

Guest Editorial

Agriculture

1. Introduction

World agriculture employs over one billion workers, making up one in three of all employed workers [1]. In certain regions, such as sub-Saharan Africa, over 60% of workers are involved in agriculture. In most countries, agriculture is recognized as one of the most hazardous industries. There are a host of injuries and illnesses in agriculture that have been consistently identified through epidemiological and community-based studies as in need for controlling due to their high reporting rates among agricultural workers. These include musculoskeletal disorders, respiratory disease, noise-induced hearing loss, pesticide-related illnesses, and increased reporting of cancer cases [2–12]. However, since it has been consistently shown that musculoskeletal disorders (MSDs) are the most common of all occupational non-fatal injuries and illnesses for farm workers, especially those who are involved in labor-intensive practices [13], most of the papers in this special issue address various aspects of this important problem facing world agriculture.

2. Special issue overview

This special issue represents a cross-sectional look at seven studies from various regions of the world that focus on assessment and prevention of injuries and illnesses in agriculture, with a main emphasis on MSDs. The issue starts with a study from the US (Anton et al.) on the important topic of the aging workforce in agriculture. The study shows that motor latencies in the upper extremities of older persons in an agriculturally-based rural population were longer than studies of non-agriculturally based populations. This highlights the importance of objectively assessing and diagnosing MSDs among older farmer populations, and calls for specific prevention strategies to abate these disorders.

The second paper presents an approach for identifying MSD risk factors on Korean farms (Kotowski et al.). The paper responds well to the void that has been identified related to the paucity of studies related to occupational safety and health conditions in Korean agriculture. The observational approach will be useful for prioritizing high-risk agricultural jobs in Korea that need immediate attention and more in depth evaluation. The approach could also be replicated in other countries where agricultural safety and health exposure assessment studies are limited.

The third paper (Thinius and Jakob) presents an ergonomic evaluation of German dairy farms. The study showed high prevalence of MSDs in multiple body regions among dairy farm workers, especially females, and emphasized the need for action to deal with these disorders.

The fourth and fifth papers address Swedish agricultural health and safety concerns. Lundqvist and Svennefelt's paper emphasizes the need for collaboration among various constituencies, including governmental, educational, and industrial partners to effectively tackle health and safety issues and hazards in Swedish agriculture. The approach and lessons learned could be useful to other countries that have similar agricultural practices, climate, and crops as Sweden's. Pinzke et al. documented traffic incidents involving agricultural tractors in Sweden between 1992 and 2005, and highlighted the high number of both adolescents and elderly drivers involved in these incidents. This study provides further evidence about the need to better regulate tractor driving on roads, especially among adolescents, since there has been building evidence about their limited physical capabilities of handling older tractors [14–16].

The sixth paper (Barrero et al.) documents the implementation of an intervention to reduce physical demands in the Colombian flower industry. The intervention relied on educational and demonstrational tech-

niques to reduce non-neutral postures and showed encouraging, though somehow mixed, positive outcomes. The adopted approach could be considered in similar highly-repetitive upper extremity tasks (e.g., grapevine pruning, strawberry harvesting, etc.), especially in situations where resources to implement engineering controls or worker's aids are limited.

The last paper (Swangnetr et al.) describes a pain/symptom survey among farmers involved in rice cultivation in Thailand. The paper focused on field preparation tasks as they constitute the most physically demanding part of the cultivation cycle. Lessons learned from the study highlight the differential symptom reporting between experienced and inexperienced workers, as well as the utility of screening tools in identifying tasks and practices with high potential for developing MSDs among rice cultivation workers and other agricultural workers.

It is hoped that this special section will stimulate further interest from ergonomics, health, and safety researchers and practitioners around the world to consider addressing various health and safety challenges faced by farm workers, especially in industrially developing countries, where farm workers still constitute the majority of the total workforce, as well as in industrially developed countries, where labor shortages in agriculture are becoming more prevalent.

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