kahatagasdigiliya* in Anuradhapura district. A comprehensive survey involving 162 respondents (93% of farmers and 7% of collectors) was conducted to assess prevalent storage practices. Maize samples obtained from collectors were subsequently analysed for aflatoxin content. The average quantity of maize stored by farmers and collectors was 1700 ± 730 kg and 708000 ± 1640 kg, respectively. The average maize storage period for farmers was 1.5 ± 0.34 months, while for collectors it was 7.5 ± 1.25 months. The majority of farmers stored maize in a bedroom (34%) or kitchen (30%) in their houses. Other storage locations included the living room, special storage room, and granary. Maize harvesting durations ranged from 75 to 130 days, with the most common duration being 80 to 90 days (30% of participants). The primary challenges in storage, reported by respondents in order of importance, were insect infestation, mould proliferation, and rodent attacks. Aflatoxin was detected in stored maize samples obtained from 73% of collectors, with no significant regional differences ($p > 0.05$). Respondents commonly lacked preventive practices such as harvesting maturity, sorting, and proper harvesting methods. Sun drying was the predominant preventive measure for aflatoxin. Results indicated no significant regional variation in stored grain quality parameters, including percentages of broken grains ($8.02 \pm 0.87\%$), insect damaged grains ($16.56 \pm 1.43\%$), weight loss ($9.20 \pm 3.60\%$), moisture content ($13.37 \pm 0.61\%$), aflatoxin content (132.58 ± 21.89 ppb), foreign matter content ($1.225 \pm 0.33\%$), and damaged grains ($1.654 \pm 0.56\%$). However, the aflatoxin content was higher than the maximum limit in all samples. These findings suggest consistent challenges and practices in postharvest management across regions, emphasizing the need for strategies to address aflatoxin contamination in maize storage.

Keywords: Collectors, Moisture content, Postharvest practices, Storage challenges, Storage facility