

News from research stations

NEWS FROM RESEARCH INSTITUTES

This page contains contributions written by the staff of one of the European research institutes. On this page, researchers present a first-hand account of the results of their work or write about new research projects.

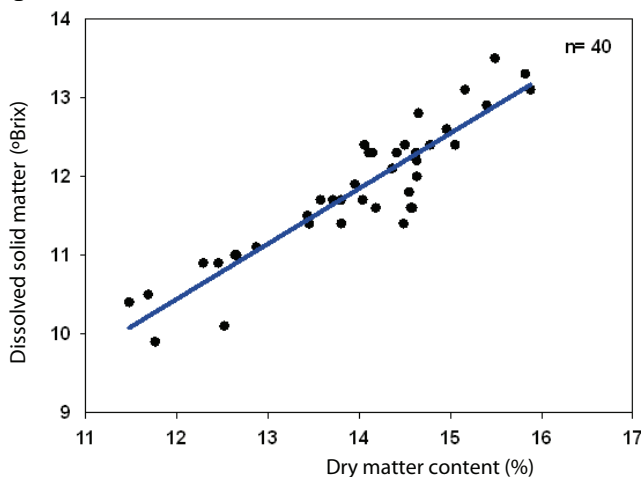
This month's edition features news from the Laimburg Research Centre in the North Italian region of South Tyrol.



FRUIT DRY MATTER CONTENT AS A QUALITY PARAMETER

Researchers of the Post-harvest Technology and Storage department at the Laimburg Research Centre have investigated a new method for predicting the fruit quality of various Braeburn apple strains, which involves measuring their dry matter content. This method is receiving acute interest in New Zealand for apples of the brand Eve™ (Braeburn, Mariri Red clone). The ratio of fresh matter weight to dry matter weight in slices of fruit flesh effectively results in an index for the quantity (percentage) of dry matter present. This value is strongly correlated to the refractive index value (see Graph 1) and can serve as a parameter for sugar content. This method is commonly used in New Zealand, where it is known as 'Fruit Dry Matter Concentration' (DMC). The technique could make it possible to predict – as early as picking time – the resulting sugar content of fruits following storage, thereby effectively introducing a new quality parameter. In tasting trials, fruits with a high dry matter content were judged as being particularly flavourful. Initial results collected from 3 different Braeburn strains from South Tyrol showed an average dry matter content of 14.3%. This is comparable to the level found in New Zealand apples.

Graph 1: Relationship (R2=0.84) between dry matter content (%) and dissolved solid matter (°Brix) after 2.5 months of storage in different Braeburn strains.



BIOINCROP: CAUSES OF REPLANT DISEASE

In regions specialised in apple cultivation such as South Tyrol, proper crop rotation is hardly possible, inevitably causing problems with replant disease. This disorder can, depending on the region, have a variety of causes: Fungi, bacteria, nematodes or a build-up of toxins. "We want to thoroughly tackle this replant disease problem with our 3-year BioIncrop project. At the Laimburg Research Centre we are testing different soil types on commonly used rootstocks, and applying soil improvement measures such as adding compost and micro-organism-based products, in order to assess the soil's condition by assessing the resulting growth index. Other research institutes are also contributing by analysing root growth and microbial populations and their pathogenic aggression", explains Markus Kelderer, head of the Fruit Growing department at the Laimburg Research Centre. The project is coordinated by Luisa Manici of the Consiglio di Ricerca Agricola per le Colture Industriali (CRA-CIN). CRA-CIN has collaborated very closely with Laimburg for many years. Six other research institutions (including from Switzerland, Spain and Turkey) are also involved in the project.



Greenhouse trials at the Laimburg Research Centre.

VZ Laimburg