

## Evaluation of the sanitary condition of rural properties located in the city of Campinas/SP.

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In this research, the sanitary condition of rural properties in the Pedra Branca region (Campinas, SP) was analyzed. Analyses of microbiological and nitrate parameters made in water wells used for human consumption showed values greater than the maximum permitted by the current potability standard.

Keywords: sanitation, rural, water.

### Introduction

In 2012, more than 700 million people in the world still had no access to safe drinking water and 2.5 billion people had no access to sanitation. About 70% of these people lived in rural communities(1). Latin America also has deficiencies in the universalization of sanitation systems, and only 55.2% of Brazilian municipalities have sewage collection services and a smaller percentage of municipalities perform some kind of treatment in domestic wastewater(2). The municipalities that have greater sanitary problems are those with population of less than 50 thousand inhabitants, generally predominantly rural population.

Given this reality, the objective of this research, which is part of an extension project(3), was to evaluate the sanitary condition of rural properties in Pedra Branca region (Campinas, SP), whose population is mostly composed of small farmers dedicated to fruit production. In this research interviews were made to address the reality of sanitation in these properties followed by well water and tap water samples analysis.

### Results and Discussion

Physicochemical parameters used for water analysis were: apparent color, nitrate, ammonia, chloride, turbidity and pH. The microbiological parameters analyzed were total coliforms and *Escherichia coli*. The methods for the analysis followed the *Standard methods for the examination of water and wastewater*. Well water and tap water samples were collected from 16

farms. The results for microbiological parameters and nitrate showed the greatest deviation from the potability standards established by Brazilian Health Ministry(4). About 50% of properties exhibited nitrate concentration higher than 10 mg/L, while 75% of the wells showed the presence of total coliforms and about 37% *E. coli* contamination. The high nitrate concentration in well water might be due to the chemical fertilizer used by most farmers or may be a case of contamination by domestic wastewater due to the proximity between pit latrines (septic tank) and wells. In this case, the presence of chloride can corroborate this hypothesis.

### Conclusions

These results corroborate with research carried on other locations in Brazil and the world by pointing out the need for a closer look at the issue of Rural Sanitation, which has historically been overlooked in national and international sanitary planning. It should be emphasized the importance of community participation for effective rural sanitation projects and therefore knowledge sharing is needed (3).

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