

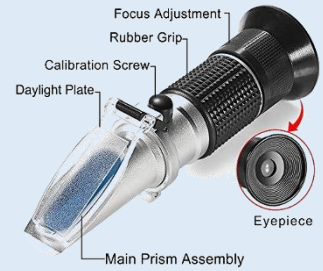
INSTRUCTIONS FOR USING A BRIX REFRACTOMETER

By using your Refractometer with a range of foliar fertilisers you can choose the right fertiliser to suit the needs of your plants.

It is preferable to take all of your Brix readings at the same time of the day. Avoid the middle of the day as sugar levels will be concentrated due to evaporation. Also avoid the onset of storms and low-pressure events.

Choose a range of foliar sprays such as NPK 15.5.5, Calcium Nitrate, Liquid Potassium, Liquid Sulphur, 20/20 Nitro Phos, 32% Nitrogen or whatever you think would be suitable for your needs. Each foliar spray should be applied with a minimum of five metres between each application. Spray approximately 1m² of the crop (or pasture) with a single foliar application. Place a mark to note what product was applied to identify the location for later Brix testing. You may wish to make wire hoops to assist determining the spray area of each product.

Approximately one hour later test the treated areas against a controlled area. Also test again in 24 hours for mineral requirements that may take longer to absorb.



To take a reading, place 2-3 drops of the liquid sample on the prism surface, close the cover and point it toward a light source. Focus the eyepiece by turning to the right or left. Locate the point on the graduated scale where the light and dark fields meet. Read the % sucrose (solids content) on the scale. The chart over the page represents the values of juices of mature crops.

Clean the surface and plastic cover with distilled water after every use and wipe dry. Store the unit in the case provided to prevent dust entering the eye piece and affecting the prism.

Any product that raises the Brix level 2 brix or more is telling you that the plant is deficient in those nutrients at the time of testing.

Within a given species of plant, the crop with a higher refractive index will have a higher sugar content, higher mineral content, higher protein content and a greater specific gravity or density. This adds up to a sweeter tasting, more minerally nutritious food (maximum nutritional value) with a lower nitrate and water content and better storage characteristics.

Crops with a higher refractive index will produce more alcohol from fermented sugars and be more resistant to insects, thus resulting in decreased insecticide usage. For resistance to insects, maintain a Brix of 12 or higher in the juice of the leaves of any plant. Crops with a higher sugar content will have a lower freezing point and therefore be less prone to frost damage.

Soil fertility needs may also be established from this reading. Highest readings will be obtained where soil nutrients are in best balance and are made available by microbes upon demand by the plant.

By comparing the test results, you can select the right fertiliser to obtain the best results.

Remember: A sharp line indicates the plant is low in calcium. When the line is difficult to read (softer graduation) you are getting towards adequate calcium. A low Brix high calcium plant tastes sweeter than a low Brix low calcium plant, even though both have the same Brix reading. A high Brix reading also indicates good phosphorous levels.



Refractive Index of Crop Juices – Calibrated in % Sucrose or Brix

FRUITS	POOR	AVERAGE	GOOD	EXCELLENT
Apple	6	10	14	18
Avocados	4	6	8	10
Bananas	8	10	12	14
Blueberries	6	8	12	14
Cantaloup	8	12	14	16
Casaba	8	10	12	14
Cherries	6	8	14	16
Coconut	8	10	12	14
Cumquat	4	6	8	10
Grapes	8	12	16	20
Grapefruit	6	10	14	18
Honeydew	8	10	12	14
Lemons	4	6	8	12
Limes	4	6	10	12
Mangos	4	6	10	14
Oranges	6	10	16	20
Papayas	6	10	18	22
Peaches	6	10	14	18
Pears	6	10	12	14
Pineapple	12	14	20	22
Raisins	60	70	75	80
Raspberries	6	8	12	14
Strawberries	6	10	14	16
Tomatoes	4	6	8	12
Watermelon	8	12	14	16
LEGUMES AND GRASS	POOR	AVERAGE	GOOD	EXCELLENT
Lucerne	4	8	16	22
Alfalfa/Clover	4	8	16	22
Grains/Grasses	6	10	14	18
Sorghum	6	10	22	30

VEGETABLES	POOR	AVERAGE	GOOD	EXCELLENT
Asparagus	2	4	6	8
Beets	6	8	10	12
Bell Peppers	4	6	8	12
Broccoli	6	8	10	12
Cabbage	6	8	10	12
Carrots	4	6	1	18
Cauliflower	4	6	8	10
Celery	4	6	10	12
Corn Stalks	4	8	14	20
Corn (Young)	6	10	18	24
Cow Peas	4	6	8	10
Endive	4	6	8	10
English Peas	8	10	12	14
Escarole	4	6	8	10
Field Peas	4	6	10	12
Green Beans	4	6	8	10
Hot Peppers	4	6	8	10
Kohlrabi	6	8	10	12
Lettuce	4	6	8	10
Onions	4	6	8	10
Parsley	4	6	8	10
Peanuts	4	6	8	10
Potatoes, Irish	3	5	7	8
Potatoes, Red	3	5	7	8
Potatoes, Sweet	6	8	10	14
Romaine	4	6	8	10
Rutabagas	4	6	10	12
Squash	6	8	12	14
Sweet Corn	6	10	18	24
Turnips	4	6	8	10