

New procedure unmasks foreign strawberries posing as Finnish

Strawberry isotopes can now be checked to ascertain their origin and weed out fraud.

Consumers in Finland tend to be particular about buying domestically grown produce, especially when it comes to iconic summer treats such as strawberries – even though they are often pricier than imports. As a result, some vendors at markets and shops claim that foreign berries are domestic to boost sales and profit margins.

Now, in an effort to stamp out efforts to pass off imported strawberries as domestic, the Natural Resources Institute Finland (Luke) and the Finnish Food Safety Authority have developed a system to check the origin of berries. They have compiled a database on Finnish strawberries that should help to uncover fakes.

“Fraudulent food labelling has become an increasingly hot topic in recent years. Finnish strawberries are a valuable commodity, which makes them vulnerable to origin fraud. The geographical origin of berries is difficult to verify, and traceability information gets lost along the long supply chain. The analytical technique, which is based on stable, nonradioactive isotopes, solves the problem,” says Annikki Welling, head of the Food Safety Authority’s chemistry unit.

Municipal authorities have been set up to use the testing procedure on samples for retail sites. So far the method can differentiate domestic berries from those grown in Poland and Sweden. Later this year it will be expanded to include comparisons with Estonian strawberries.

Organic and tunnel berries tested this year

The procedure is based on the fact that the relative levels of various isotopes vary depending on geographic location. Stable isotopes are transferred to plants in measurable ratios, which can be used to



determine where they grew. This can be ascertained further by measuring mineral levels in the soft fruit.

Samples have been collected from all of Finland's strawberry-growing regions, ranging from the Åland Islands in the southwest to Kainuu in the east.

"We will also soon have access to data on strawberries grown in Estonia," explains Research Professor Saila Karhu from Luke. "The isotope ratios of strawberries grown in Poland and Sweden are already known, and the system is beginning to show potential as a genuine mark of Finnish origin. More samples can be collected in subsequent years if necessary. Finnish growers can also have their own produce tested if they want to establish the exact 'fingerprint' of their berries. There is no real need to do that, however, as the ratios of Finnish berries make them stand out very clearly from produce grown elsewhere."

Luke gathered a comprehensive set of samples around the country in 2017 and 2018 for the database. This year sampling continues with berries grown with different cultivation techniques including organic strawberries and early berries produced in light greenhouses known as polytunnels.

Under Finnish law, the country of origin of berries, including wild ones such as bilberries (also known as blueberries), lingonberries and cranberries, must always be indicated. The Food Safety Authority recommends that imported frozen berries always be heated at minimum 90 degrees Celsius for five minutes, or boiled for two minutes before consumption to reduce the risk of viral infections.

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