

探討密封包裝對玉米中害蟲 與黃麴毒素累積之影響

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一、前言

二、將 PICS 包裝袋應用於西非玉米採收後儲存階段

三、玉米於儲存階段使用三層式密封包裝袋對 *Prostephanus truncatus* 的影響

四、評估密封性包裝在不同儲存環境下對於防止害蟲生長的有效性

五、結論

摘要

根據國際農糧組織(FAO)估計撒哈拉以南非洲估計每年大約損失 37 %。在非洲地區以玉米為主食，造成玉米採收後損失的主要原因為昆蟲、齧齒類動物、黴菌，昆蟲造成的損失依地區不同約 50 - 80 %。昆蟲生長與繁殖最適溫度在 25 - 30 °C，常見的害蟲為 *Sitophilus zeamais* 及 *Prostephanus truncatus*，害蟲造成的玉米損傷以及蟲體攜帶的 *Aspergillus flavus* 孢子易使 aflatoxin 累積汙染。因採收後的儲藏管理較缺乏，使害蟲與黃麴毒素汙染，造成糧食浪費與食品安全問題。使用密封性的 Purdue Improved Crop Storage (PICS) bags，實驗結果顯示袋內玉米水分含量不因外在環境溫濕變化而改變，且袋內的低氧/高二氧化碳環境對 *S. zeamais* 的致死率達 95.8 % - 100 %、使得 *A. flavus* 無法生長，減緩黃麴毒素的累積。且相較於以聚丙烯袋儲存的玉米在儲藏 6 個月後重量損失達不可接受的程度，當糧食損失超過 5-6 % 時，損失每增加 1 %，售價即減少 0.6 % - 1 %，使用 PICS 袋的產品重量損失為可接受程度，使用此包裝可確保穀物價格並達食品安全目的。

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