



THE USE OF AGROCHEMICALS AND MORTALITY BY STOMACH CANCER IN BRAZIL BETWEEN 1979 AND 2015



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Introduction

• With the implementation of policies arising from the green revolution, the use of pesticides was imposed (Pignati et al., 2017).

• Several diseases, including cancer, are commonly associated with the use of pesticides (Carson, 2010; Carneiro et al., 2015), with stomach cancer standing out for the high number of deaths it causes (Blair et al., 1992).

• This article aims to discuss the use of pesticides and their relationship with stomach cancer mortality in Brazil.

Methodology

• Ecological type epidemiological perspective.

• The data of area harvested from crops (permanent and temporary), between 1979 and 2015, in hectares, were obtained through Municipal Agricultural Production of the System of the Brazilian Institute of Geography and Statistics.

• Stomach cancer mortality data were obtained through the online Cancer Mortality Atlas of the National Cancer Institute, considering the national cases between the years 1979 and 2015.

• After data collection, descriptive data analysis was performed. Then, correlation and regression were tested.

• For all statistical analyzes the SPSS Statistics software, version 20, was used.

Results

Table 1: Calculation for the use of pesticides based on the harvested area of soy, corn and sugarcane in Brazil in liters (2015)

Agricultural crop	Harvested Area (hectares)	Average use of pesticides (liters/hectare)	Use of pesticides (liters)
Sugar cane	10,111,376	4.84	48,939,059.84
Corn	15,406,010	6.14	94,592,901.40
Soybean	32,181,243	12.17	391,645,727.31
TOTAL	57,698,629	-	535,177,688.55

Source: Elaborated by the authors, based on the databases IBGE-SIDRA (2017), INCA (2016) and methodology of Pingati et al. (2014).

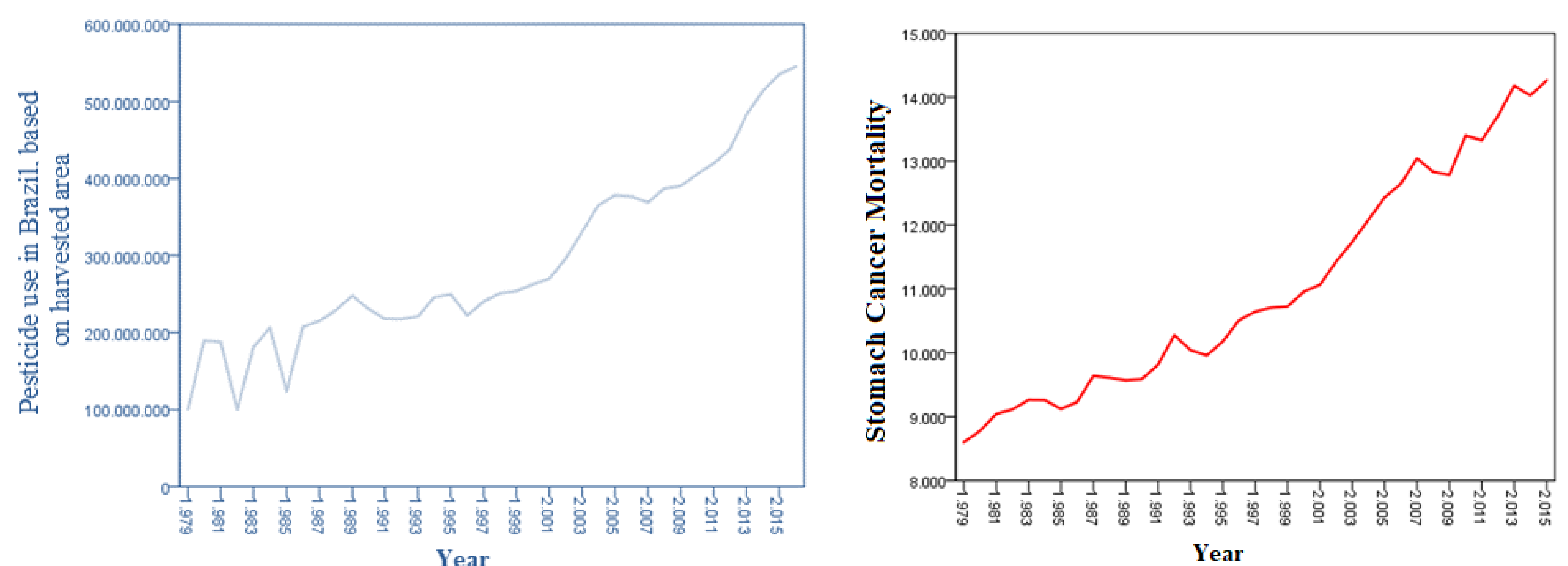


Figure 1: Use of pesticides in Brazil, based on the area harvested from soybeans, corn and sugarcane between 1979 and 2015 and death from stomach cancer in Brazil between 1979 and 2015.

Highlights

- The use of pesticides per harvested area of soybeans, corn and sugarcane, combined with the data on death from stomach cancer, revealed that the variables have a strong positive correlation ($r^2 = 0.934$).
- The use of pesticides was a probable factor that contributed to the increase in the number of stomach cancer in Brazil during the last decades, configuring yet another evidence that the super dependent chemical production model needs to be rethought.

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