



Association pour la santé environnementale du Québec  
Environmental Health Association of Québec

## ECO-JOURNAL

October 2022

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### What is in my Tea?

Have you ever stopped and considered what was actually in your tea? There is more than just tea leaves in your cup of tea!

Numerous studies have found high levels of heavy metal, chemicals, pesticides and mould in large swathes of the tea market across the world. In 2014, CBC tested black and green teas, including Canada's most popular brands: Lipton, Red Rose, Tetley and Twinings, No Name, Uncle Lee's Legends of China, King Cole and Signal. Half of the teas tested contained pesticide residues above the allowable limits in Canada. And eight of the 10 brands tested contained multiple chemicals, with one brand containing residues of 22 different pesticides (News , 2014). A Greenpeace study found that nearly 94% of the tea samples tested in India (from where much of the tea sold in Canada is sourced) contained at least one of 34 different pesticides, while 59% contained a toxic cocktail of more than 10 different pesticides (*Trouble Brewing: Pesticide Residues in Tea Samples from India - India Environment Portal | News, Reports, Documents, Blogs, Data, Analysis on Environment & Development | India, South Asia*, n.d.). And in 2018 a Chinese case study, "Accumulation of Heavy Metals in Tea Leaves and Potential Health Risk Assessment," assessed that heavy metals - Lead, Cadmium, Chromium, Arsenic etc – can occur in tea garden soils as a result of the application of pesticides and chemical fertilisers containing heavy metals (Zhang et al., 2018).

But it's not just the tea leaves you have to look out for, it's the convenient tea bags they come in too. Those chic-sounding tea-bags, variously marketed as 'nylon', 'silky sachet', or 'luxurious mesh', are made of plastic, specifically, food-grade nylon or polyethylene terephthalate (PET), viscose rayon, or thermoplastic. These mass-manufactured tea bags are liable to leach chemicals and particles of plastic (aka microplastics) into your tea





(Hernandez et al., 2019). The recent study conducted at McGill shows that steeping a single plastic tea bag at brewing temperature (95 °C) releases approximately 11.6 billion microplastics and 3.1 billion nanoplastics into a single cup of the beverage (Hernandez et al., 2019). If it's not a plastic tea bag then it's a paper tea bag treated with epichlorohydrin, a compound mainly used in the production of epoxy resins. Epichlorohydrin hydrolyses to '3-MCPD' when contact with water occurs. '3-MCPD' is a carcinogen and shown to cause cancer in animals, impair fertility, and weaken immune function (*What, My Tea Bag Is Plastic!*, n.d.). The paper tea bags are also often bleached to make them appear whiter, resulting in small amounts of toxic chlorine compounds in the tea bag paper which brews into your cup of tea.

Don't give up hope just yet!

A recent study conducted in 2019 found that rinsing dried tea leaves before brewing - which is a traditional way of preparing oolong tea in China- reduced the pesticide risk levels by 5-59% in the tea infusion (Gao et al., 2019). That is a huge risk reduction and therefore my first recommendation to avoid chemically-infused tea! The second recommendation would be to shop strictly loose-leaf and strictly organic teas. As previously mentioned, 8/10 big brand-name teas were found to contain pesticides and other chemical compounds and the companies didn't seem to care when confronted with the data, with one vice president saying "If you drink tea, regular tea, I don't care what brand [it] is, the fact of life [is] this agricultural product does have pesticides," (CBC, 2014). So shop organic and loose-leaf! Finally, find a quality tea steeper or infuser, preferably stainless steel or glass just not plastic, paper or silicone. There is a huge market for them, so find one that works best for you.

In summation,

1. Shop exclusively for tea leaves that are organic or at least that are GMO free.
2. Only buy loose leaf teas.
3. Opt for a stainless steel or glass tea infuser, avoid plastic, paper and silicone.
4. Rinse your tea leaves before brewing!



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