Instructions for food hub leaders

Use this guide alongside the **Nutrient Testing Crop & Sample Planning Worksheet** available from Think Regeneration's Food Hub Online Reference Desk. Before testing, identify the food hub, farm, crop, variety, sample and collection date in the worksheet; then record the °Brix reading with the corresponding sample information.

Note: Delete this note before distributing to food hub team members and/or other partners helping you conduct nutrient testing.

How to Use a Digital Brix Refractometer

A digital refractometer measures the concentration of soluble solids in a liquid sample and reports the result in degrees Brix, or °Brix. Sugars make up much of the soluble-solid content in many fruits and vegetables, but a °Brix reading is not a complete measure of nutritional value or nutrient density.

1. **Choose a suitable testing location.** Place the refractometer on a clean, stable surface and avoid very bright direct sunlight, which can interfere with some digital instruments. Follow the manufacturer's guidance for acceptable operating temperatures.

2. **Clean and calibrate the instrument.** Rinse the measurement well with distilled or deionized water and dry it with a soft, lint-free, nonabrasive wipe. At the beginning of each testing session, calibrate the refractometer to zero with distilled or deionized water according to the manufacturer's instructions.

3. **Prepare a representative sample.** Use a clean garlic press, food-safe sample press or other appropriate tool to extract liquid from produce that represents the crop or lot being tested. Use the same sampling and preparation method whenever comparing results.

4. **Place the sample in the measurement well.** If necessary, filter out pulp, seeds or other plant material. Add enough liquid to cover the instrument's measurement area, making sure the sample contains no visible air bubbles.

5. **Take and record the reading.** Press the instrument's measurement or start button and wait for the result to appear. Record the °Brix reading immediately with the correct sample information in the worksheet or associated testing record.

6. **Clean between samples.** Rinse the measurement well and sample-preparation tools with clean water, then dry them completely before testing another sample. Remaining juice can contaminate the next sample, while remaining water can dilute it.

Remember: °Brix results are most useful when the same crop and variety are tested repeatedly using consistent sampling, preparation and measurement methods. Do not use a °Brix reading alone to claim that one crop is healthier or more nutrient-dense than another.

Recommended Reading and Viewing

- Using °Brix as an Indicator of Vegetable Quality: A Summary of the Measurement Method — Ohio State University Extension
    - Follow this illustrated overview for more detailed guidance on representative sampling, sample preparation, calibration, measurement, cleaning and recordkeeping.
- Using °Brix as an Indicator of Vegetable Quality: An Overview of the Practice — Ohio State University Extension
    - Read this resource to understand what °Brix can indicate, what affects the results and why °Brix alone can't establish a food's nutritional value.
- Instructions for Measuring °Brix in Selected Vegetable Crops — Ohio State University Extension
    - Consult these crop-specific instructions when testing cucumber, leafy greens, sweet corn, tomato or watermelon.
- Refractometer Calibration, Use and Maintenance — University of California Cooperative Extension
    - Use this technical guide to learn more about calibration, temperature, bright-light interference, equipment care and common causes of inaccurate readings.
- Digital Refractometer Video Demonstration
    - Watch this companion demonstration for additional visual guidance, while following the operating instructions supplied with your particular refractometer.
- Nutrient Density — Clemson Cooperative Extension
    - Use this overview to understand the broader concept of nutrient density and why assessing it requires consideration of multiple nutrients rather than a single °Brix measurement.