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## Study finds lead contamination in Bangladeshis: Food adulteration of turmeric

A study from the USA's Stanford University has shown that adulterated turmeric root and powder grown in Bangladesh is responsible for high levels of lead in low income, rural Bangladeshis.

The study, published in *Environmental Research*, involves a range of analyses, including interviews with farmers and spice processors in several districts in Bangladesh.

### **Flooding and turmeric farming**

Lead exposure causes diseases of the heart and brain in adults and children and impairs neurodevelopment in children. A potent neurotoxin, lead increases the risk of heart and brain disease in adults; it interferes with children's brain development.

Most turmeric is grown in developing countries because these provide favourable climatic conditions.

Studies had traced lead contamination of turmeric to the 1980s when flooding left turmeric crops soggy and dull in colour.

### **Lead chromate adulteration**

Farmers added lead chromate to restore the brilliant yellow colour during the processing of the spice. Lead chromate is widely used to colour furniture and toys.

The researchers pinpointed turmeric as likely the primary contributor to elevated blood lead levels among the Bangladeshis surveyed. About 90 per cent of children studied with elevated blood lead levels were from lower-income families. Researchers found high blood levels in over 30% of pregnant women in that country.

### **Outside Bangladesh, turmeric has not been directly linked to lead contamination**

The study points out that turmeric outside Bangladesh has not been directly linked to lead contamination. Stringent safety checks on imported turmeric have encouraged spice processors in Bangladesh to reduce the amount of lead added to the spice intended for export. There is no evidence that adulterated turmeric is reaching consumers outside of Bangladesh.



### **Why Australian consumers can be confident**

The TGA provides strict guidelines and regulations to ensure the integrity and safety of Australian products. Rigorous checks are made throughout the supply chain, batch testing reports and information on the supplier are documented at every stage.

Australian supplements are made following Good Manufacturing Practices and incorporating sampling and testing programs into quality procedures.

CMA actively supports a range of programs that facilitate the trade of safe and high quality complementary medicines. CMA strongly encourages its members to use its Guidelines and the Vendor Qualification Questionnaires (VQQs) as minimum documentation requirements.

The VQQs streamline the vendor qualification process, promote efficient decision-making, and ensure consistent quality and safety of all materials to be used for manufacturing complementary medicines in Australia. Industry are to ensure that all raw materials supplied by or through them or on their behalf comply with the relevant standards, quality and safeguards set out in the *General Principles for the Quality and Safety of Raw Materials*.

TGA also has a self-regulation program through which companies that suspect product has been adulterated in any way can report it for independent testing.

### **Takeout**

The turmeric study acknowledges that the importing-country food safety standards do influence large-scale food processors, but do not alter the practices of processors servicing the informal and domestic sectors. It therefore concludes that public health authorities, producers and consumers of turmeric should engage in a productive dialogue, along with other stakeholders to scope solutions to this issue.

### **Reference**

<https://www.sciencedirect.com/science/article/pii/S0013935119305195?via%3Dihub>

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