



## Overview of Chlorpyrifos Usage in Russia

### English Summary

Analysis of chlorpyrifos production and use in Russia has shown widespread use of highly hazardous pesticides (HHPs), including chlorpyrifos, bifenthrin and cypermethrin. These substances are on the list of HHPs prepared by the Pesticide Action Network (PAN) and meet the HHP criteria adopted by the World Health Organization (WHO) and the United Nations' Food and Agriculture Organization (FAO).

The HHPs are defined by WHO and FAO as "*pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or Global Harmonized System (GHS) or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous.*"<sup>1</sup>

As of January 2020, 106 pesticides used in Russia are on the list of highly hazardous pesticides according to PAN criteria. 38 HHPs were unregistered or are banned worldwide, according to PAN's consolidated list. For example, chlorpyrifos is banned in Palestine, Saudi Arabia, South Africa, and Vietnam.

Moreover, chlorpyrifos-based products are prohibited for use on food crops in the United States and EU countries. Chlorpyrifos has always been banned in countries such as Denmark, Finland, Germany, Ireland, Latvia, Lithuania, Slovenia, and Sweden.

In Russia, preparations based on chlorpyrifos are applied against biting and sucking pests of sugar beet (flea beet, leaf aphids, meadow moths, common beet weevil, moths, crumbs, moths, crumbs, codling weevils), apple trees (codling moths, leafhoppers, moths, scab moths, aphids, mites); grapes (nesting moth); alfalfa (phytomass beetle); pastures and wild vegetation (non-species locusts)<sup>2</sup>.

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<sup>1</sup> <https://www.unep.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/highly-hazardous-pesticides-hhps>

<sup>2</sup> <https://www.fumigaciya.ru/sites/default/files/public/page/2011-09/15/otravleniyahlorpirifosom.pdf?ysclid=lcycptpr40670075268>

It is important to note that in Russia, the preparations based on chlorpyrifos are used not only in agriculture. They are allowed for indoor use, including in hospitals and kindergartens. They are also widely used for indoor disinfection and are available in stores. At the same time, for example, the use of such products indoors was prohibited in the USA as long ago as 1996, precisely because of the danger posed by chlorpyrifos to children.

Preparations based on chlorpyrifos are produced by companies in Russia and imported from other countries, including India and the EU states. In addition, the permitted levels of chlorpyrifos residues in food established in Russia are significantly higher than those established in the EU. In the EU, the acceptable levels for residues in food and agricultural products do not exceed 0.01 mg/kg, while in Russia, they range from 0.05 mg/kg in corn, sugar beets, and rapeseed to 20 mg/kg in Chilean pepper. These high levels of chlorpyrifos residues in food products allow contaminated food to enter the Russian market, jeopardizing the health of Russian citizens.

Unfortunately, there is no scientific data from Russia related to chlorpyrifos health effects. Information about chlorpyrifos toxic effects is based on data from other countries, mainly the US and the EU. The lack of such information in the country leads to chlorpyrifos being widely used in agriculture and indoors. According to Luzhnikov E.A. (2012), organophosphate pesticide poisonings account for about 5% of the total number of patients admitted to specialized toxicological centers. The in-hospital mortality rate of this pathology in Russia as a whole and today is about 10 -15%.<sup>3</sup>

Given the toxicity of chlorpyrifos to living organisms, primarily children, it is necessary to stop the import, production, and use of chlorpyrifos-based products for indoor and agricultural use as soon as possible. The maximum acceptable levels of chlorpyrifos in agricultural products must be based on the most stringent numbers. To date, the limit of 0.01 mg/kg set by the EU is the most progressive, capable of protecting human health from exposure to this particularly dangerous substance.

Only the introduction of strict national legislation and its enforcement will prevent the importation into Russia of highly hazardous plant protection chemicals banned in other countries. These substances include chlorpyrifos, chlorpyrifos-methyl, bimeprin, cypromethrin and more than 100 highly hazardous pesticides and insecticides, which are legal in Russia, but banned in many other countries.

The current report on chlorpyrifos production and use is the first overview of this highly hazardous pesticide produced, imported and used in Russia in agriculture and indoors. The information package for sharing with the Russian Ministry of Agriculture also included a request to phase out chlorpyrifos containing pesticides to protect people, prioritizing children's health.

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<sup>3</sup> <https://www.rosmedlib.ru/ar/book/ISBN9785970422267.html>