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QUALITY LOSSES DURING STORAGE OF RED CHILI PEPPER

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The main objective of this paper is to determine the present quality of RCP stored on an industrial scale in Turkey by conducting surveys. The surveys focused mainly on parameters such as insect infestation, color change, aflatoxin formation and microbial flora during the storage of RCP in traditional warehouses. Aflatoxin was detected in almost all of the RCP samples taken from traditional storages in the factories visited. Aflatoxin B1 levels in the samples varied from <0.2 to 216.5 µg/kg. Aflatoxin B1 levels exceeded the legal limits in samples taken from 11 out of 23 factories. At only twelve factories, were very low aflatoxin B1 detected. In the surveys two insect species, namely *Lasioderma serricornne* (F.) and *Plodia interpunctella* (Hübner) were identified on RCP samples. *L. serricornne* had a very high infestation rate of 69.6% on RCP samples while *P. interpunctella* had a low infestation rate of 13%. The color of chili spice powder is due to the presence of red-pigmented carotenoids which easily oxidize due to effects of heat, light and oxygen when chilies are processed by drying and grinding into spice powder. According to our results there is an urgent need for Turkish chili pepper industries to develop and adapt an integrated chili pepper production system including novel and innovative manufacturing and preservation technologies for aflatoxin elimination and quality preservation of colour, taste and aroma, and free from insects and other contaminants. It is expected that the development of such a production system will contribute to the local chili pepper industries and provide the answer to high quality preservation, prevention of toxin formation and insect development. Thus, successful implementation of these novel technologies in manufacturing and preservation of Turkish chili pepper will directly increase its marketability to European and other countries and contribute to the local economy.

Key words: Red chili pepper, aflatoxin, *Lasioderma serricorne*, *Plodia interpunctella*, color, microbial flora