

## The Ingestion of Contaminated Water with Pesticides and Heavy Metals as Probable Cause to Chronic Renal Failure

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### ABSTRACT

*The water itself is not a nutrient, but its value in daily use is in the utility given to it intake for drinking, hygiene and food preparation. The quality of water ready for daily intake could save some epidemiological association with diseases, not only infectious nature, also with chronic diseases such as CRF, chronic renal failure and undoubtedly that socioeconomic status is immersed in the development of epidemiological events that somehow reflect the need to implement Epidemiological studies in order to clarify such association. The exposition to pesticides requires the interest of scientific investigation and the generation of public politics applied in our country, Mexico.*

**Keywords:** *water quality, daily intake, epidemiological association, chronic renal failure, epidemiological events, public politics applied*

### INTRODUCTION

The water to seep into the earth in the form of groundwater, including wells and springs. The sources of water supply can become contaminated when they are in contact with garbage, human and animal excrement and pesticides and insecticides and wastewaters, causing diseases, there are diseases from hydric origin, such as; *Waterborne diseases. Water-based disease, Diseases water shortages, Vehicles of infection related to water.* The purification of water is performed to remove inappropriate substances, and ensure that it is fit for human consumption<sup>1</sup>. There are several publications where the water's problematic is approach as disease causing in humans, in Costa de Marfil, intensive and inappropriate use of fertilizers and pesticides on crops affect water quality of BuyoLake and its watershed. In hot water systems such as BuyoLake, these pollutants are easily transformed into other compounds that can get into the food chain, fish samples confirmed the presence of toxins and clearly show that pollution levels increase as these compounds rise to the food chain. Malaria, diarrhea, and respiratory diseases are increasing along malnutrition and poverty is expanding despite decades of economic growth<sup>2</sup>.

In Americas also exist reports linking contaminated water with pesticides as a cause of renal failure, in Costa Rica was described that water contaminated by cotton, bananas and sugar cane crops, where 30 patients said they acquired the disease from the consumption of contaminated water.

To such assertions Information Centre and Advisory Services Health and the International Union of Food and Agriculture joined, a report of care for patients with CRF Health Center of Chichigalpa, in 2006, states that in the town there are about 3,200 patients diagnosed with chronic renal failure who come in 70-80% from the municipality of Chichigalpa. According to Carmen Rios sugar cane plantations were used Gramoxone, Radox, Fura give, soakers and defoliant, Ansar and Other in the early 60's.<sup>3</sup> Also in another municipality in the country, it was found that in the span of one year 17 people died, enough cases to the community La Peineta inhabited by 98 families, the results of the study made by the Water Microbiology Laboratory of the Department of Biology, Faculty of Sciences of the National Autonomous University of Nicaragua-León tested positive in samples took from the three wells from which the population consumes water chlorpyrifos, Methyl Pharation, remains of DDT, Dieldrin and urea<sup>4</sup>.

In our country also have been found similar situations, as occurred in Sonora where results were presented at least three factors have contributed to the disappearance of natural breeding of fish and shrimp, this due to the leaching of fertilizers and pesticides in water drains, in addition to the siltation caused by the continuous deposit, in the past, stick water in the industry, and inadequate sewage discharge into drains<sup>5</sup>. Another important cause of disease caused by water is the presence of heavy metals such as described in the Altos de Jalisco where 125 wells were analyzed and exposure levels were estimated concluding that Selenium exposure poses a potential risk for population's health, since in most cases is higher than that recommended by international health organizations, but even this is not high enough to trigger the presence of selenosis<sup>6</sup>. In the municipalities Asientos and Tepezala in Aguascalientes State was detected the abundant presence of metals and minerals in the water withdrawn for domestic supply and on function of preventing health problems, the president of the CODAGEA announced the installation of water tanks in nursing homes in these municipalities, which provide themselves with purified water to the population, this water will be purified with activated carbon sand filters and UV lamps. These actions come to complement those already made in the municipality of Calvillo, where it is believed that water consumption is related to the development of kidney diseases, in the municipality of Calvillo it has 38 for drinking water wells, which are analyzed continuously finding the presence of fluoride and iron in some communities, arose the belief and uncertainty of the population that kidney diseases are caused by the presence of these elements in drinking water wells, it has not been confirmed yet<sup>7</sup>.

In studies at the Autonomous University of Aguascalientes and the Institute of Health of the State of Aguascalientes, unpublished, both in seeking to determine whether the consumption of drinking water in the municipality of Calvillo is related to the presence of kidney diseases, where it has increased its prevalence. Calvillo, Aguascalientes is dedicated since the early 40's to Guayaboagriculture, where for the elimination of pests insecticides are used indiscriminately, which accumulate in the ground and come to join the drinking water of the Municipality; found among are Fulidol, Slaughter, Furadan, Malathion, Parathion among others; also people who use these chemicals have little training for proper use of them, and do not apply security measures and hygiene, or when the activity, or at home, associate this fumigations are those performed by SAGARPA office in this county, where the chemicals that are used, people mention ignore them, and the frequency of fumigations. In both studies was determined the presence of heavy metals in almost all of drinking water wells of Municipality, the type of fluorine, sulfur, bicarbonate among others. It is vital the following reflection: Is it that the recent increase in cases of kidney disease is related to water consumption and the indiscriminate use of pesticides, or the presence of heavy metals in drinking water? Is it necessary do new studies to clarify whether these relationships exist?, and if is positive, allowing immediate preventive measures to avoid the occurrence of new cases of kidney patients is required?.

Ecological studies are mainly used to assess water quality and allow for side opening doors for conducting other studies where somehow the strength of the correlations between the presence of contaminants and their effects is increased<sup>8, 11</sup>.

## DISCUSSION

Since there are no reports about the relationship between water quality Calvillo Aguascalientes, the development of research in this context will allow to estimate the epidemiological risks and among other things generate hypotheses for further work in this field, since so particularly the impact of the quality of such water in development of adverse effects on health status is unknown and in the nutritional status of children transcendent way, without overlooking the rest of the population.

The research performed in this type of social context, can capture the perception of people facing environmental problems in which they live and that suddenly takes you face such problems, where public health and nutrition converge to highlight the need to look for solutions grounded in scientific methodology based on the results obtained, without rambling between imagination and reality that prevails in its socio-cultural context. Well worth thinking M. Tolba, 1974 expressed as follows; If we continue doing things the same way, we always get the same results, hence arises the need to change.

Had to take a look at the environmental legislation of our country, certainly there is a need for the creation of public policies, where the benefit of the human population should take precedence, it is not possible that in Europe and United States have been known for more than 10 years pesticides side effects such as Furadan and other in health, concretely impact the genome, and its effects range from mutations to cancer, otherwise these developed countries would continue giving them useful, even if in some country are not used some chemicals, the same should be included as a use value or prevention indicators adverse effect on human population, hence why, it is essential to meet the social, cultural and environmental needs among others to engage in positive modification environmental environments, health education and thereby cause the birth of healthy lifestyles, which in turn would avoid the high cost health at household level and at the level of health institutions, ie it would decrease the cost derived from the high incidence of diseases, both acute and chronic and this finally be the reflection of thoughtful and profit-oriented population shares significantly from that vulnerable where the need is in improving their lifestyle.

Finally deepen main ways of determining whether a chemical is harmful, evaluate how it is absorbed in the body, preventing exposure as its effect on the body, and removed, to set routes study to investigate how it is absorbed, how it is used and released by the body. In the case of certain chemicals, animal testing is required. Animal testing may also serve to identify adverse health effects such as cancer or birth defects. Without laboratory animals, scientists would lose a basic method to get information needed to make wise decisions to protect public health<sup>11</sup>. The exposition to pesticides requires the interest of scientific investigation and the generation of public politics in our country, Mexico<sup>12</sup>.

## CONCLUSIONS

The field work done so far suggests that there is concern and uncertainty in the population as to whether or not there is a risk to health from everyday water use and quality of the vital liquid, which makes necessary the incursion of this issue in research on the eve of causing the generation of healthy lifestyles, what is required to penetrate directly in vulnerable populations to guide intervention strategies.

Countries developed represent a use value as indicators, that is, chemicals or chemicals that were already prohibited in those countries, derived from research which already mutagenic tested - carcinogenic simply should not be used in our country derivative its effect already researched and tested.

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