

Vegetable Crop Tissue Sampling Guide



Taking plant tissue samples correctly is the best way to make sure Laboratory Services results will be accurate. Our fact sheet, [How to Take a Plant Tissue Test](#), explains how to sample correctly.

Different crops require different sampling times and plant parts to sample. Table 1 shows which growth stage and plant part to sample for vegetable crops.

TABLE 1.
GROWTH STAGES AND PLANT PARTS FOR VEGETABLE CROP SAMPLES.

CROP	CROP GROWTH STAGE	PLANT PART TO SAMPLE
Beans, Dry	1st bloom	Recent matured leaves
Beans, Snap/Peas	Prior to bloom—1st bloom	Leaves from the 3rd to 5th node (place on the crop stem where the leaves are attached) from the top
Beets	9 weeks after seeding (mid-season)	Recent mature leaves
Broccoli	Just before or at plant heading	Young mature leaf from center whorl
Brussel sprouts	Early sprouts	Young mature leaf from center whorl
Cabbage	8 weeks after transplanting	Wrapper leaf
Carrots	60 days after seeding	Recent mature leaves
Cauliflower	Just before or at plant heading	Young mature leaf from center whorl
Celery	At maturity	Outer petiole (leaf stem)
Cucumber	Early bloom—before fruit set	Recent mature leaves
Lettuce	Half size head	Most mature leaf—wrapper leaf
Peppers	Prior to blossoming	4th–5th leaf from growing tip
Potatoes	Early bloom	4th leaf from growing tip (including stem)
Pumpkin	5–8 wks after seeding	Recent mature leaves—5th & 6th leaf from tip
Spinach	30 days after seeding	Recent mature leaves
Squash	Early fruit	Recent mature leaves—5th & 6th leaf from tip
Sweet onion	Prior to bulb initiation	Recent mature leaves
Tomato	1st flower	4th–5th leaf from growing tip
Watermelon	1st fruit	Recent mature leaves—5th & 6th leaf from tip

TABLE 2.
VEGETABLE CROP SUFFICIENCY TABLE

Crop*	N %	P %	K %	Ca %	Mg %	B ppm	Zn ppm	Cu ppm	Mn ppm	Fe ppm
Beans, Dry	4.0	0.2	1.2	–	0.10	10	14	4	14	–
Beans, Snap	3.0–4.0	0.3–0.5	2.0–3.0	0.8–1.5	0.2–0.5	15–40	20–40	15–40	20–100	25–200
Beets	2.6–4.0	0.2–0.3	1.7–4.0	1.5–3.0	0.3–1.0	60–80	15–30	5–10	70–200	40–200
Broccoli	3.0–4.5	0.3–0.5	1.5–4.0	1.2–2.5	0.2–0.4	30–50	45–95	5–10	25–150	40–300
Brussel sprouts	2.2–5.0	0.2–0.6	2.4–3.5	0.4–4.0	0.2–0.4	30–70	20–80	5–10	20–200	40–300
Cabbage	3.0–6.0	0.3–0.6	2.0–4.0	1.5–2.0	0.3–0.6	20–40	30–50	3–7	20–40	30–60
Carrots	1.8–2.5	0.2–0.4	2.0–4.0	2.0–3.5	0.2–0.5	20–40	20–60	4–10	30–60	30–60
Cauliflower	2.2–4.0	0.3–0.7	1.5–3.0	1.0–2.0	0.3–0.6	30–50	30–50	5–10	50–80	30–60
Celery	1.5–1.7	0.3–0.6	5.0–7.0	1.3–2.0	0.3–0.6	20–40	20–40	1–3	5–10	20–30
Cucumber	2.5–5.0	0.3–0.6	1.6–3.0	1.3–3.5	0.3–0.6	20–60	20–50	5–20	30–100	40–100
Lettuce	2.0–3.0	0.3–0.5	2.5–5.0	1.4–2.0	0.3–0.7	15–30	25–50	5–10	20–40	50–150
Peppers	4.0–5.0	0.3–0.5	5.0–6.0	0.9–1.5	0.4–0.6	20–50	25–80	5–10	30–100	30–150
Potatoes Critical low Concentration	2.5	0.2	1.2	1.5	0.1	2.0	14.0	2.0	15	–
Pumpkin	3.0–4.0	0.3–0.4	2.0–3.0	0.9–1.5	0.3–0.5	20–40	20–50	5–10	40–100	40–100
Spinach	3.0–4.5	0.3–0.5	3.0–4.0	0.6–1.0	1.0–1.6	20–40	50–70	5–7	50–100	--
Squash	3.0–5.0	0.3–0.5	2.0–3.0	1.0–2.0	0.3–0.5	25–40	20–50	5–20	40–100	40–100
Sweet onion	2.0–3.0	0.2–0.5	1.5–3.0	0.6–0.8	0.2–0.3	10–25	15–20	5–10	10–20	--
Tomato	2.8–4.0	0.2–0.4	2.5–0.4	1.0–2.0	0.3–0.5	20–40	5–40	5–15	30–100	40–100
Watermelon	2.0–3.0	0.3–0.5	2.3–3.5	1.0–2.0	0.3–0.5	20–40	20–40	5–10	20–100	30–100

Ontario Ministry of Agriculture, Food and Rural Affairs (critical to normal concentrations)

There are a number of Crop Sufficiency Tables that are available from various jurisdictions. Most crop sufficiency ranges are similar. If you use a different Sufficiency Table, be sure to sample at their specific growth stage.



Broccoli or cauliflower – young mature leaf from center whorl



Carrots – recently matured leaves



Potatoes – includes 4th leaf from growing tip



Cabbage – wrapper leaf