

Food, Agrotoxics and Health

Even with the boundaries and thematic and methodological specificities involved in the organization of a scientific event, the 2012 World Nutrition Congress in Rio has in fact taken on the features of a summit conference. In going beyond the restrictions of an international meeting of scholars, the event has extended into the open, universal realm of citizenship. In other words, into the sphere of the rights and obligations that should mobilize the democratic state, civil society and the corporate representations in the identification, discussion of alternatives and social/community monitoring of human problems.

In the context of these considerations, it is worth highlighting a document that is set to become historical: the so-called "Abrasco Dossier" on agrotoxics in Brazil.¹ Indeed, more than an academic or corporate manifesto, it should be understood, publicized and, above all, supported as a movement of ideas concerning one of the most crucial problems of our time: the impacts of agrotoxics on health. It is a timely and necessary stance, given the damaging effects already in evidence and the growing potential risks of using so-called agricultural defensives in Brazil. Just to begin with: a) we are world champions in the use of agricultural biocides; b) of the 50 agrotoxics most used in Brazil, 22 are prohibited in the European Union, including in nations where the manufacturers' head offices are located. More than a paradox, it is a crime that cannot be tolerated.

Historically, agrotoxics have had a significant role in increasing agricultural output, being among the four pillars of the Green Revolution proposed by Norman Borlaug² for the rapid expansion in grain production (legumes and cereals) in the world, especially as of the 1960s and 1970s, followed by fruit, vegetables and cultivated pastures. However, five decades later the accumulated evidence, whether in the specific field of agricultural production or principally in the health and environment sector, has led to a critical review of its effective validity. More and more agrotoxics, newer and newer generations of defensives have led to the conclusion that this is a tunnel with light neither in it nor at the end. Norman Borlaug himself, winner of the Nobel Peace Prize for the formulation of his strategy, has recognized the failure of some assumptions, such as the indiscriminate mechanization of cultivated land and the contamination of soils and agricultural products. Silent Spring by Carson,³ also a Nobel prizewinner, sent warning signals to the President of the United States, at the time (and still) the world's largest food exporter. President John Kennedy set up a group to establish monitoring and control measures for the production, sale and utilization of agrotoxics in the USA, at a time when around one and a half kilograms of these products were being applied per hectare and were moving towards the two kilo mark.

In Brazil today not two kilos of agricultural defensives are used per hectare, but almost five kilos per inhabitant! And we are still permissively carrying on, with the hardly praiseworthy title of world champion in the use of agricultural chemicals, contaminating rivers and oceans, land and sea animals and people of all ages with the damaging effects of handling, inhalation and ingestion. It's a risk that has spread, or rather has become universal. In Brazil, all of us, every day, in practically all meals, ingest a little agrotoxic, as if it were a natural condiment of Brazilian cuisine. Even breast milk, the purest, most natural and most complete food for the initial stages of life outside the womb, is now becoming a vehicle of biocides produced by the agricultural chemical factories. The data is striking: according to the Brazilian Health and Safety Agency ANVISA,¹ in the 2010/2011 harvest, the sale of agrotoxics in Brazil reached 936 thousand tonnes or 7.3 billion dollars, accounting for almost 20% of world expenditure and leaving the USA in second place with a global market share of 17%. In the 71 million hectares cultivated permanently or temporarily in Brazil, 12 litres per hectare are pulverized with an average environmental/occupational/dietary exposure of 4.5 litres per inhabitant.¹ However, for different reasons it is women and children, notably in the gestation/breastfeeding period that are most exposed to the dangers of these poisons, inappropriately called defensives.

If current trends are maintained, the situation will get even worse in the next ten years. It is expected that the production of commodities, represented principally by chemical-dependent monocultures, should increase

55% for soya, 56% for corn, 45% for sugar, 50% for milk and around 30% for the three main types of meat: beef, pork and chicken, that use soya and corn massively in feeds.

In the face of this scenario, the crucial question is: what are the implications for health?

Apart from the rarer and more visible acute effects, there are a variety of less perceptible, and therefore more dangerous, chronic consequences. Without going into the details of specific products (insecticides, fungicides and herbicides), the document of the Brazilian Association of Postgraduate Courses in Public Health (ABRASCO) mentions the manifestations of chronic intoxication: retarded neurotoxic effects, chromosomal alterations, liver and kidney damage, peripheral neuropathies, heart dysfunction, contact dermatitis, bronchial asthma, Parkinson's disease, various types of cancer, pulmonary fibrosis and hypersensitivity, not to mention other less common or less studied consequences. These references are contained in a document by the Pan-American Health Organization/World Health Organization (PAHO/WHO) that is already 16 years old.⁴ If it were duly updated, the list would undoubtedly be much longer.

Concerning mother and child health, there is a book that has already become a classic: "The Farmer and the Obstetrician", by Michel Odent⁵. Translated into several languages and reproduced in a variety of editions, the book is a thematic, conceptual and allegorical analogy of the industrialization of birthing, with the widespread use of caesarians and the industrialization of modern agriculture and livestock farming, through successive technological innovations, among which the growing and diversified demand for agrottoxics is highlighted. The mass agriculture and livestock farming in particular ecosystems, such as The Great Lakes of North America and the dammed lowlands of Holland and Japan, implying the progressive accumulation of agrottoxics in the water, has resulted in controlled observations of serious consequences for children's health, because of the contamination of their mothers' organism during pregnancy.⁵ In 10-year evaluations since 1966, it was found that the ratio of male to female fetal deaths in Japan increased successively from 2.50 to 3.10 (1976), to 6.19 (1986) and finally to 10.01 in 1996, or a four-fold increase in three decades. The ecological correlation is established with the concentration of agrottoxics in the water, adjacent land and foodstuffs (fish and crops) of these locations. However, at the same time and in the same proportion, congenital anomalies have increased in male fetuses: hipospadia and abdominal incarceration of the male gonads. Quite significant differences in the occurrence of mental development deficit in children have also been shown. Odent⁵ goes as far as predicting that, at the rate at which the situation is getting worse, in the future there may be a need for women, before conception, to undergo a process of de-intoxication of the agrottoxics accumulated in the organism, in order to reduce the serious consequences for their offspring. It would be a completely new stage in prenatal – or rather pre-conception – care.

It is indeed a threatening situation, justifying the pertinence and timeliness of the ABRASCO dossier, publicized and accepted unanimously by the participants of the World Nutrition Congress as a warning to society and to Brazil as a nation.

Malaquias Batista Filho ¹

Mariana Navarro Tavares de Melo ²

^{1,2} Instituto de Medicina Integral Prof. Fernando Figueira (IMIP).

References

1. Carneiro FF, Pignati W, Rigotto RM, Augusto LGS, Rizollo A, Muller NM, Alexandre VP, Friedrich K, Mello MSC. Dossiê ABRASCO: um alerta sobre os impactos dos agrotóxicos na saúde. Rio de Janeiro: ABRASCO; 2012. 1ª Parte. 98 p.
2. Borlaug NE. Feeding a human population that increasing crowds a fragile planet. Acapulco, MX: International Society of Soil Science; 1994. 15 p.

3. Carson RL. Silent Spring. Greenwich: Fawcett; 1962.
4. OPAS (Organização Pan-Americana da Saúde). Ministério da Saúde do Brasil. Secretaria de Vigilância Sanitária. Manual de Vigilância de populações expostas a agrotóxicos. Brasília, DF; 1996.
5. Odent M. O Camponês e a Parteira: uma alternativa à industrialização da agricultura e do parto. São Paulo: Ground; 2003. 189 p.