Tiye Garrett-Mills

The Effects of Pesticides on the Deoxyribonucleic Acid of Rubus idaeus

“Eat your fruits and vegetables”, a phrase, most human beings hear in their lifetime. What many people don't know is that the consumption of some fruits and vegetables could be potentially fatal. Farmers treat some produce with pesticides, or insect poison, to keep away harmful pests that could kill the plant. If pesticides cause genetic mutations in plants, they might destroy the health properties of fruits and may contribute to disease. Rubus idaeus is a fruit grown locally in Colorado and as oil prices rise, Coloradans will need to rely on local food supplies and we want them to be safe. Harvesting the deoxyribonucleic acid of sixteen organic Rubus idaeus and sixteen Rubus idaeus treated with pesticides then pushing them across a gel electrophoresis board tested for genetic mutations. Findings indicated a difference between organic Rubus idaeus samples and pesticide treated Rubus idaeus samples in 2 of 24 tests. On the other 22 tests the DNA samples were not visible. The results were inconclusive. Two few samples traveled down the gel likely because of supercoiling which occurs when DNA is split by the restriction endonucleases and sometimes causes supercoiling that prevent the DNA from traveling across a gel electrophoresis board. Further tests are needed to determine the safety eating Rubus idaeus part of Colorado’s food supply.