**ABSTRACT:**

In occupational health and safety, noise is one of the biggest worldwide risk factors and it is a particularly big problem in industry. Olive oil mills play an important role in Spanish industry since they account for 45% of the world’s olive oil production. Although noise is a serious occupational hazard in this industrial sector, scientific literature does not seem to contain any research study on the subject. The aim of this paper is to analyse noise exposure levels and their effects on the hearing of olive oil mill workers. For this purpose, a retrospective longitudinal observational study was conducted over the course of a decade, using a sample of 115 olive oil mill workers and analysing their exposure to noise and hearing levels. Among the main results it must be highlighted that, during the period under study, there was a notable rise in the noise levels to which these workers are exposed, although the results of the ELI index for olive oil mill factory managers (the workers with the highest noise exposure) underwent an improvement in contrast with reception yard workers, whose ELI index did not.

**KEYWORDS:**

Occupational, hygiene, industry, noise, olive oil mill, level, health

**HIGHLIGHTS:**

* The level of noise exposure doubled during the period under study.
* The results of the ELI improved for olive oil mill factory managers.
* The results of the ELI did not improve for reception yard workers.

**INTRODUCTION**

Noise is one of the risk factors with the biggest worldwide impact on occupational health and safety. According to the 6th European Working Conditions Survey, 19% of all workers are exposed to such loud noise levels that they have to raise their voices to talk for over one quarter of the working day. The survey also associates noise with other illnesses, particularly cardiovascular problems, in addition to stress and an increased risk of accidents (Eurofound, 2016). Links between noise and other health problems are extensively documented in another study (Ganime et al, 2010).

Noise exposure as a serious problem has been analysed in various different sectors. For instance, Aybek et al. (2009) analysed tractor drivers’ exposure to noise in Turkey, related to the type of tractor cabin. Fernández et al. (2009) studied 40 building workers over the course of 2 hours, using a sound meter and noise dosimeter, finding that between 60% and 70% of the typical tasks they do exposed the workers to over double the maximum permitted noise limits. Zytoon (2013) analysed the noise exposure of fishermen from 24 small or medium-sized fishing boats in Egypt, finding high noise levels in the engine room and even on deck, handling the tackle. Chen et al. (2012) analysed the noise exposure of 9 workers in hospital operating rooms (surgical technicians, nurses and a surgeon) over the course of two days using a noise dosimeter. They found that the legal limits were not surpassed, although noise levels were exceeded during certain intermittent activities with drills or other power tools and during cleaning work.

Hearing loss has also been studied by other researchers, like Singh et al. (2013), who analysed it in 165 metalworkers in India, finding that over 90% of the workers in the sample suffered from a significant loss of hearing at medium and high frequencies. Sadhra et al. (2002) studied 14 workers before and after work at discotheques and other university entertainment venues, finding significant hearing losses of over 30dB at high and low frequencies in more than 29% of them. Irgens et al. conducted a study of 605 members of the Norwegian Royal Navy, finding that 31.4% had hearing losses of over 25 dB in each ear at 3,000, 4,000 or 6,000 Hz, with a particularly high prevalence among sailors, engine room workers and electricians.