

## Occupational health surveillance programs for Iranian farmers

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### ABSTRACT

Farmers and animal breeders all around the world are at high risk of exposure to different risk factors including zoonotic agents (infections and diseases that are naturally transmitted between vertebrate animals and humans), organic dusts, endotoxins, allergens, pesticides and other chemicals. It is well known that work-related injuries, illnesses and deaths are mainly preventable through providing basic occupational health services for all workers at the workplace. Occupational health and safety (OHS) concentrates on the causes of work-related injuries, illnesses, deaths, and the reduction of those risks that can be physical, mechanical, biological or chemical hazards in the workplace. The main purpose of occupational health surveillance program in agriculture is to detect early signs of work-related ill health among farmers who are exposed to certain health risks and to act on those findings to improve workers' health and safety by appropriate preventive measures. This paper is an introduction to a large project which will address health surveillance activities about exposure to biological, chemical and physical risks among farmers and animal breeders in the region of Abadan district in southwest Iran.

**Keywords:** agriculture settings, farmers, health surveillance activities, Iran, risk assessment.

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### Introduction

There are about 1.3 billion workers engaged in agricultural sector in the world which is about half of the world's workforce. Around 9% of agricultural workers are from industrialized countries and about 60% are living in developing countries. Limited access to health care in rural areas is generally associated with the fact that rural populations have lower health status than people

in the urban areas. There are about 1.1 billion people who are below the poverty line in developing countries and they are more in rural areas compared to urban areas.

In general, agricultural workers are exposed to a wide range of occupational hazards, such as ergonomic stresses, sunlight, viruses, inorganic dust, pesticides, and other chemicals. Agriculture is one of the most hazardous sectors, in terms of fatalities, injuries and work-related ill-health.

According to International Labor Organization (ILO), workers suffer approximately 250 million accidents every year which result in about 170,000 deaths. In the last decade, fatal accident rates in the agriculture sector were among the highest and have been increasing, while in other sectors rates have generally decreased. Millions of agricultural workers are seriously injured in accidents which involve agricultural machinery or get affected by toxic effects of pesticides and agrochemicals. In addition, widespread under-reporting of deaths, injuries and occupational diseases in the agricultural sector implies that the real picture of the occupational health and safety of farm workers is worse than official statistics reports. Farming is one of the few industries in which the families (who often share the work and live on the premises) are also at risk for fatal and nonfatal injuries. It is the largest sector for female employment in many countries, especially in Africa and Asia (1-2).

Despite half of the world's population being economically active and spend at least one third of their time in the workplace, only 15% of the workers have access to basic occupational health services. Occupational diseases among farm workers are more difficult to quantify than other workers and such illnesses among the self-employed are hardly identified as occupation-related (3). At present, a number of countries are reforming their health systems based on the principles of primary health care (PHC) to improve the quality of their services. In Iran, the Environmental and Occupational Health Centre is responsible for managing occupational health programs and activities at national level. One of the main objectives of integrating occupational health services in PHC in Iran, as mentioned at the Hague international conference, is providing access to basic health services and prevention of occupational and work-related diseases and injuries for all workers at the workplace (4).

With regards to the underreporting of occupational diseases in agriculture setting, available data clearly show a significant health risk, and therefore the need for health surveillance

programmes in southwest Iran becomes necessary. The execution of health surveillance programmes for agricultural workers depends upon the possibility of creating a system which is able to reach the workers at their workplaces. Collaboration with the employers' associations will support enterprises in several issues, including risk assessment and management. The health surveillance programme can be organized as a component for all workers, based on physical examination, chemical risks, electrocardiography, hearing and lung functions examinations, and using specific tests addressing risks like vibration, physical overload, chemicals, biological agents and allergens. The examinations must be decided based on risk assessment and health surveillance outcomes. It must be noted that health surveillance activities should be carried out by qualified occupational health professionals (5).

For several reasons, health surveillance programs are important for detecting ill-health at the early stages and consequently enabling employees' awareness about hazards at work on their health. They can also provide a unique opportunity to highlight the role of training and education for employees (for instance the importance of using personal protective equipment at the workplace) (6).

The engaged methods of health surveillance will vary based on the type of hazard. It may include medical surveillance, biological monitoring, inspections and investigating the records before and after exposure to hazardous agents to see whether the appropriate risk assessment has been chosen or other actions are needed (7).

In conclusion, there is little information available on the prevalence and incidence of occupational ill health in agricultural workers in Iran, especially in Abadan region. At present, there is poor access for agricultural workers to occupational health services at the work place and knowledge of occupational risks and diseases in agriculture in both occupational physicians and general practitioners seems inadequate. This situation affects the possibility of defining the

burden of disease attributable to specific risk factor present in the sector and identifying priorities for interventions. The main research project will address at providing scientific advice to Ministry of Health and Medical Education (MOHME) and policy makers in the government regarding occupational hazards of farmers and animal breeders in agriculture settings and the possible solutions.

### Conflict of Interests

Authors have no conflict of interests.

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