

## Chlorpyrifos: Situation in Armenia: English Summary

Agriculture is one of the key contributors to the Armenian economy and the main source of employment. It accounted for about 13.94% of GDP in 2018. The steady decline in GDP in agriculture since 2017 in the overall structure of Armenia's gross product in 2021 reached 10.2%. The decline in agriculture is partly due to the difficult epidemic situation of COVID-19 throughout the country and the involvement of Armenia in hostilities in the Nagorno-Karabakh conflict zone and a number of territories of Armenia in 2020-2021 were affected.

The history of registration and use of chlorpyrifos in Armenia begins in the mid-1970s, when Armenia was part of the USSR. Decisions on the use of pesticides were made centrally at the level of the Council of Ministers of the USSR. The implementation body within the Ministry of Agriculture of the USSR - Agricultural Chemistry, which was represented in Armenia by ArmSelkhozKhimiya, was responsible for the supply, distribution and control of the use of pesticides. After independence, pesticides were dealt with by the Ministry of Agriculture of Armenia. Currently, this function is carried out by the Ministry of Economy and the Food Safety Inspection Body of Republic of Armenia, in particular the Phytosanitary Department.

Armenia does not produce pesticides, including chlorpyrifos. All pesticides are supplied by local supply companies and individuals i.e. personal providers. Every year the volume of supplies of preparations containing chlorpyrifos to Armenia increases. Only in 2021 there was decrease in volume of chlorpyrifos imported in Armenia due to difficult pandemic situation. However, in 2022, 56 trade names of chlorpyrifos containing pesticides compared with 24 in 2021 were already registered and allowed to use. Chlorpyrifos containing preparations were imported in 2021 from Belgium, India, China and Ukraine in amount of 89344 liter and 12 000kg in 2021. In 2022, 16 companies supply preparations containing chlorpyrifos.

In Armenia, chlorpyrifos-based preparations are widely used to control a number of pests on crops such as wheat, barley, sugar beet, eggplant, pumpkin, cabbage, radish, green peas, pepper, carrot, cucumber, tomato, zucchini, watermelon, melon etc.

Due to limited access to information in state institutions, within the framework of this study, monitoring was carried out in pesticides stores in Yerevan, which made it possible to identify manufacturers and importers of chlorpyrifos containing preparations imported to Armenia in 2022. Chlorpyrifos-containing pesticides are imported from 5 Chinese pesticide companies: Nanjing Saturn Crop Protection Co. OOO, Nanjing Essence Fine –Chemical Co., Ltd., Saturn Crop Protection, NANJING BESTGREEN CHEMICAL CO., Ltd., Shijiazhaung Fait IMP & Exp Co., Ltd. The vast majority of generics containing chlorpyrifos are imported from China. Chlorpyrifos containing pesticides were also imported from 4 Indian companies: The Scientific Fertilizer Co Pvt Ltd, Agro Life Science Corporation, GLOBE AGRITECH PRIVATE LIMITED, LEEDS LIFE SCIENCES PVT. Israeli pesticide manufacturer ADAMA Makhteshim Ltd, Dow AgroSciences Ltd from England and Dow AgroSciences de Colombia S.A. from Colombia, the Belgian company LifeScience Benelux SPL/Arysta LifeScience, "Plant of Agrochemistry" LLC from Ukraine and HARO International from Bulgaria also imported to Armenia chlorpyrifos containing pesticides.

According to information from representatives of the scientific community and senior staff of the ministries of environment and health, no scientific studies have been conducted in Armenia over the past 30 years on the impact of chlorpyrifos on human health and the environment. In the period 2020-2021, no cases of poisoning were reported, while in 2019 an increase in cases of insecticide poisoning was recorded compared to the previous two years, which is most likely due to the Covid 19 coronavirus pandemic, which paralyzed all administrative resources in relation to everything, not related to the pandemic. Most cases of poisoning are associated with the use of insecticides, which is 63.3%. 29% of insecticide poisonings are caused by pesticides containing chlorpyrifos.

Today, there is no definition of “highly hazardous pesticides” in the legislation of Armenia, despite the fact that Armenia is a party to all chemical conventions and treaties.

During personal meetings with the leadership of the Food Safety Inspection Body, the issues regarding the ban of chlorpyrifos, or at least the reduction of the volume of purchases and replacement of them with alternatives were discussed. Decision-makers are convinced that phasing out chlorpyrifos and replacing it with alternatives will result in significant crop losses and correspondingly large losses. There is a clear need for a national campaign to phase out the use of chlorpyrifos in agriculture, or at least severely limit its use. Essential to the national campaign to phase out the use of chlorpyrifos is the work to raise the awareness among pesticide regulators, farmers, distributors and the private sector, consumers, healthcare professionals, academia and the media about the risks associated with the use of chlorpyrifos and other highly hazardous pesticides and the availability of safer alternatives.

The government does not conduct any needs assessment that could determine to what extent a product is actually needed for its current use, what specific benefits it provides, and whether alternative pest control approaches are effective, less risky, or products that pose less risk are more available. There is no policy in Armenia regarding restrictions on the use of chlorpyrifos and preparations containing it. However, at the level of individual initiatives and projects of both farmers and organizations, agro-ecological approaches to agriculture are being introduced, including the policy of Integrated Pest Management (IPM). Information materials prepared under this and other programs such as GGF are widely used and distributed during our seminars and trainings in regions (provinces), for example, within the framework of the **WoLeRE Women Leading in Rural Entrepreneurship in Armenia (WoLeRE)**, as part of USAID RED-NEO project jointly implemented with CARD (Center for Agrobusiness Development). The main issues of the workshops among rural women were "Entrepreneurship and Generation of Business Idea"; "Gender-based Violence in agriculture". The distributed information materials were dedicated to

- Beekeeping
- The current situation of the herbal market; the sale values of wild collection (kg/AMD); the factors affecting herbs
- Chlorpyrifos as a child brain-destroying pesticide
- Integrated Pest Management of potato pests (IPM)
- Integrated Pest Management of wheat and barley pests (IPM)
- Integrated Pest Management of cucumber pests (IPM)
- Integrated Pest Management of tomato pests (IPM)
- Sustainable and organic agriculture

- Greenhouses
- HHPs usage in agriculture in Armenia
- PERSUAP (Pesticide Evaluation Report and Safer Use Action Plan)

**As part of this project, we made recommendations presented in the review.**