**Title** Phosphine as a methyl bromide alternative in the dried fig sector in Turkey

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**Abstract**

Turkey is a major player in the world dried fruit and nut market. Methyl bromine (MBr) is used to control storage pests that infest during drying and storage. Turkey has decided to ban MBr starting from 2007. The search for alternatives to MBr to control storage pest problems is of vital importance in the dried fig sector compared to other dried fruit and nut. Magnesium phosphide (Fumi-cel) was tested as an alternative to MBr fumigation and provided 100% mortality against the two major storage pests of dried figs, fig moth (*Ephestia cautella* (Pyralidae: Lepidoptera)) and fig mite (*Carpoglyphus lactis* (Carpogphidae:Acari)). The study investigated the impact of magnesium phosphide on dried fruit quality after application and during storage at ambient conditions. The variables, magnesium phsophine at 650 and 1000 ppm for 4 or 5 days were tested in Volcani cubes (33 $m^3$) at premises of TARİŞ/İzmir, and MBr was at two monthly intervals were: average fruit weight (g), moisture content (% Dried Moisture Tester), total soluble solids (% refractometer), water activity (at 25°C by Novosina water activity meter), firmness (Nippon), titratable acidity (% citric acid), pH and skin colour (L, a, b, a/b, Minolta chromometer). The effect of phosphine applications on integrity of the fruit surface was examined under the scanning electron microscope. There were higher water activity levels and moisture content in phosphine treated fruit than in controls. The changes in quality parameters examined during storage were similar in all treatments.