

# 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 Sample*, 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
<b>Beans, Dry</b>	1st bloom	Recent matured leaves
<b>Beans, Snap/Peas</b>	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
<b>Beets</b>	9 weeks after seeding (mid-season)	Recent mature leaves
<b>Broccoli</b>	Just before or at plant heading	Young mature leaf from center whorl
<b>Brussel sprouts</b>	Early sprouts	Young mature leaf from center whorl
<b>Cabbage</b>	8 weeks after transplanting	Wrapper leaf
<b>Carrots</b>	60 days after seeding	Recent mature leaves
<b>Cauliflower</b>	Just before or at plant heading	Young mature leaf from center whorl
<b>Celery</b>	At maturity	Outer petiole (leaf stem)
<b>Cucumber</b>	Early bloom—before fruit set	Recent mature leaves
<b>Lettuce</b>	Half size head	Most mature leaf—wrapper leaf
<b>Peppers</b>	Prior to blossoming	4th–5th leaf from growing tip
<b>Potatoes</b>	Early bloom	4th leaf from growing tip (including stem)
<b>Pumpkin</b>	5–8 wks after seeding	Recent mature leaves—5th & 6th leaf from tip
<b>Spinach</b>	30 days after seeding	Recent mature leaves
<b>Squash</b>	Early fruit	Recent mature leaves—5th & 6th leaf from tip
<b>Sweet onion</b>	Prior to bulb initiation	Recent mature leaves
<b>Tomato</b>	1st flower	4th–5th leaf from growing tip
<b>Watermelon</b>	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
<b>Beans, Dry</b>	4.0	0.2	1.2	–	0.10	10	14	4	14	–
<b>Beans, Snap</b>	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
<b>Beets</b>	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
<b>Broccoli</b>	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
<b>Brussel sprouts</b>	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
<b>Cabbage</b>	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
<b>Carrots</b>	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
<b>Cauliflower</b>	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
<b>Celery</b>	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
<b>Cucumber</b>	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
<b>Lettuce</b>	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
<b>Peppers</b>	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
<b>Potatoes Critical low Concentration</b>	2.5	0.2	1.2	1.5	0.1	2.0	14.0	2.0	15	–
<b>Pumpkin</b>	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
<b>Spinach</b>	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	--
<b>Squash</b>	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
<b>Sweet onion</b>	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	--
<b>Tomato</b>	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
<b>Watermelon</b>	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.



**Carrots – recently matured leaves**



**Broccoli or cauliflower – young mature leaf from center whorl**



**Cabbage – wrapper leaf**



**Potatoes – includes 4th leaf from growing tip**

## **LAB CONTACT INFORMATION**

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