



Occupational Cancer, What about Informal Workers in the Agriculture Sector? The Case of Chile

Álvarez-Jara P and Müller-Ramírez C*

University of Concepción, Chile

*Corresponding author: Claudio Müller-Ramírez, University of Concepcion, Chile, Email: claudiomuller@udec.cl

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Abbreviations: CAREX: Carcinogen-Exposure; PAHO: The Pan American Health Organization.

Editorial

We raise our concern about cancer risks associated with occupational activities performed by Chilean workers in the agriculture sector. It is known that long term occupational exposures to many chemicals and agents (e.g. pesticides, ultraviolet radiation, diesel-combustion and silica-based particulate matter), present in the agriculture sector increase the probability of developing cancer (e.g. lung and breast cancer, myeloid leukemia) among workers [1].

While formally employed workers rely on in-place safety protocols (e.g exposure prevention training, personal protective equipment), and well-established exposure limits for specific carcinogenic agents as occupational protection strategies, informal workers lack this condition. This places them at higher risk of developing cancer and other non-communicable diseases. Besides, informal workforce is characterized by older populations with low replacement rates and low educational status, thus occupational chronic exposures are more common in their lifespan [2]. Also, little information is available regarding modifiable cancer risk factors (e.g. alcohol and tobacco consumption, sedentarism) among these workers [3]. Table 1 shows common carcinogens found in the Chilean agriculture sector.

According to the Chilean Ministry of Agriculture last published employment bulletin, which considered data collected between January and April of 2023, approximately

234,000 workers were informally employed, representing 40% of the workforce in the agriculture sector nationwide. As to gender of workers, men represented 80% while women 20% of the workforce [4].

Name of agent	IARC classification
Diazinon ^a	2A
Malathion ^a	2A
1,3-Dichloropropene ^a	2B
Glyphosate ^a	2A
Diesel (engine combustion)Benzene	1
Polyaromatic hydrocarbons	1 and 2A
Silica	1
Ultraviolet radiation	1

IARC: International Agency for Research on Cancer
Group 1: Carcinogenic to humans Group 2A: Probable carcinogen to humans

Group 2B: Possibly carcinogen to humansa: pesticide

Table 1: Carcinogenic agents found in Chilean agriculture-related work environments.

We believe that local authorities should focus their efforts in reducing the number of informal workers and also consider other strategies that contribute to prevent and reduce the number of cancers related to occupational exposures in the agriculture sector, such as Carcinogen-Exposure (CAREX) programs, which have been supported by The Pan American Health Organization (PAHO) during the last decade. These programs aim to identify occupational carcinogen agents in work environments as well as to estimate the number of workers potentially exposed [5]. Also, migrants and seasonal workers should be considered

since they use to encounter disparities in cancer outcomes [6].

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