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FUMIGATION OF DRIED FRUITS IN TURKEY

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Turkish edible nuts and dried fruits production is extremely high and dominates the world markets in this respect. Turkey is one of the most important dried fig producing and exporting countries, with a production amounting to some 50.000 tonnes annually, comprising from 50 to 55% of the international market. Besides dried figs, Turkey is accepted as the largest exporter of hazelnuts, supplying about 85 percent of the world hazelnut exports. In addition, more than 50% of the world dried apricot and raisin production is supplied by Turkey. Several species of moths, beetles and mites are very common pests of dried fruit. These species live on a variety of dried fruits ranging from dried figs, raisins, dried apricots and hazelnuts. In spite of the advances recorded in many aspects of stored product pest control, fumigation being a non-residual chemical treatment has remained a main-stay for control of stored product insects. The dried fruit industry in Turkey used methyl bromide (MBr) for fumigating processed or unprocessed dried fruits to control insect infestations for many years. MBr was used extensively in the dried fruit industry because of its short exposure time. MBr is already banned in the post harvest sector in Turkey since 2004. The only chemical alternative to MBr available in Turkey is phosphine. Phosphine is a proven major tool in protection of food, seed and feed stocks against insect pests in storage, including commodities, structure, containers, chambers, and stacks under tarpaulin world-wide. Phosphine is characterised as a slow acting fumigant to which insects can develop resistance. But, fumigation studies, involving phosphine on dried fruits in Turkey are generally limited. This research was undertaken to provide background information for the exposure period needed to kill the insect under laboratory conditions and to determine the exposure times needed to give complete control of the main pests of dried figs fumigated with FUMI-CEL™, a magnesium phosphide formulation in stacks under tarpaulins.

Key words: Fumigation, dried fruits, Turkey, methyl bromide, phosphine