

Growing in a Walipini

Building a Walipini covers the structure: pit depth, orientation, glazing, and the site conditions that rule a build out entirely. This guide is what happens after it's built: how to actually plan a growing calendar that uses the extended season a walipini exists for, and the humidity and condensation problems a sunken, less-ventilated structure creates that an open garden bed never has to deal with.

Plan a calendar, not just a planting

A walipini's entire value is holding cold-hardy crops through a season they couldn't survive outside; a single spring planting wastes most of that capability. Cold-hardy greens (spinach, lettuce, kale, chard, Asian greens) and root crops (carrots, beets, radishes) are the realistic year-round crops here, planted in succession the same way an outdoor bed is, new rounds every 2–3 weeks, so something is always at a harvestable stage through winter. Reserve the warmer months for anything that actually benefits from a longer, more protected season, an earlier tomato or pepper start than the open garden allows, then move heat-lovers back outside once the risk of frost is fully past and free up the walipini for the next cold-hardy round.

Running that many overlapping successions works best out of trays rather than committing the whole bed to one round: start each new round in shallow seed trays with drainage holes, filled with a light seed-starting mix rather than garden soil, kept moist but never soggy until germination, then transplant seedlings into the main bed as soon as the previous round is harvested out and space opens up. This keeps the bed itself continuously productive instead of sitting half-empty while a new round gets to transplant size.

Remember what Building a Walipini already establishes: the structure buffers temperature, it doesn't generate heat. It's genuinely capable of carrying hardy greens through winter cold; it is not a reliable way to fruit a tomato or pepper plant through the coldest months without real supplemental heat on top of it.

Which of the five recommended staples actually belong in here

What to Grow names five crops worth real garden space, and a walipini is a good fit for exactly one of them outright, plus a real but limited use for a second.

- **Cabbage and other brassicas fit well.** They're squarely in the cold-hardy category a walipini exists for, and they're the crop this space is actually built to extend, not a stretch use of it.

- **Potatoes have a real but narrow use: an extra-early or extra-late start, not a full-season crop.** Chitting (pre-sprouting) seed potatoes in the walipini in late winter, or planting an early round for harvest well before the outdoor season allows, uses the space well. A full-season potato crop grown entirely inside doesn't: tubers take real floor space and months to mature, which is a poor return on a structure this limited in square footage compared to just planting potatoes outside on the schedule in Row Crop & Raised Bed Gardening.
- **Corn, dry beans, and winter squash don't belong in here.** All three are tender, full-season crops that want to be outside in real summer heat, not the cold-hardy niche this structure is built for; corn additionally needs wind movement across a real stand to pollinate, which a sealed pit doesn't provide, and squash's sprawl would consume the entire footprint for one or two plants. Grow this trio outside on the schedule already covered in Row Crop & Raised Bed Gardening, ideally as the Three Sisters planting covered there, and reserve the walipini for what it actually extends.

And the secondary crops: two real fits, three that don't belong

- **Kale and chard fit exactly like cabbage does.** They're the same cold-hardy category, and belong in the same succession rotation as the greens covered above.
- **Herbs are a genuinely good match, not just a tolerable one.** Many culinary and medicinal herbs are cold-tolerant or directly benefit from the same season extension cabbage does, and unlike the tender staples below, they don't need pollinator access or field-scale space to be worth growing. Rotate them in with the cold-hardy greens the same way.
- **Carrots have the same narrow, early-or-late use potatoes do,** not a full-season crop, for the same floor-space-versus-return reason.
- **Onions, garlic, sunflowers, tomatoes, and peppers don't belong in here** for the same reasons corn, beans, and squash don't: tender, full-season, or simply too space-hungry for what a walipini is actually built to extend. Grow all five outside on the schedule in Row Crop & Raised Bed Gardening.

Humidity and condensation: the walipini-specific problem

A sunken structure with limited ventilation traps moisture in a way an open bed or a well-vented above-ground greenhouse doesn't. That matters because condensation, not just humidity in the air, is what most fungal disease actually needs: high humidity lets fungal spores form, but it's water condensing directly on a leaf surface that lets those spores germinate and infect the plant. Above roughly 80% relative humidity, infections like leaf mold become a real risk; above 90%, fungal disease develops fast.

Those thresholds aren't guessable by feel. A basic digital hygrometer, the same inexpensive gauge sold for greenhouses, reptile tanks, or humidors, run \$10–15 and gives an actual number to check against rather

than a hunch; hang it at plant height rather than near the door or vents, where readings skew lower than what the crop is actually sitting in.

- **Vent on a schedule, not just when it feels humid.** Cracking vents open in the late afternoon, before the day's heat fully leaves, lets cooler, drier outside air in while warm moist air escapes, the same principle a thermal chimney uses passively.
- **Water in the morning, not the evening.** Foliage that stays wet overnight in an already-humid, poorly-vented space is close to the worst-case condition for fungal infection. Watering early enough that leaves dry out during the day removes that overnight window.
- **Space plants for airflow.** The same crowding that helps an outdoor intensive bed shade out weeds works against you here, still air between crowded leaves is exactly where condensation and disease take hold first.
- **Clean up at season's end.** Fungal spores overwinter on old plant debris and start the next season's infection early; a real end-of-season clear-out is worth the time it takes.

Damping-off is the fastest way to lose a whole tray of seedlings

Young seedlings are the most vulnerable stage: damping-off, a fungal disease that topples an apparently healthy seedling at the soil line overnight, thrives in exactly the warm, overly wet conditions an underventilated walipini can create at seed-starting time. Don't overwater seed trays, and don't crowd them; both are correctable causes, not bad luck.

What actually changes if it's a greenhouse instead of a walipini

If you're growing in a standard above-ground greenhouse rather than a walipini, the core skill shifts from managing humidity to managing heat swings. An above-ground structure has none of the earth's thermal buffering a walipini relies on, so it overheats hard on a sunny day, sometimes dangerously fast, and loses heat just as fast once the sun sets. The practical differences: active venting and shade cloth become a daily, not occasional, concern in summer; supplemental heat on cold nights is usually necessary rather than optional, since there's no soil mass holding yesterday's warmth; and ventilation, generally easier to build into an above-ground structure with roof and side vents, means humidity and fungal pressure are often more manageable than in a sunken pit, even though they're not eliminated. Treat this section's succession-planting approach as still useful in a greenhouse, and the humidity-management section above as the walipini-specific half of this guide, not something to import wholesale into a structure with a very different heat profile.

Sources

- Condensation versus humidity as the actual disease trigger, and infection humidity thresholds: UMass Amherst CAFE; SmartFog
- Hygrometer use and placement for accurate greenhouse readings: Greenhouse Management
- Venting strategy, timing, and horizontal airflow for humidity and disease control: Greenhouse Management; UMass Amherst CAFE, Disease Management
- Damping-off and seedling-stage disease risk: Cornell Greenhouse Horticulture
- Walipini structure, thermal buffering versus insulation, and season-extension ceiling: see Sources on Building a Walipini
- Potato planting timeline and real space requirements, corn's wind-pollination need, and winter squash's real vine spread: see Sources on Row Crop & Raised Bed Gardening