Do Bees Vector Pollutants in the Honey They Make?: Phase II

Konig, Aiden (School: Danville Junior/Senior High School)

The process of making honey is simple. Bees use a variety of flowers to produce honey. When looking at areas around the US, no one area has the same type of plants that make honey. Two years ago, I determined that the biodiversity of plants can change the color and the taste of honey. Last year, I investigated whether through the process of collecting pollen, bees would also pick up pollutants and transfer them into honey that is made in the hive. My results showed that something was present in the honey, but I was not able to directly identify what was measured by spectrophotometry. This year I will use high performance liquid chromatography (HPLC) to investigate possible herbicides and pesticides that may be present in the honey that we eat. I will be testing honey from six different areas of the United States. I will first test for possible pollutants in the honey using spectrophotometry. I will then use a commercial test for glyphosate to determine whether this commonly used ingredient in herbicides and pesticides can be found in the honey. Finally, I will use the HPLC to determine if glyphosate, found in herbicides and pesticides, will be found in honey from different areas of the country. I believe there will be positive tests for pollutants in the honey through spectrophotometry and that glyphosate will be detected in the commercial glyphosate test. I also believe that HPLC testing will also show evidence of glyphosate used in herbicides and pesticides. If herbicides, pesticides, and pollutants are found, we can assume that bees are able to vector these substances into the honey.

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