

Row Crop & Raised Bed Gardening

What to Grow covers which crops to plant and how to save their seed. This guide is the method underneath that: how to actually build a bed, prepare the soil, space and plant what you chose, deliver real water, start and harden off transplants, tell when each crop is actually ready, handle the pests that show up, and keep something coming out of the ground all season instead of one harvest and then bare dirt. This is the default growing method most households will actually use, in-ground rows or raised beds, not a food forest or a hydroponic system, both covered separately.

Raised beds or in-ground: the real tradeoff

Neither is universally better; they trade different things.

	Raised beds	In-ground rows
Spring start	Soil warms up to 5°F faster, plant earlier	Warms slower, especially in shaded or clay-heavy yards
Water	Dries out faster, exposed sides lose moisture; water more often	Holds moisture longer once established
Soil quality	You control it completely, fill with a real mix from day one	Depends on what's already there; amending takes longer to pay off
Cost & labor	Lumber or blocks plus fill soil, a real upfront cost	Free to start, but tilling or double-digging poor native soil is real labor
Fall	Cools faster too, season ends a bit sooner than the spring gain suggests	Holds warmth longer into fall

A raised bed is the better call on a site with poor or contaminated native soil, a short season where every early-spring week matters, or a gardener who can't kneel to ground level. Straight in-ground rows are the better call on a site that already has decent soil and more space than budget for lumber and fill dirt.

Building a raised bed, if that's the choice

Material	Spec	Why
Lumber	Untreated cedar or pine 2×6 or 2×12 boards	Untreated wood avoids chemicals leaching into food soil; cedar resists rot longer than pine but costs more
Height	Minimum 6 in., ideally 12 in. or more	6 in. works for shallow-rooted greens; 12 in.+ gives root crops and tomatoes real depth and holds more of the good fill soil you're paying for
Footprint	Max 4 ft. wide, any length up to 8–10 ft. before it needs a center brace	4 ft. keeps every part of the bed reachable from the side without stepping into it and compacting the soil
Hardware	Corner brackets or 3 in. deck screws driven through pre-drilled pilot holes	Screws through end-grain without a pilot hole tend to split cedar; brackets are the simpler option for a first build

Assembly is straightforward: cut boards to length, screw or bracket the four corners into a rectangle, and set it directly on cleared, leveled ground, no bottom needed. Fill with the same real mix described in the bed-prep section below rather than bagged topsoil alone. A bed longer than 8 feet benefits from a center cross-brace (a board running the short way, screwed to both long sides) to keep the sides from bowing outward once full of wet soil.

Bed prep: getting the soil ready before anything goes in it

Whichever you choose, the soil itself is what actually grows the plant, not the structure around it. Work compost or aged manure into the top 8–12 inches before the first planting; a raised bed's fill soil should be a real mix (topsoil, compost, and a coarse material like perlite or coarse sand for drainage), not just bagged topsoil on its own, which compacts hard over a season. In-ground beds with heavy clay, common along the Wasatch Front, benefit from the same compost addition plus avoiding working the soil while it's wet, which breaks clay into compacted clumps that take a full season to recover from.

The tool list for all of this is short: a spading fork or shovel to turn and amend soil, a hard rake to level it, hand trowel for transplanting, hoe for weeding between rows, and a pair of pruners or scissors for harvest and staking work. None of it needs to be specialized; a basic set covers everything in this guide.

Spacing: intensive beats traditional rows in a home garden

Traditional row spacing, with 18–36 inches left bare between rows, was designed for a tractor or a hand-pushed cultivator to pass through, not for a bed you tend by hand from the sides. In a raised bed or a hand-tended in-ground plot, that aisle space is just wasted growing area. Intensive spacing, planting in a grid or offset pattern close enough that mature leaves just touch, fills 30–50% more of the same bed and can raise total yield meaningfully for crops like bush beans, since the plants shade out weeds and hold soil moisture for each other instead of leaving bare dirt to dry out and weed.

The real limit: plants still compete for light, water, and nutrients even at the closer spacing intensive methods recommend, so don't crowd tighter than a variety's own seed packet or plant tag says just because the bed has room. A denser stand of smaller plants usually still out-produces a sparser stand of larger ones per square foot, but only up to the point the packet's own spacing already accounts for.

Watering: depth and frequency, not a daily habit

Most vegetables need roughly 1–1.5 inches of water a week, from rain, irrigation, or both, delivered deep enough to reach 6–8 inches into the soil, which is where most of a vegetable's actual root mass sits. Watering shallowly and often trains roots to stay near the surface, where they dry out faster and are more exposed to heat; watering deeply and less often pushes roots down into soil that stays moist longer between waterings.

Soil type	Realistic frequency
Sandy, fast-draining	2–3 times a week
Loam or clay, holds moisture	Once or twice a week
Raised bed (any soil)	More often than the same soil in-ground, exposed sides dry it out faster

Check before watering rather than watering on a fixed calendar: if the soil is still damp 2 inches down, wait. A finger pushed into the soil tells you more than a schedule does.

To actually deliver that inch of water rather than guess at it: set a straight-sided container (a tuna can works) in the bed and run a sprinkler or soaker hose until it collects 1 inch, then note how long that took, that's your baseline watering time going forward. A soaker hose or drip line laid along the base of the plants is the more efficient choice over a sprinkler for a bed of any real size: it puts water at the root zone instead of on the leaves, where standing moisture invites fungal disease, and loses less to evaporation and wind drift. A watering can or hose-end wand works fine for a single raised bed; for anything larger, the up-front cost of a soaker hose pays for itself in water saved and disease avoided.

Succession planting: how to actually get a continuous harvest

A garden planted all at once in spring produces a glut for a few weeks and then nothing. Succession planting staggers when things go in the ground so something is always coming ready.

- **Same crop, staggered starts.** Plant a new round of a fast crop (lettuce, radishes, bush beans, spinach) every 1–3 weeks instead of all of it on one day, so each round finishes as the last one is picked out.
- **Replace as you harvest.** The moment an early crop (spinach, peas) is done for the season, pull it and plant a second crop, a heat-lover if it's now summer, or a fall crop like more spinach or brassicas if the season's turning.
- **Stagger varieties, not just planting dates.** Planting an early-maturing and a late-maturing variety of the same crop on the same day spreads the harvest without any extra planting trips.

Northern Utah note: plant by hardiness group and real frost dates, not a national seed packet

USU Extension groups Wasatch Front vegetables into hardiness bands with their own planting windows: hardy crops (broccoli, cabbage, onions, peas, spinach) from roughly March 1–April 15; semi-hardy crops (beets, carrots, lettuce, potatoes) from March 20–May 1; tender crops (beans, corn, cucumbers, squash) only after the real risk of frost passes, roughly May 5–June 1. Actual last-frost dates vary by 5 weeks across the Wasatch Front itself, April 17 in Bountiful versus May 21 in Provo, so check your own city's average last frost, not a generic Utah date, before starting the tender group.

Planting the five staples this site actually recommends

What to Grow names five crops worth the real garden space: potatoes and dry beans and corn and winter squash for calories, cabbage and other brassicas for the vitamin C storage alone doesn't cover. Here's how to actually plant each one in a row or raised bed.

Crop	Depth & spacing	Real technique
Potatoes	Seed pieces (1.5–2 oz, one eye each) 3–5 in. deep, 10–12 in. apart, rows 30–36 in. apart	Hill soil 4 in. up the stem once plants reach 6–8 in. tall, and again as they grow, until hills are about 12 in. high. Hilling isn't optional: tubers exposed to light turn green and produce solanine, a real toxin, not just a cosmetic issue.
Dry beans	1 in. deep, spaced per variety, bush types tolerate intensive spacing well	Direct-seed after the real risk of frost passes. Leave dry-bean pods on the plant until they rattle and the plant itself has died back; pulling them early for a bigger harvest defeats the point of a dry-storage crop.
Corn (dent or flint)	1–1.5 in. deep, 8–12 in. apart, rows 30–36 in. apart	Plant in a block of several short rows, not one long row: corn is wind-pollinated, and a block lets pollen actually reach neighboring plants reliably, the same isolation logic What to Grow covers for seed-saving applies to getting a good ear in the first place.
Winter squash	1 in. deep, sprawls 4–6 ft. per plant left on the ground	Trellis it instead of letting it sprawl: one trellised plant realistically yields 20–40 lbs from as little as 16 sq ft, a real space advantage in a raised bed, and the vines get better airflow off the ground, which means less fungal disease too.
Cabbage and other brassicas	Transplant, not direct-seeded from scratch in most home gardens; space 12–18 in. apart	Part of the hardy group, plant among the earliest things in the ground in spring per the Northern Utah note above.

Corn, beans, and squash together: the Three Sisters, a real, evidence-backed pairing

Plant all three staples together on the same mound and they do real work for each other: corn gives beans something to climb, beans fix nitrogen the corn and squash both use, and squash's broad leaves shade out weeds and hold soil moisture. Build mounds 18–24 in. across and 4–6 in. high, spaced 3–4 ft. apart center to center. Plant corn first; once it reaches about 4 in. tall (roughly 2–3 weeks later), plant pole beans, not bush beans, around each stalk; three to four weeks after the corn, plant squash between the mounds. Documented yields run 50–110% higher per square foot than growing the same three crops separately, a real, measured number, not a permaculture folklore claim.

Planting the secondary crops that round out the diet

What to Grow also names six secondary crops that close real gaps the five staples above leave open: vitamin A, calcium, iron, dietary fat, and the flavor variety that keeps a long-term diet from becoming monotonous. Here's how to plant them.

Crop	Depth & spacing	Real technique
Carrots	$\frac{1}{4}$ – $\frac{1}{2}$ in. deep, thin to 3 in. apart, rows 12–18 in. apart	Thin seedlings rather than sowing at final spacing; crowded carrots stay stunted and forked instead of growing straight
Kale and chard	$\frac{1}{4}$ – $\frac{1}{2}$ in. deep, 12–18 in. apart	Part of the hardy group, plant early alongside cabbage; both tolerate light frost and are worth succession-planting into fall for a second round
Onions	$\frac{1}{2}$ –1 in. deep, 3–4 in. apart	Stop watering as bulbs mature and the tops begin to fall over; excess water at that stage delays curing and causes real storage problems later
Garlic	Cloves 2–3 in. deep, 3–4 in. apart, rows 6–10 in. apart	Plant in fall for a summer harvest, not spring; the same curing caution as onions applies once it's time to pull
Sunflowers (oilseed type)	1–1.5 in. deep, 6 in. apart, rows 30 in. apart	Choose an oilseed variety specifically, not an ornamental one, if the goal is pressing oil rather than just cut flowers
Tomatoes and peppers	Transplant after the real risk of frost passes	Tender crops in the same group as beans, corn, and squash for Wasatch Front timing; stake or cage tomatoes rather than letting them sprawl
Culinary and medicinal herbs	Varies widely by herb	Most tolerate the same intensive spacing as vegetables; see Herbal Medicine & the Home Apothecary for which ones are actually worth the bed space

Tomatoes and peppers have to be started indoors weeks before they ever see the garden

Neither reaches transplant size from a direct-sown seed before the Wasatch Front season is over. Start tomato seed indoors 6–8 weeks before your local last-frost date, and pepper seed 8–10 weeks before, peppers are slower to germinate and grow. Once seedlings have their first true leaves and outdoor nights are reliably above 50–55°F, harden them off over 7–14 days: set them outside in a sheltered, shaded spot for an hour or two the first day, and increase both sun exposure and time outdoors a little each day, before transplanting into the bed. Skipping the hardening-off step, moving a windowsill seedling straight into full sun and wind, commonly scorches or kills it within days even after the frost risk itself is gone.

Knowing when it's actually ready to harvest

Several of these crops don't announce their harvest window the way a ripe tomato does; picking on a guess instead of a real cue either wastes weeks of growing time or ruins a crop meant to store.

Crop	Real ripeness cue
Potatoes	Vines yellow and die back for a full storage crop; a few new potatoes can be dug earlier once plants flower. After digging, cure in a dark spot at 55–60°F for 10–14 days before moving to cold, dark 40–45°F storage; skipping the cure shortens storage life significantly
Winter squash	Skin resists a fingernail pressed into it, and the stem has begun to dry and turn brown. Cure most types at 80–85°F for 10–14 days to harden the skin further and sweeten the flesh; acorn squash is the exception and doesn't need curing
Onions	Tops yellow, then fall over and dry at the neck on their own; don't bend them down early to force this. Cure in a warm, dry, well-ventilated spot out of direct sun for 2–3 weeks until the necks are fully dry and papery before storing
Garlic	Bottom 3–4 leaves have browned while several upper leaves are still green; pulling too late causes the bulb wrappers to split and rot in storage. Cure the same way as onions, warm, dry, ventilated, out of the sun, for 3–4 weeks
Corn (dent or flint, for dry storage)	Husks and silks have turned fully brown and dry, ideally after a light frost; kernels show a visible dent at the crown as the soft starch inside shrinks. This is a different, later cue than sweet corn's milk-stage harvest, don't use sweet-corn timing on a dry-storage variety
Dry beans	Pods have dried, browned, and rattle when shaken, and the plant itself has largely died back, as already noted above
Cabbage	Head feels solid and dense when squeezed, not spongy; harvest before it splits, which happens if it's left too long after reaching full size, especially after rain
Carrots	Shoulders (the top of the root, visible at soil level) reach ½–¾ inch across for most varieties; taste-test one before pulling the rest if unsure
Sunflowers (oilseed, for pressing)	Back of the flower head turns from green to yellow-brown and petals drop; cut the head and finish drying indoors before threshing out the seed

When something's actually eating the crop

Three pests account for most of the damage a home garden along the Wasatch Front actually sees.

Pest	How to identify it	What to do
Aphids	Small (pinhead-size) green, black, or gray insects clustered on new growth and leaf undersides; sticky honeydew residue and curling, yellowing leaves are the giveaway even before you spot the insects themselves	A strong jet of water knocks most of them off; insecticidal soap handles a heavier infestation. Check new transplants before they go in the bed, aphids travel in on nursery stock
Cabbage worms	Pale green caterpillars, well camouflaged against cabbage-family leaves, plus small white or yellow butterflies fluttering low over the bed during the day, those are the adults laying eggs	Floating row cover over brassicas from transplant onward keeps the egg-laying adults off entirely; without cover, hand-pick worms and look for the ragged holes and dark green droppings that mean they're already present
Squash bugs	Flat-backed, brownish-gray adults and clusters of bronze, football-shaped eggs on the undersides of squash leaves; wilting that starts at the base of the plant and spreads is the field sign	Check leaf undersides weekly starting when plants are small and crush egg clusters by hand; adults hide under boards or mulch near the plant base overnight and can be trapped and destroyed that way

What this doesn't replace

Crop rotation and soil fertility over multiple seasons are covered in What to Grow rather than repeated here. For extending the season earlier in spring or later into fall beyond what succession planting alone buys, see Building a Walipini and its own growing-technique guide, Growing in a Walipini. If the goal is a low-labor perennial system instead of an annual bed replanted every year, see Building a Food Forest.

Sources

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- Three Sisters mound technique, planting sequence, and documented yield increase: Old Farmer's Almanac; LawnsGuide; University of Arkansas Extension
- Corn spacing and block planting for wind pollination: USU Extension, Wasatch Front Vegetable Chart
- Carrot, onion, and garlic planting depth, spacing, and curing/storage technique: USU Extension, Carrots; USU Extension, Onions; USU Extension, Garlic

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- Watering depth, weekly amount, and soil-type frequency: USU Extension; University of Maine Extension; Clemson HGIC
- Succession planting methods and interval scheduling: West Virginia University Extension; University of Maryland Extension
- Wasatch Front vegetable hardiness groups and planting dates, real last-frost variation by city: USU Extension; USU Extension, Wasatch Front Planting Dates
- Clay soil handling, avoiding tillage while wet: USU Extension
- Raised bed construction, lumber choice, height, and footprint: University of Maryland Extension; Savvy Gardening
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- Dent and flint corn harvest timing, dent stage, and dry-down distinguished from sweet corn's milk stage: Gardener's Path; Ask Extension
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