

## CWSF 2018 - Ottawa, Ontario



### Shwetabh Jha

#### Super Spice Turmeric as a Poison Detector

**Challenge:** Health

**Category:** Senior

**Region:** Annapolis Valley

**City:** Wolfville, NS

**School:** Horton High School

**Abstract:** Curcumin, a chemical found in turmeric (a very common spice), is responsible for many health benefits and is known to react with toxic metals with color change. This project was aimed to determine whether turmeric/curcumin can be used to detect presence of toxic metals in foods. My experiments demonstrated that curcumin indeed has the potential to be used to detect metal contamination in foods.

#### Biography

My name is Shwetabh Jha. I live in Wolfville, Nova Scotia, and I am currently enrolled in grade 11 at Horton High School. I was born in Saskatoon, Saskatchewan, and I'm seventeen years old. Growing up, I have always had an interest in science, due to the fact that both my mother and father have backgrounds in biology and chemistry, respectively. They encouraged me to ask questions and analyze the world around me. I am very interested in geopolitical analytics and global geography in general, and some say I am also quite good with numbers. Whenever I'd contract a cold, my mother would give me milk mixed with turmeric. She told me it would help alleviate some of the symptoms, and it surprisingly worked. I did some research on turmeric and found that the main active ingredient inside turmeric is curcumin, which is responsible for most of the health benefits of the spice. I looked further into curcumin and found that it has the ability to form complexes with metal ions. This is what helped me realize that turmeric could potentially be used to detect toxic metal ions inside food.