Effect of storage on physiochemical parameters and Aflatoxin production in non-roasted chilli powder in local markets

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Abstract

Chilli or *Capsicum annum* is used worldwide in seasoning, coloring and flavoring food. This experiment was conducted with dried chilli powder to study as to how the physiochemical parameters are altered during storage in local markets. Usually chilli powder tends to degrade its physiochemical composition considerably with storage and the objective of this study was to ascertain what conditions are favorable to maintain the original quality of chilli powder during storage in local markets. The tested parameters were Moisture content, Total ash content, Color, Ascorbic acids, Total phenolics, Antioxidant activity and pH of non-roasted chilli powder. Meanwhile, presence of Aflatoxins was also monitored qualitatively. Room temperature and average supermarket temperature were provided with three light settings, namely normal, direct and the dark box resulting six combination of storage conditions extended for 04 month period. Results revealed that mean moisture content of chilli powder is about 10.19 per cent in storage, while mean ash values around 6.22% and pH values with an average of 4.76. The mean Ascorbic acid content is 21.71 mg/100g whereas average total phenolics is about 36.49 mg/ 100 g (DW). The ASTA color value was 232.84 units. The mean IC50 value is found as 4.26 µg/100g. The interaction among light condition, temperature and brand is found to be significant. Storage in dark boxes resulted negative impacts on presence of Aflatoxin in every sample. Accordingly, the dark storage in supermarket at ambient temperature of 22 °C to 24 °C range was found to be the best storage condition for chilli powder to maintain its original quality.

Key words: Chilli powder, Mycotoxin, Physio-chemical parameters, Storage

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