

Abstract:

Turkey is one of the major dried fruit and nut producing countries. Methyl bromide (MeBr) is the common fumigant to control storage pests that infest during drying and storage. Compared with other dried fruits and nuts, storage pest infestation threatens dried fig production the most. MBr is regarded as a major anthropogenic compound that depletes the ozone layer. Furthermore, MeBr is a toxic gas and can pose risk to human health if over-exposure or accidents occur. The Montreal Protocol and the phase-out of methyl bromide have increased the urgency to search for new technologies. This project will lead to the phase-out of MBr as a stored product treatment in the Turkish dried fig sector by evaluating the economic and technical feasibility of two alternative technologies: 1) CO₂ at elevated temperatures and/or CO₂ in combination with pressure, and 2) magnesium phosphide in combination with heat in gas tight chambers. In addition, the project will include activities for ensuring a proper technology transfer, through a training programme and dissemination of information directed at actual MeBr users in the Turkish dried fig industry. Until today, field surveys are carried out to evaluate the importance of target species. Dried fig fruits are treated with magnesium phosphide and CO₂ at various concentrations and at different temperatures. Quality parameters such as total soluble solids (%), titratable acidity (%), pH, dry matter (%), water activity (WA), colour (L, a and b values by Minolta chromometer) and sugaring (%) are assessed in treated and non-treated samples.