

**THE INFLUENCE OF CLIMATIC FACTORS ON DENGUE EPIDEMIES IN THE CITIES
CUIABÁ (MATO GROSSO STATE) AND LAVRAS (MINAS GERAIS STATE), BRAZIL,
USING STATISTICAL METHODS**

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- **ABSTRACT:** *Dengue is one of the main problems of public health in the world. It is estimated that about 2.5 billion people are now at risk of dengue. Given this current context of the disease, we have developed a model of temporal series in an attempt to identify the climatic factors that contribute to the spread of dengue in the cities Lavras (Minas Gerais state) and Cuiabá (Mato Grosso) in Brazil. The series for analysis were the number of dengue reported cases, series of minimum, mean and maximum temperature, relative humidity of air, and rainfall index. Models better adjusted to the data according to the methodology of Box and Jenkins and a regression model that relates dengue cases and climatic factors were found. In Cuiabá, rainfall and maximum temperature influence the number of dengue cases, while in Lavras, besides rainfall and maximum temperature, mean temperature and humidity influence. The determination coefficients R² in Cuiabá and Lavras were 0.31 and 0.68, respectively. In the second set for Lavras, we consider the series of maximum and minimum temperature and precipitation with an R² of 0.67, and the maximum temperature and precipitation kept influencing the number of dengue cases. It was not possible to propose a single model to explain the behavior of the number of dengue cases for the two cities. This may be strongly related to climate variability. However, both models have a common component, which is the influence of maximum temperature with a lag of four months.*
- **KEYWORDS:** *Time series; dengue; climate.*

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