

# **Can the Pollution Potential of Pesticides be Mitigated by Trade in Food Production? Global Evidence**

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## **ABSTRACT**

Usage of pesticides has been essential for food production but this has raised concerns of potential threats to the environment. International food trade is necessary to ensure food security with the increasing global food demand. It has been observed that by engaging in the food trade, exporting and importing countries experience contrasting effects on their respective environment. The study proceeds with the objective of exploring the moderating effect of international food trade on the potential pollution from pesticides. It also focuses on identifying the differences of such effects between net food-importers and exporters. Secondary data was obtained for the top nine net food-exporters and net food-importers for total agricultural pesticide usage (tonnes), cereal production and imports (tonnes) from the world-integrated trade databases. Two regression models were performed for the two sets of countries with pesticide usage as the dependent variable. Cereals imports and production were identified as the independent variables. This study revealed that cereal production has a positive significant effect on the potential pollution caused by pesticide usage for both sets of countries. Cereal imports had a negative significant effect on pesticide usage for net food-exporters revealing that importing food can act as a trade-off for pesticide pollution potential for net food-exporting countries. Net food-importing countries had a positive and insignificant effect in this regard. Hence, trading off pesticide pollution potential through food trade cannot be done in net food-importing countries.

**Keywords:** International Food Trade, Pesticide Pollution, Cereal Trade