

GARDENING LATEST • PRACTICAL GROWING GUIDES

Winter Polytunnel Guide

Protect crops • Manage the weather • Plan your harvests

For home gardeners



Make winter growing manageable

A small bowl of fresh leaves can make a cold garden feel useful again.

Your tunnel can keep working through winter, but the routine changes. You'll spend less time chasing growth and more time protecting what's already there. Start with hardy salads, learn how cold the beds become and keep enough space to reach every crop without stepping on wet soil.

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Use the unheated advice unless you have a reliable heater with a thermostat. The example months suit a cool, temperate Northern Hemisphere garden. For Southern Hemisphere gardens, follow the seasonal stages and local daylight dates. Hot or frost-free climates need a different crop calendar.

What a winter tunnel can do

Shelter buys you growing time. Short days still set the pace.



A bed-level cover keeps a smaller volume of air around the crop. Roll it back when conditions allow.

A polytunnel cuts wind and keeps heavy rain off the beds. Sunshine can warm it quickly, even when the air outside feels bitter. Once the sun drops, a single skin of plastic loses heat fast. On a long cold night, temperatures inside can approach those outdoors. An unheated tunnel can freeze.

Plan for three different outcomes

- Winter harvest: crops have already grown enough leaf or root to pick before the darkest weeks.
- Overwintering: young plants survive the cold period and give their main harvest when light returns.
- Fresh growth: mild spells or a heated, well-lit space allow some new growth. Don't budget for summer speed.

Below roughly ten hours of daylight, growth slows sharply in many winter vegetables. Cloud, shading and temperature change the result, so ten hours is a planning marker rather than a switch. In a very cold region, even hardy crops under fleece may fail during prolonged freezes.

Reading: [1], [2], [3]. Full links on pages 36-38.

Walk the tunnel before planting

A clear path and a sound cover make every later job easier.

- 1.** Find the model name and keep its cover, anchoring and snow instructions together. Check whether the structure is suitable for remaining covered over winter in your area.
- 2.** Walk around the outside in calm weather. Look for loose fixings, torn film, rubbing branches and ground anchors that have shifted. Clear drains without disturbing foundations or buried services.
- 3.** Open and close every door and vent. Fit working catches and stays. Make sure you can close openings from a safe position before a storm.
- 4.** Check the soil after rain. Water creeping in from the edge needs a drainage solution. A tunnel cover can't fix a waterlogged site.
- 5.** Watch where low sunlight falls at morning, midday and afternoon. Mark the brightest growing strip and the coldest edge. Keep tall storage out of the sunward side.
- 6.** Measure usable bed widths, paths and door openings. Test access with a watering can, harvest bowl and any mobility aid you use.

Buy the small essentials first

A min/max thermometer, breathable crop fleece, clips and cover-repair tape usually come before a heater. Add a humidity meter if persistent damp is a problem. A notebook is enough to spot patterns.

If this is your first winter

Use one manageable bed for spinach and two or three other hardy leaves. Leave room to compare a covered patch with an uncovered patch of the same crop. Start with a small trial you can inspect every day.

Measure the temperature at crop height

A warm reading near the roof tells you little about a cold seedling.

1. Place a min/max sensor in shade at the height of the leaves. Use a ventilated radiation shield or a naturally shaded position with free airflow. Keep it off metal and away from heaters, doors and wet plastic.
2. Put a second sensor under the fleece without letting it touch leaves or soil. An outdoor shaded sensor gives you a useful comparison.
3. Read and reset the minimum and maximum each morning. Record the forecast, actual low, sunny or cloudy conditions and whether fleece was down.
4. Use a soil thermometer at sowing depth before direct sowing. Follow the crop's germination range. Warm air over cold soil can be misleading.
5. Check the hottest reading after a sunny day. Winter sunshine can overheat covered crops, especially beneath an inner plastic cover.

What you notice	What to change
Covered-bed low is nearing the crop's safe limit	Close fleece before the evening chill. Add a second breathable layer if needed and check the forecast again.
Rapid rise on a sunny morning	Open inner covers and begin controlled ventilation before plants become hot.
Wet leaves remain wet through midday	Reduce moisture sources and exchange air when safe. Check for overcrowding.
One edge is much colder	Find a draught, move vulnerable pots or give that bed extra cover.

Choose action points from the hardiness of the actual crop and its age. Seedlings, roots in pots and plants grown soft in warmth can be more vulnerable than established plants. Air temperature alone doesn't tell you the leaf temperature.

Reading: [1], [4]. Full links on pages 36-38.

Add protection close to the plants

Keep the bed cover easy to open. You'll need access on every usable day.

A low fleece tunnel is a good first step because it shelters a small bed without shading the whole structure. It slows heat loss from the soil and leaves. It doesn't make heat, and it won't keep every crop safe through every freeze. Some heavier fleeces offer only a few degrees of protection. Measure the result in your own tunnel.

Layer	Where it fits	Trade-off
Breathable horticultural fleece	Over low hoops above a crop bed	Easy to lift. Heavier grades admit less light.
Second fleece layer	Temporary extra night protection	Remove or lift when safe. More shade and trapped damp if left down.
Horticultural bubble insulation	A small heated zone or selected wall area	Cuts light. Keep doors and vents usable.
Inner clear polythene	A purpose-made, ventilated inner tunnel	Can overheat and collect condensation quickly.
Manufacturer's double-skin system	A frame designed for it	Needs correct installation and, if inflated, a dependable blower.

Keep the main cover clear

Don't hang wet fleece or heavy insulation from a lightweight frame unless the maker permits it. Keep fabric away from heaters and moving vent parts. Avoid improvised roof sheets that catch drips or sag onto crops. For a hardy salad bed, removable fleece often makes better use of the winter light than wrapping every wall.

A useful test

Cover one patch overnight and compare its minimum with the rest of the bed for several nights. Include a cloudy day. A sunny-day result can overstate the help you'll get during a cold, dull week.

Reading: [1], [5]. Full links on pages 36-38.

Low-cost fleece system: the materials

Example bed: 1.0 m wide by 3.0 m long, with a cover about 0.5 m high.

Part	Quantity for this example	What to choose
Flexible smooth hoops	5 hoops, about 2.0 m of tube each	Ready-made garden hoops or suitable flexible 20 mm irrigation tube. Test its bend before cutting all five.
Horticultural fleece	One piece about 2.2 m × 4.4 m	A breathable frost grade, often around 30 g/m ² . Check light transmission and frost guidance on the product.
Smooth garden clips	10-15	Fit the hoop diameter. No sharp teeth against fleece.
Edge weights	Two 3 m runs	Smooth timber battens in manageable lengths or reusable sandbags. Avoid splintered timber.
Ridge support	About 4 m soft cord	Tie along hoop crowns to resist sideways movement. Anchor ends inside the bed.
Tools	Tape measure, suitable cutter, gloves	Cap or smooth cut ends. Use safe tool handling.

Size the fleece before cutting

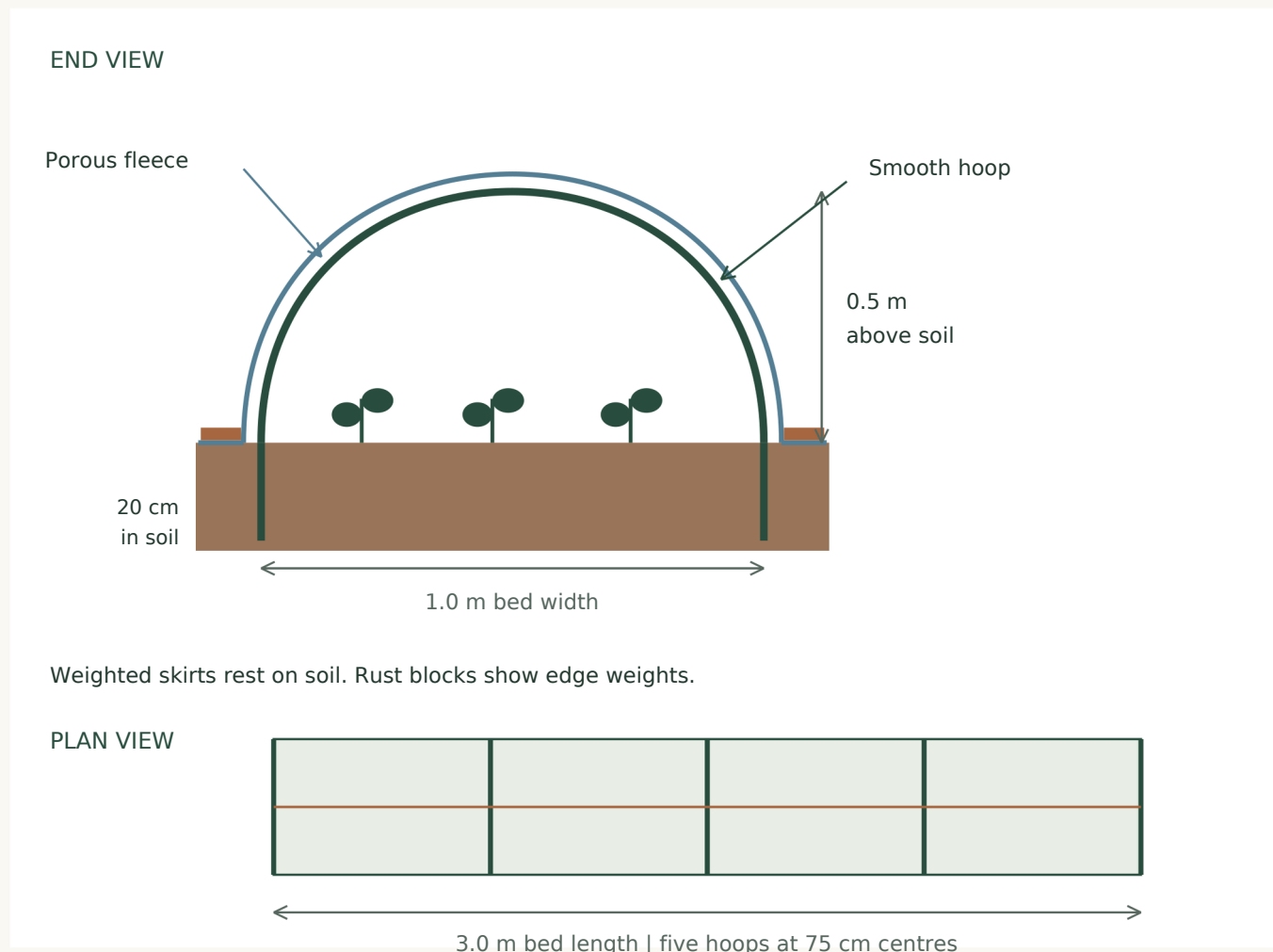
A half-circle hoop spanning 1.0 m has a curved length of about 1.57 m. Allow roughly 25-30 cm of fleece on the soil at each side. Along the bed, allow enough fabric to close both 0.5 m-high ends and leave a weighted skirt. The 2.2 m × 4.4 m piece is a starting size. Drape and test it before making the final cut.

Reuse sound clips, weights and tubing if they're smooth and clean. Buy fleece wide enough in one piece to avoid a draughty seam. Prices vary by location, so price this short list locally rather than relying on a fixed project cost.

Reading: [5]. Full links on pages 36-38.

Low-cost fleece system: measured layout

The frame sits in the bed. Nothing hangs from the outer tunnel.



Weighted skirts rest on soil. Rust blocks show edge weights.

Dimensions to check on site

Push each hoop end about 20 cm into firm soil, clear of plants and buried irrigation. A roughly 2.0 m tube leaves about 1.6 m above the soil, close to the half-circle shown. Actual shape varies with the tube. If it kinks or resists the bend, use a suitable garden hoop instead. Don't force or heat it.

Place hoops at 0, 0.75, 1.5, 2.25 and 3.0 m. Tie a soft ridge cord to each crown. Keep ties, pegs and weights inside the bed edge. Aim for at least 10 cm of space above the tallest leaf. Larger plants need a taller hoop and a wider cover.

This is a bed-cover layout, not a load-bearing tunnel design. It provides no support for the main structure. Dimensions are metric. 1 m is about 3 ft 3 in and 20 cm is about 8 in.

Low-cost fleece system: fit and use it

Allow about an hour for a small bed once the materials are ready.



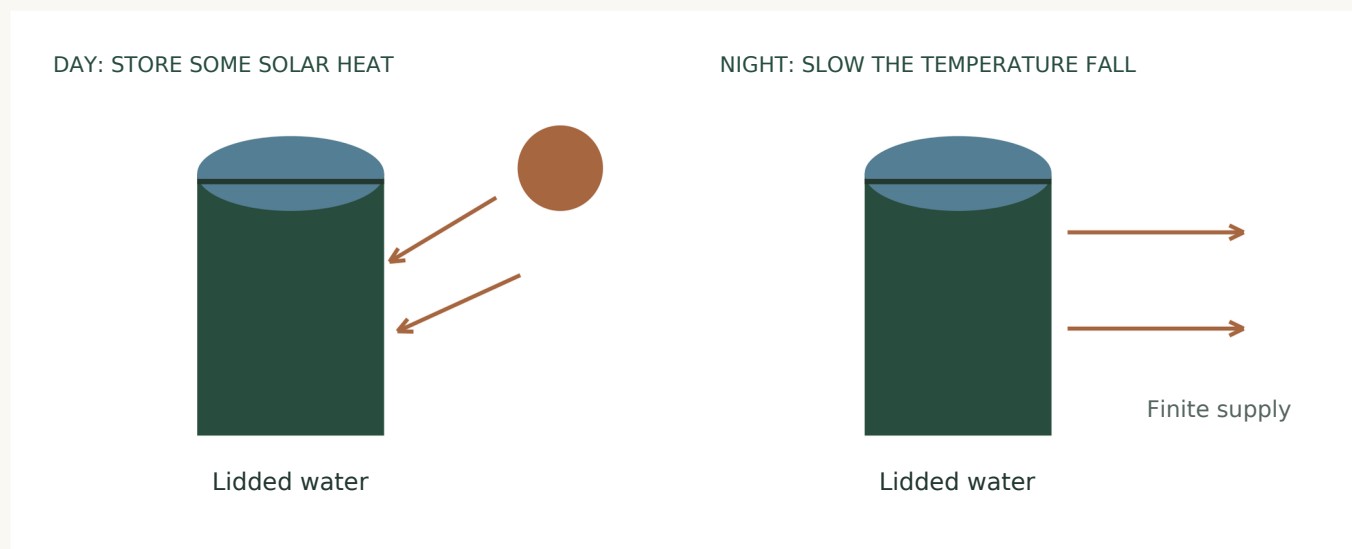
Clip without stretching the fabric tight. Keep the weighted edge beside the plants and off the walking route.

- 1.** Prepare the bed edge. Remove sharp debris and mark the five hoop positions. Insert the hoops evenly, then check their height and stability.
- 2.** Tie on the ridge cord. Drape fleece over the frame and centre it. Check that it reaches the soil on both long sides and closes both ends.
- 3.** Clip one long side in place. Use a batten or sandbags to weight its skirt. Weight the opening side so it can lift without untying the frame.
- 4.** Fold the excess at each end onto the soil and weight it. Don't leave an open tunnel end at night. Keep fabric loose enough to avoid tearing.
- 5.** Put a sensor beneath the cover and test opening it. Roll the fleece toward the fixed side and secure the roll above the crop. Don't drag wet fabric across the leaves.

Close it before the late-afternoon temperature falls. On suitable mornings, wait for frozen fabric and leaves to thaw before lifting. Remove a temporary second layer first. If fleece sags, adjust the hoop spacing or ridge cord. Dry and store it when it's no longer needed.

Use water to soften temperature swings

Water stores daytime heat and releases some of it as the tunnel cools.



A dark, lidded water container can slow the temperature fall near it after a sunny day. A cold container in a dull spell offers much less help. Thermal mass can also take time to warm again, so treat it as a small buffer and compare thermometer readings before filling the tunnel with barrels.

1. Use clean containers that have never held chemicals. Choose tight lids and a safe design for children and pets.
2. Set them on level, load-bearing ground where winter sun reaches them without shading the crops. Keep doors, vents and paths clear.
3. Fill in place. Water weighs about 1 kg per litre, so a 100-litre container holds roughly 100 kg of water. Don't put a large drum on a light bench.
4. Allow the container maker's space for freezing expansion. Check lids, taps and bases for leaks. Secure containers against tipping.

A worked example, not a heating promise

200 litres of water cooling by 5°C releases about 1.16 kWh of stored heat. Spread over ten hours, that averages only about 116 watts. Actual heat reaching the crop varies. This cannot replace a heater sized to keep a tunnel frost-free.

Paving and soil also store some warmth. Don't add mass at the expense of growing light or access. Never assume a barrel means the crop can survive a forecast freeze.

Reading: [6]. Full links on pages 36-38.

Stop unwanted draughts

Seal leaks while keeping the ventilation controls working.

- 1.** On a breezy but safe day, use a strip of light tissue to find leaks around closed door frames. Don't use a flame.
- 2.** Clean and dry the frame. Replace worn door seals with a material suited to that frame and outdoor damp. Test the latch before finishing.
- 3.** Repair small cover holes with proper polytunnel tape. The repair sequence is on page 20. Don't stick incompatible adhesives to the film.
- 4.** Check base rails or buried skirts for gaps and slippage. Re-secure them using the tunnel's own fixing method. Don't dig around ground anchors or pull at cold, brittle plastic.
- 5.** Fix a loose threshold flap or a badly fitting end panel. Keep drainage routes open so water cannot collect at the base.
- 6.** Reopen all vents and doors after the work. Nothing should jam, catch fabric or obstruct the exit.

Protect the cold edge

The bed beside a loose door or exposed wall may need more cover than the centre. Keep tender pots away from these spots. Group small containers on a stable bench or ground surface and insulate the pot sides if needed, while leaving drainage holes clear. Roots in small pots can chill much faster than roots in a bed.

Controlled air exchange still matters

A well-fitted door lets you choose when to ventilate. An accidental gap lets weather choose for you. Keep any heater's required air supply open and follow its installation instructions.

Reading: [1], [7]. Full links on pages 36-38.

Decide what heating is worth to you

Set a crop goal before you pay to warm the air.

Growing plan	Practical expectation
Unheated with fleece	Hardy established crops, with frost still possible. Harvest windows depend on thawing and local weather.
Frost-protection heat	A measured crop-zone minimum around 3-5°C (37-41°F) gives a margin above freezing. It does not make salads grow quickly in poor light.
Cool growing space	Some leafy crops can use nights around 7-10°C (45-50°F), if daylight is adequate. Check the crop and energy cost.
Warm-season crops	Tomatoes, cucumbers and peppers need a much warmer, brighter regime. They are poor choices for a low-cost winter trial.

Set up the heater around the crop

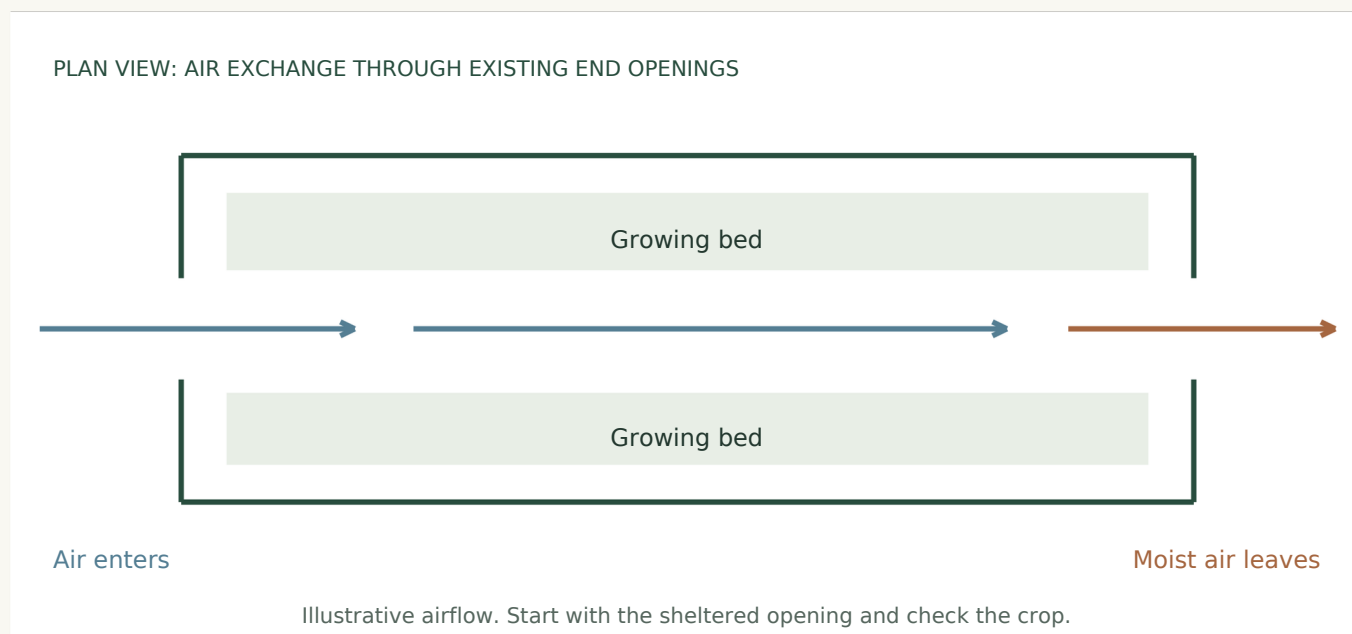
1. Choose a greenhouse-rated heater and thermostat. Have a competent installer assess the damp-location electrical supply, RCD/GFCI protection and load.
2. Use the clearances specified by the heater maker. Keep fleece, polythene, watering and combustible materials away. Don't put a portable heater beneath a low fleece cover.
3. Place the control sensor at crop height, away from the heat jet. Check it against an independent thermometer. Test the coldest end before trusting the setting.
4. Plan for power failure. Keep fleece ready and move portable vulnerable plants to a suitable frost-free place when an outage is likely.

An electric heater rated at 2 kW uses 10 kWh if it runs at full power for five hours. Multiply actual kWh by your electricity tariff. This is an energy example, not a heater-sizing rule. Avoid candles, charcoal, barbecues and improvised combustion heaters. They bring fire and gas hazards into a confined plastic structure.

Reading: [1], [8]. Full links on pages 36-38.

Move damp air out before it lingers

Warm, wet air can leave your crops soaked when the temperature drops.



Condensation forms when a surface is cold enough for water vapour to become liquid. A tunnel can have warm air and cold leaves at the same time. Damp foliage, dead leaves and crowded growth give disease an easier start. The aim is a crop that dries during the day, with gentle air movement around it.

Reduce the moisture load

- Water the soil early enough for splashed foliage to dry. Empty standing water and keep paths as dry as you can.
- Lift fleece on suitable days and remove dead leaves. Leave space between plants instead of packing every gap.
- Exchange air through existing doors or vents. Open gradually and keep cold jets away from young plants.
- A suitable circulation fan can move air between leaves, but it doesn't remove water from a closed tunnel. Ventilation still has a job.

A humidity meter helps you spot trends. Long periods near saturation or leaves staying wet deserve action. There is no single humidity number that solves every crop problem. In a heated tunnel, a brief heat-and-vent cycle can remove moisture. Heating a closed space alone doesn't remove it.

Reading: [4], [9]. Full links on pages 36-38.

Use a weather-led airflow routine

Check more often when sunshine follows a cold night.



A door stay gives you control over an opening. Secure it against sudden gusts.

When / condition	Your next action
Morning after a freeze	Read the overnight low. Leave frozen leaves alone. Check the forecast before opening covers.
Late morning, calm and above freezing	Open the sheltered end or a small vent first. Check crop temperature and leaf wetness after 10-15 minutes.
Bright midday	Increase openings gradually if the tunnel warms. For hardy salads, 15°C (59°F) can be a useful starting cue to check ventilation, not a universal crop limit.
Dull, damp day	Try a brief air exchange at the mildest part of the day. Avoid chilling the crop below its safe temperature.
Afternoon temperature starts falling	Finish needed ventilation while there is still solar warmth. Close inner covers before the bed cools, once leaves are as dry as practical.
Severe wind or damaging frost	Follow the tunnel's storm procedure. Keep openings secure and inspect when it is safe.

The 10-15 minutes is a checking interval, not a fixed ventilation duration. Wind, tunnel size and the crop change the result. Trapping heat means closing at the right time, after dealing with damp air. A permanently sealed tunnel is likely to stay wet.

Reading: [1], [4], [9]. Full links on pages 36-38.

Clean the plastic without damaging it

A film of algae is an unwelcome shade cloth in winter.



Work from firm ground with a soft cleaning head. Avoid pressure, grit and stretching the film.

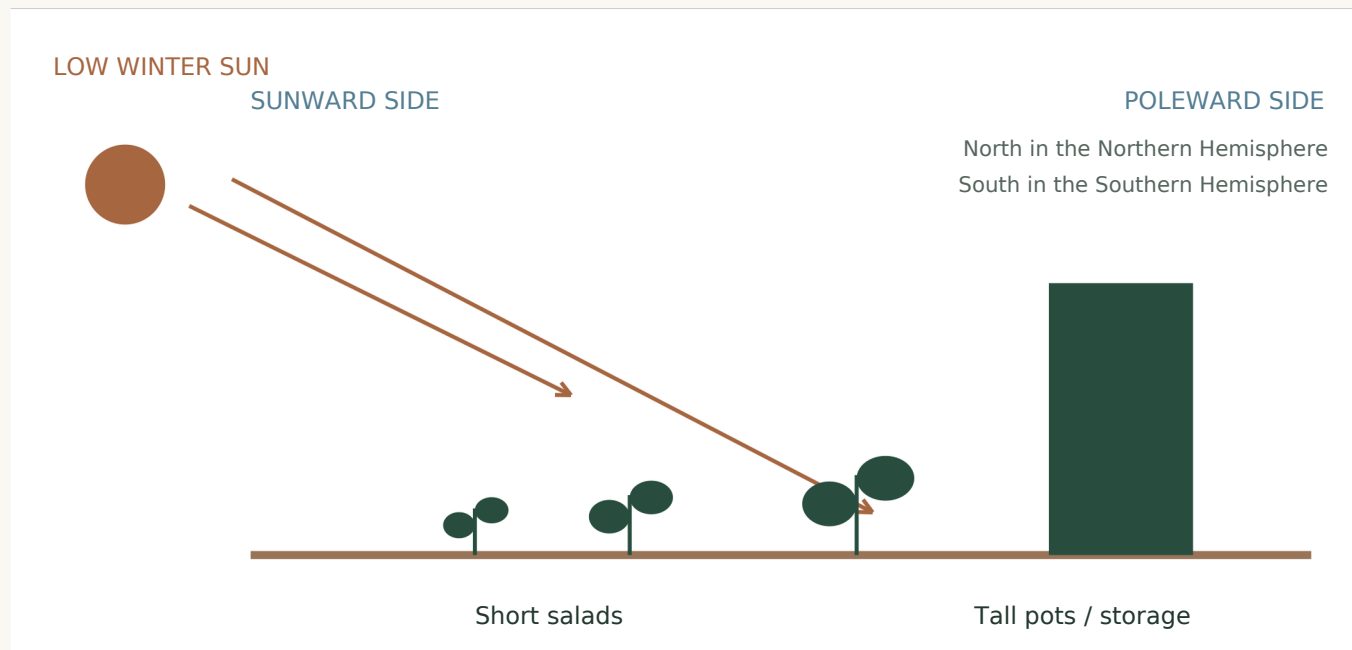
- 1.** Choose a mild, calm day. Keep frost-sensitive plants protected while doors are open. Remove loose leaves and debris without scraping the cover.
- 2.** Check the cover maker's cleaning instructions. Use warm water and a soft cloth or approved brush first. Use only a cleaner confirmed as compatible with that film.
- 3.** Wet a small area to soften dirt. Wipe gently and rinse away grit. Work down the cover without leaning your weight on it.
- 4.** Clean accessible inside surfaces too. Shield edible crops from dirty water or cleaning solution, then remove the shield at once.
- 5.** Rinse as directed, clear puddles and let the space dry. Check seams and fixings as you go. Note tears for repair once the film is dry.

Don't use a pressure washer, abrasive pad, sharp scraper or solvent on polythene. Some films have coatings that harsh cleaning can damage. Never climb on the tunnel or lean a ladder against it. Arrange suitable equipment or help for areas you cannot reach safely from the ground.

Reading: [10]. Full links on pages 36-38.

Give each crop its share of winter light

Put low crops on the sunward side and bulky objects behind them.



Winter shadows are long. A water barrel, potting bench or row of tall kale can shade a bed for hours. Watch the real shadows before you move plants. In the Northern Hemisphere, the sunward side is usually south. In the Southern Hemisphere, it is usually north. Nearby houses and trees can change which part of your tunnel actually receives light.

1. Remove summer shading and unused trays. Clear plant debris that casts shade against the lower plastic.
2. Give seedlings and short salad crops the brightest open space. Move tall pots, tools and water storage to the poleward side if the layout allows.
3. Lift fleece during safe daylight windows. If a freeze is persistent, protecting the crop takes priority, but check beneath the cover rather than leaving it unseen for days.
4. Space plants for their mature size and keep leaves away from wet polythene. Turn pots occasionally where light arrives mainly from one side.

A clean, pale path or low wall can reflect some light, but mirrors and foil can create awkward glare and hot spots. They won't replace direct daylight. Supplemental lights require fixtures rated for the damp location, a crop-appropriate output and timer, plus a safe supply. Heating alone cannot make up for very low light.

Reading: [1], [11]. Full links on pages 36-38.

Water less often, but check the roots

Rain outside tells you little about moisture beneath the cover.



Check below the dry surface beside a plant. Avoid cutting through the crown or main roots.

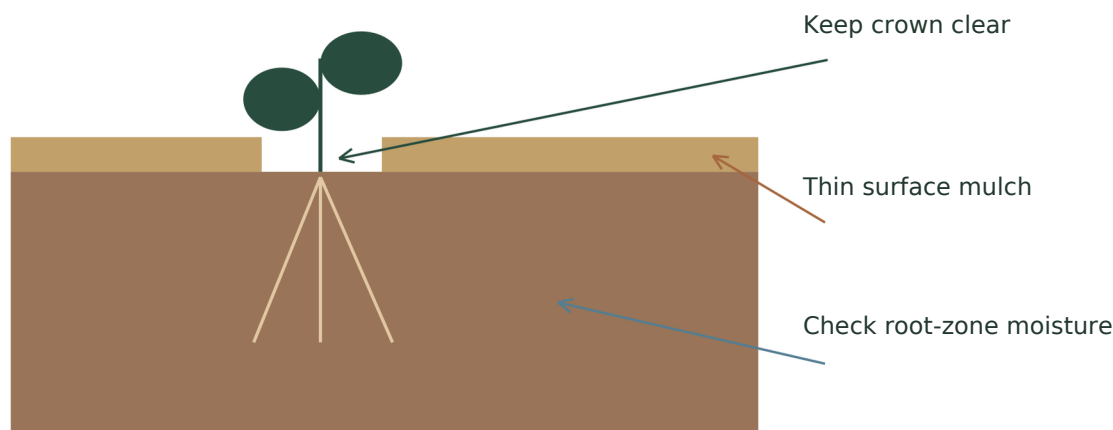
- 1.** Check several parts of the bed. Feel soil about 5-10 cm (2-4 in) down beside established plants. For newly sown seed, inspect the shallow seed zone as well.
- 2.** If soil is still moist and the plants are firm, wait. If the root zone feels dry, water slowly at soil level during a mild morning.
- 3.** Let the water soak in, then recheck the depth reached. Add another small pass if the root zone is still dry. Stop before puddles or runoff form.
- 4.** Keep water off leaves where possible. Ventilate when conditions allow so splashes dry before evening.
- 5.** Check containers separately. Small pots, fresh transplants and heated zones can dry sooner than bed soil. Remove saucers that hold stagnant water.

Don't follow a summer timer or a fixed weekly ration. Cold, cloud and slow growth often reduce demand, but a sunny spell can change it quickly. Wilted frozen leaves are not proof of drought. Wait for the plant to thaw and check the soil before watering. Drain hoses and protect taps when frost is expected.

Reading: [12]. Full links on pages 36-38.

Insulate the soil without burying plants

A little surface cover can help. A cold, wet blanket can cause trouble.



Section through an established bed. Mulch depth is exaggerated.

Soil loses heat more slowly than the air. Fleece over hoops traps some of the warmth rising from the bed and often suits low winter salads better than a thick mulch. Mulch can reduce temperature swings and evaporation, but it also blocks daytime soil warming. In a wet, shaded bed, adding more material may keep it cold and damp.

For established plants

- 1.** Remove weeds and damaged leaves. Check that the soil drains and is moist rather than saturated.
- 2.** Where a mulch is useful, spread a thin layer of clean, fine material between established plants. Around 2 cm is a modest trial depth. Keep the crown and leaf bases uncovered.
- 3.** Leave small seedlings and new seed rows clear. Inspect beneath the mulch for slugs and excess wetness.
- 4.** Pull mulch back if the bed stays cold and wet. As spring arrives, clear sowing strips so sunlight can warm the soil.

Well-rotted leaf mould adds less fertility than many rich composts. Use compost only where the soil needs it. For pots, wrap the sides or group them in an insulated crate, but leave drainage open. A thick straw layer may be useful over dormant roots in some systems, yet it is a poor default beneath closely spaced salad leaves.

Reading: [5], [13]. Full links on pages 36-38.

Keep tunnel soil in good condition

The roof keeps rain out. It also stops rain washing accumulated salts away.

Before the winter planting

Remove crop debris and weeds, then loosen only areas that need it. Work from the path so you don't compact the bed. If soil smears or sticks heavily to tools, let it drain before working it. Check pH and nutrients with a soil test, especially if you've added compost or manure for several years.

- 1.** Sample representative parts of each bed using the laboratory's instructions. Ask whether soluble salts testing is appropriate for a long-used tunnel.
- 2.** Use the result to decide on amendments. Repeated thick compost or manure dressings can build excess nutrients. More isn't always better.
- 3.** Give winter plants enough nutrition to establish, then avoid routine rich feeds during very slow growth. Diagnose pale leaves before adding fertiliser.
- 4.** Check irrigation water if pH or salt problems keep returning. A local soil adviser can help interpret both water and soil results.

When a bed is resting

Keep unused soil from becoming dust-dry. A cover crop sown early enough can hold living roots in the bed, but it still needs water and a plan for removal before spring planting. In a small tunnel, a simple covered fallow bed may be easier than a dense cover crop that ties up space.

Don't flood a cold planted bed to fix salts

If a test confirms excess salts, arrange a leaching plan for a suitable empty period with adequate drainage. Removing the main cover is only an option if the structure and seasonal plan allow it. Don't improvise this during a storm or over winter crops.

Reading: [13], [14]. Full links on pages 36-38.

Check the frame, tension and tears

Small cover faults are easier to repair before the wind finds them.



Repair tape with rounded corners

Overlap intact film on every side
Use tape maker's overlap and
application-temperature guidance

Tape both faces only where safely accessible and specified for the product.

- 1.** Inspect in calm weather. Check anchors, diagonal bracing, hoop joints, door hinges and base fixings. Use the maker's fastener and tightening instructions.
- 2.** Look for loose flapping areas, sharp contact points and worn anti-hotspot tape where specified. Correct the rubbing cause as well as the tear.
- 3.** For a small repair, clean and dry the film using a compatible method. Bring the edges together without pulling the cover out of shape.
- 4.** Apply purpose-made polytunnel repair tape with rounded corners and the maker's stated overlap. Smooth out trapped air. Patch the opposite face only if safely accessible and advised for the product.
- 5.** Mark the repair location and inspect it after wind. Long tears, brittle film or several failing patches may need a new cover.

Tension changes with the weather

Plastic expands and contracts. Use the tunnel's base rails or tensioning system as directed, in suitable calm conditions. Don't yank cold film tight or add random ties over the roof. Excess tension can pull a tear wider, while loose film can flap and wear. Never assume a taut cover proves the frame is safe for snow.

Reading: [7], [15], [16]. Full links on pages 36-38.

Have a snow and storm plan ready

Stay out if the frame is bending, shifting or carrying an unsafe load.

Before bad weather arrives

- ☐ Read the model's wind and snow guidance. Ask the maker about approved reinforcement before winter, not during a storm.
- ☐ Secure doors and vents as instructed. Put loose tools, pots and spare materials away.
- ☐ Clear the route around the tunnel so shed snow has somewhere to go. Keep runoff away from anchors and the growing beds.
- ☐ Check the forecast and arrange someone to inspect if you'll be away. Have repair materials ready in a dry place.

If snow starts to collect

Follow the maker's removal method while accumulation is still light and the structure is sound. Work from a safe position on the ground and avoid being beneath falling snow. Where the maker permits it, use a soft tool suited to the cover and remove small amounts evenly. Leave hard ice alone rather than striking or scraping it.

Never climb onto the tunnel, use sharp tools against the film or enter a sagging structure to push snow off from below. Don't pile cleared snow against the sides. If safe removal is no longer possible, keep people away and contact the supplier or a competent structural professional. Crop recovery can wait.

There is no safe universal snow depth

Wet snow can weigh far more than dry powder. Tunnel shape, bracing, anchoring and cover condition all matter. A small crop heater should never be assumed capable of melting a roof load.

After the weather passes

Inspect from outside first. Check for distortion, shifted anchors and fresh tears before entering. Isolate damaged electrical equipment safely and arrange repair. Record faults so they're fixed before the next event.

Reading: [15], [16]. Full links on pages 36-38.

Choose crops for the winter you have

Start with leaves you enjoy eating and can pick in modest amounts.

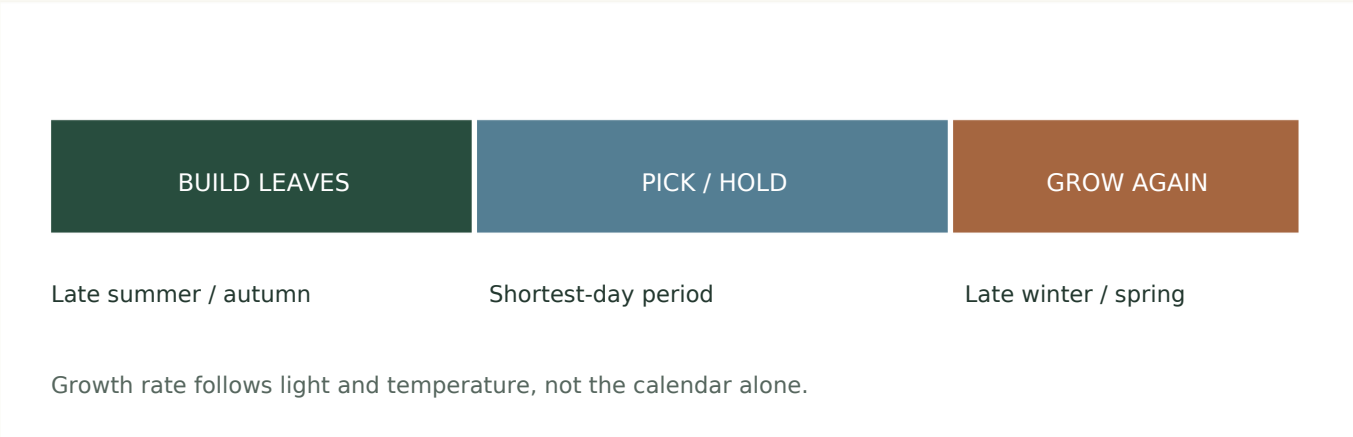
Crop group	Unheated tunnel	Heated tunnel
Spinach, claytonia, corn salad	Strong starting choices when established early. Use fleece in severe cold.	Frost protection reduces losses. Light still limits regrowth.
Winter lettuce, mizuna, tatsoi, rocket	Good autumn crops. Hardiness varies by variety, age and weather.	Useful in a cool space. Ventilate to avoid soft, crowded growth.
Kale and chard	Established kale is a useful trial. Chard is less dependable in hard freezes.	Can keep supplying leaves but large plants take valuable space.
Carrots, turnips, radishes, beetroot	Best grown to useful size before the darkest period. Hold or harvest as conditions allow.	Some later sowing is possible with enough light and suitable soil temperature.
Salad onions, garlic, bulb onions	Salad onions can overwinter. Garlic and bulb onions are mostly crops for a later harvest.	Heat is rarely worth buying for these hardy alliums.
Broad beans and peas	Autumn starts suit mild areas. Mostly an early spring or summer crop.	Modest warmth may help starts. Flowering still needs adequate light and suitable conditions.
Tomatoes, cucumbers, peppers	Unsuitable for a cold winter tunnel.	Require a separate warm, bright growing regime with much higher running costs.

Choose seed described for autumn, winter or overwintering use in your region. Hardiness labels are not a promise for every tunnel. A small local trial gives better information than filling the whole bed with an unfamiliar crop.

Reading: [2], [3], [17]. Full links on pages 36-38.

Work backwards from the short days

Most winter picking begins with sowing weeks or months before winter.



- 1. Find the local autumn date when daylight first drops to about ten hours. Use sunrise and sunset times for your town. At lower latitudes this threshold may never occur, so use the coolest season and local growing advice.
- 2. Decide whether you want winter harvests or plants to carry into spring. Reserve bed space early, even if summer crops are still yielding.
- 3. Work back from the low-light date using the crop’s winter guidance. Trial two sowings a week or two apart and record which reaches useful size.

Example for winter picking	Starting sowing window before the low-light date
Kale raised as transplants for full leaves	About 13-15 weeks: this refers to sowing seed, not planting out.
Full-leaf spinach or claytonia	About 7-8 weeks.
Baby spinach or baby brassica leaves	About 5-6 weeks.

These are trial windows based on winter-growing schedules, not fixed deadlines. Early cold, slow varieties and a shaded site can demand earlier sowing. If your local low-light date is 1 November, seven to eight weeks earlier is roughly 6-13 September. Sowing after the window usually shifts the harvest toward spring.

Root crops and alliums often need longer lead times. Check the crop pages that follow. A seed packet’s days to maturity usually reflects better growing conditions than a dark winter bed.

Reading: [2], [18]. Full links on pages 36-38.

Grow a dependable bed of winter leaves

Spinach is a sensible first crop. Add variety once you know your tunnel.

Crop	Starting spacing for whole plants	Winter use
Spinach	15-20 cm apart, rows about 25-30 cm apart	Pick outer leaves from established plants. Choose autumn or winter varieties.
Winter lettuce	25-30 cm apart, adjusted for the variety	Loose-leaf types suit small pickings. Later autumn sowings may mainly crop in spring.
Claytonia / miner's lettuce	10-15 cm apart	Useful for small salad harvests. Give it room and avoid a wet mat of leaves.
Corn salad / lamb's lettuce	10-15 cm apart	Harvest rosettes or selected leaves. Allow time for slow establishment.

Sow and establish the bed

1. Prepare a fine, firm surface and water dry soil before sowing. Use the seed packet's depth. Spinach is commonly sown about 2.5 cm deep, while small lettuce seed needs a much shallower covering.
2. Keep the seed zone moist until emergence. If late-summer tunnel soil is too hot for good germination, start suitable crops in a cooler bright place and transplant while young.
3. Thin or plant out to the variety's spacing. Water in at the roots, then check that plants settle without wilting.
4. Let plants establish before taking leaves. Harvest a few outer leaves from several plants and leave a healthy centre on each.

Avoid stripping the bed just before the shortest days. Winter regrowth may take weeks. Follow the packet where its spacing differs from these starting figures, and widen crowded plants if leaves stay wet.

Reading: [3], [19], [20]. Full links on pages 36-38.

Add different flavours without crowding

A few contrasting leaves make a small harvest more useful.

Crop	How to fit it in	Watch for
Mizuna and tatsoi	Start in late summer or autumn. For small whole plants, allow roughly 20-25 cm, or use the packet's baby-leaf spacing.	Mature rosettes can trap wetness. Lift fleece and remove damaged outer leaves.
Rocket	Sow short rows and thin toward 15 cm for individual plants. Autumn plants can crop under cover.	Warm spells and increasing day length encourage flowering. Don't rely on one ageing row.
Kale	Use a compact variety and allow roughly 40-45 cm for whole plants. Start early enough to build a framework of leaves.	Tall plants cast shade. Put them behind short crops and limit their share of a small tunnel.
Chard	A few established plants can supply leaves in mild winter conditions. Allow about 30 cm or follow the variety.	Hard freezes can damage it. Don't use chard as the only unheated winter leaf crop.
Parsley and coriander	Move established parsley pots into a bright spot. Sow coriander early enough to establish in cool conditions.	Cold wet roots and weak light. Small new sowings may wait until spring to give much.

If you sow a baby-leaf strip

Use a narrow strip you can cut without leaning on the bed. Sow thinly enough for airflow, keep the crown above the cutting line and leave some healthy growth. A dense mat may produce one small harvest and then stall. Start a second strip before the first is exhausted, while there is still enough light for establishment.

Keep crop labels and sowing dates beside each row. Winter varieties and ordinary summer varieties can behave quite differently under the same fleece.

Reading: [3], [21], [22]. Full links on pages 36-38.

Grow roots early, then use the shelter

A tunnel can make a mature crop easier to lift through winter.

Crop	Establishing the crop	Winter expectation
Carrots	Direct sow in a deep, fine bed in summer or late summer for autumn growth. A 1 cm sowing depth and 5-8 cm final spacing suit many small-root types.	Aim for roots near the size you want before low light. New midwinter sowings will be slow.
Salad radishes	Sow short rows in late summer or early autumn, then thin to the packet's spacing, often about 3-5 cm.	Use while tender. The fast summer maturity claim won't apply in a cold, dark bed.
Winter radishes	Choose a winter type and sow in its summer window. These need more room and time than small salad radishes.	Harvest mature roots as conditions allow. Protect against hard freezes.
Small turnips and beetroot	Sow in time for late-summer and autumn growth. Thin to the variety, often around 10 cm for small roots.	Hold suitable mature roots for later picking. Severe freezing can damage exposed shoulders.

A practical root-bed routine

1. Avoid fresh manure before carrots. Remove stones and prepare the bed without repeatedly pulverising wet soil.
2. Sow direct where possible. Keep the shallow seed zone moist, then thin without leaving a crowded row.
3. Water evenly while roots swell. Long dry spells followed by a soaking can lead to poor quality or splitting.
4. Check a sample root before relying on the bed for winter meals. Lift only from workable soil and inspect for decay.

Fleece can help keep the bed accessible. In prolonged severe cold, lift sound mature roots before the soil freezes and store them using crop-appropriate cool storage. Don't try to wrench roots from frozen ground.

Reading: [17], [23], [24]. Full links on pages 36-38.

Give alliums a clear harvest date

Garlic planted in autumn usually earns its space much later.

Salad onions and bunching onions

For winter picking, sow early enough in summer or late summer for plants to reach useful size. Hardy varieties sown in autumn often give their main harvest in spring. Sow thin rows at the packet's depth and spacing, or transplant small modules. Weed by hand while weeds are tiny. The narrow onion leaves do little to shade them out.

Garlic

- 1.** Buy planting stock suited to your climate. Choose autumn or spring planting types as advised locally. Many garlic varieties need a cold period to form divided bulbs.
- 2.** Separate cloves just before planting and keep the skins intact. Use a free-draining bed. Set cloves upright about 15 cm apart with roughly 30 cm between rows, adjusting depth to local and supplier advice.
- 3.** In a cool temperate garden, covering the clove tip with about 2.5 cm of soil is a common starting point. Cold-region outdoor planting depths can differ.
- 4.** Keep the bed weed-free and avoid persistent wetness. Mark the expected later harvest and reserve that space in your spring plan.

Bulb onions and leeks

Use overwintering onion sets only where the variety and local climate suit them. Match bulbing varieties to your latitude. Leeks need a long growing season, so winter leeks usually begin in spring or early summer. Established leeks can often stay outdoors, leaving tunnel beds for leaves that benefit more from shelter.

A useful space decision

If garlic or onions grow well outside in your garden, plant most of them there. Keep a short trial row inside for comparison. Heating a whole tunnel for hardy alliums rarely makes sense for a household harvest.

Reading: [25], [26], [27]. Full links on pages 36-38.

Use legumes for early crops and shoots

Broad beans and peas need more planning than a tray of salad leaves.

Broad beans for a later harvest

Autumn sowing suits mild areas, suitable hardy varieties and well-drained soil. In colder places, a late-winter start is often more dependable. Under cover, sow individual seeds in deep modules or small pots about 5 cm deep. Water them in, then keep the mix moist without leaving it saturated. Protect the seed from mice with a suitable secure barrier.

For plants staying in a tunnel bed, allow about 15-23 cm between plants and around 45 cm between single rows, or follow the variety. Install supports while plants are small and keep them away from the cover. A tall bean row can shade a whole salad bed. If you're raising plants for outdoors, harden them off before transplanting into workable soil.

Peas for pods

Use an overwintering type in a mild climate or start in late winter for planting out. Give roots a deep module and provide support early. Pod production needs enough light and healthy flowers. Don't count an autumn sowing as a supply of fresh pods throughout the darkest months.

Pea shoots in a small tray

1. Use untreated peas sold for edible shoots or growing. Sow in a draining tray of clean potting mix according to the supplier's depth and density.

2. Water gently, keep bright and check the mix rather than watering by habit. A cold tunnel can be too slow for useful midwinter growth.

3. Cut tender tops with clean scissors once there is enough stem and leaf. Leave lower growth if you want to try a second cut, but don't count on repeated harvests.

Remove fleece from flowering crops during suitable pollinator activity. Peas mostly self-pollinate, while insect visits can help broad beans. Ventilate flowering plants gently and keep frost protection ready for cold nights.

Reading: [28], [29]. Full links on pages 36-38.

Manage a heated crop zone carefully

Spend heat on a measured need and keep checking the light.

Choose one job for the warm space

A heated zone can protect salad plants from frost, start seedlings or hold frost-sensitive pots. Those jobs have different temperature needs. Separate them where practical. A small propagator can warm seed compost without paying to heat every cubic metre of air, but it still needs a safe installation and a bright place for seedlings after emergence.

- 1.** List the crops and their minimum temperatures. Use the most sensitive plant to decide the zone setting, or move it elsewhere so it doesn't set the bill for everything.
- 2.** Size any heater for the structure and likely outdoor low with supplier help. A setpoint is useful only if the heater can maintain it at the coldest part of the bed.
- 3.** Check the actual minimum beneath any crop cover. Air can be unevenly warmed, and a sensor beside the heater can hide a cold corner.
- 4.** Reduce heat after germination to the crop's growing requirement. Keep seedlings bright and spaced so they don't become tall and weak.
- 5.** Check watering more often in the warm area. Still allow drainage and ventilate damp air during suitable weather.

Make the electricity bill visible

Record meter or plug-monitor readings from equipment suited to the installation. Compare one week's energy with the crops protected and the harvest taken. If you're paying for a large empty area, a safe purpose-made partition may help. Keep heater clearances, air movement and exits as specified by the manufacturers.

If you miss the autumn sowing window

A heater cannot turn a tiny plant into a large winter crop without enough light and time. Use the remaining weeks to establish spring plants, or buy healthy winter-ready transplants suited to the conditions.

Reading: [1], [8], [12]. Full links on pages 36-38.

Catch pests and disease while patches are small

Lift the fleece and look closely. Hidden problems get a long head start.

What you see	First response
Holes, slime trails or damaged seedlings	Look under boards, pots and fleece edges for slugs. Remove hiding places and hand-pick where practical.
Clusters of aphids on soft leaves	Check leaf undersides and growing tips. Remove a small affected tip or wipe off a light infestation, then keep inspecting.
Grey fuzzy growth on dying tissue	Bag affected material at the plant. Remove dead leaves and improve drying and airflow.
Patchy yellowing with pale or dark growth beneath leaves	Separate suspect plants and seek a local diagnosis. Several diseases look alike. Don't assume all leaf marks are frost damage.
Seedlings collapse at the base	Review wetness, crowding and cleanliness. Remove affected seedlings and start fresh in clean trays if needed.
Mice disturb seed or nibble crops	Remove spilled seed, store supplies securely and use suitable exclusion. Keep any traps inaccessible to children and pets.

A five-minute inspection

Check a plant at the door, one in the centre and one under the deepest fleece. Look beneath leaves and around the soil line. Remove fallen leaves before they turn into a wet mat. Keep incoming pots separate until you've checked them, and clean tools between affected and healthy areas.

Good airflow and careful watering reduce several problems, but they don't cure every infection. If damage spreads, get a diagnosis before treating it. Any pesticide must be permitted for that edible crop, location and use, with its harvest interval followed. Start with removal, hygiene and physical controls where they're enough.

Reading: [9], [30]. Full links on pages 36-38.

Pick gently and leave enough behind

Wait for leaves to thaw and become flexible before touching them.



A small harvest spread across several plants leaves the growing centres intact.

- 1.** Pick on a dry or drying day after the crop has thawed. Frozen leaves can bruise or break even when the plant itself is hardy.
- 2.** Use clean hands, scissors and a clean bowl. Take sound outer leaves and keep the blade clear of the centre.
- 3.** Leave plenty of healthy foliage. If growth is very slow, take less and give the patch a longer rest.
- 4.** Remove yellow or diseased leaves separately. Keep soil and damaged material out of the harvest bowl.
- 5.** Wash edible leaves with clean potable water before use. Keep harvested greens cool and use them while fresh.

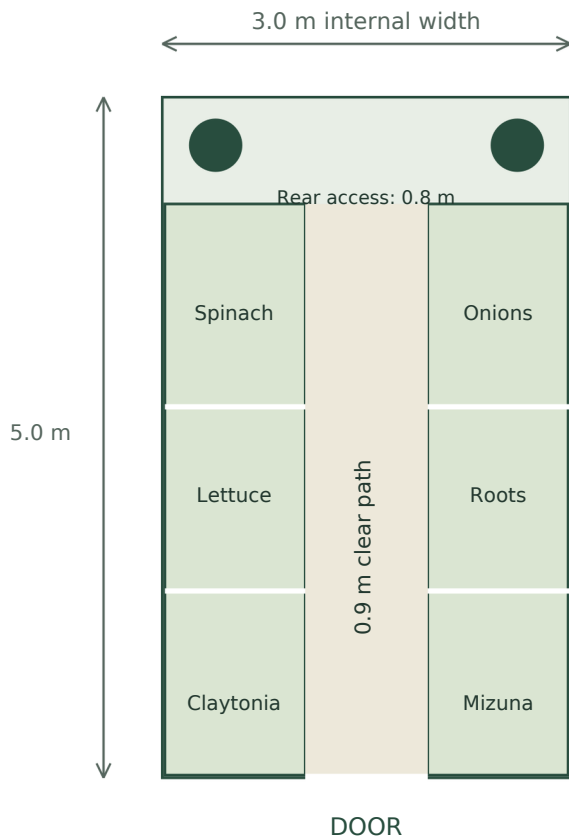
After a hard freeze

Let plants thaw slowly in their growing position. Check later for soft, water-soaked or rotting tissue and remove it when the extent of damage is clear. Don't add fertiliser to force an immediate recovery. Record which variety and cover arrangement survived, then use that evidence for next winter's planting.

Reading: [3], [19]. Full links on pages 36-38.

A small tunnel plan you can adapt

A 3.0 m × 5.0 m internal footprint with two beds and a clear central path.



Each bed: 1.05 m wide

Planted bed length: 4.2 m

Divide beds into trial blocks

Lidded water at the rear

Keep the full path clear

Plan is drawn to scale.

Water containers are schematic.

This example leaves a 0.9 m path and two 1.05 m beds. The rear 0.8 m is for access and small water containers. Check the actual curved wall height before using the full bed width. Keep leaves off the outer cover and reduce bed width if your reach, mobility or equipment needs more path space.

Begin with spinach, winter lettuce and one hardy salad in the left bed. Use the right bed for a small root trial and a few onions, with mizuna nearest the entrance. The labels show possible crop blocks, not a rotation rule or promised yield. Fit the fleece frame to the measured bed width and buy wider fleece if required.

Plan the next crop too

Mark which blocks must be empty for spring planting. Move overwintering starts outside only after hardening off and when soil conditions suit them. Keep crop-family records so brassica salads don't occupy the same patch season after season.

Work through the season in stages

Example months for a cool Northern Hemisphere garden. Use local conditions first.

Stage	Jobs to finish
Late summer Often July-August	Choose winter crops. Start slow crops and suitable roots. Reserve bed space before the last summer crop fills it.
Early autumn Often September	Sow or plant the main leafy crops while growth is still useful. Clean the cover, prepare fleece frames and check drainage.
Before repeated frost Often October-November	Repair tears and door gaps. Check anchors and bracing. Test sensors, heating and the emergency routine. Record the first cold-night readings.
Shortest days Often December-January	Harvest lightly from established crops. Open covers and vent when weather allows. Check moisture, pests and forecasts. Avoid routine feeding.
Returning light Often February-March	Try small sowings when soil is suitable. Watch for daytime overheating. Lift fleece more often and plan to clear winter crops before they crowd spring starts.
Spring changeover	Remove spent crops and inspect roots. Wash and dry fleece for storage. Review sowing dates, harvests and failures before choosing the next winter plan.

Three dates to write down now

- ☐ My local autumn low-light date and first likely damaging frost.
- ☐ The date I need each winter crop planted or near harvest size.
- ☐ The date each bed must be clear for spring or summer crops.

In the Southern Hemisphere, the winter tasks often fall around June-August, but latitude and climate change the sowing windows. Use the seasonal stages rather than shifting every date by six months without checking.

Keep the routine short and repeatable

Daily during cold or changeable weather

- ☐ Check the forecast and the actual overnight minimum at crop height.
- ☐ Look for wet leaves, frost and obvious damage before opening the cover.
- ☐ Ventilate when conditions allow. Recheck sooner if the sun comes out.
- ☐ Feel soil before watering. Check small pots and heated trays separately.
- ☐ Before dusk, check fleece, door catches and any heater or power alert.

Weekly in settled weather

- ☐ Lift covers and inspect leaf undersides, crowns and bed edges.
- ☐ Remove dead leaves and weeds. Clear the path and drains.
- ☐ Inspect tape repairs, cover fixings and door seals from a safe position.
- ☐ Update the crop log. Compare growth and harvests with the week before.

Before a severe frost, storm or absence

- ☐ Secure openings using the maker's storm procedure. Put loose items away.
- ☐ Add crop protection while the bed still holds daytime warmth.
- ☐ Check backup arrangements for vulnerable plants and essential equipment.
- ☐ Leave a helper a short written routine with thermometer locations and safe action points.

For the helper

Record the tunnel supplier's contact, heater instructions and the crop temperature that needs action. Tell the helper to keep out of any damaged or snow-loaded structure.

Your winter growing plan & log

Keep this sheet beside your seed records. Print another copy when it fills up.

Location / tunnel size / heating plan

Local low-light dates / frost risks / spring changeover date

Crop / variety	Sow / plant date	Bed & cover	Expected harvest

Weekly record

Date	Minimum °C	Moisture / ventilation	Harvest / change made

Use minimum temperature at crop height. Note whether it was measured under fleece. Add the outdoor low if you have it.

What I'll change next winter

Sources & further reading

Links checked 23 September 2026. Click a title to open the source.

[1] RHS | How to heat a greenhouse efficiently

Heating choices, insulation and the light trade-off.

[2] University of Minnesota Extension | Transitioning your high tunnel for fall and winter

Short-day scheduling and establishing winter crops.

[3] Johnny's Selected Seeds | Recommended Winter Crops & Varieties

Trial-based winter crop guidance. A commercial grower source.

[4] UMass Amherst Extension | Reducing Humidity in the Greenhouse

Moisture, ventilation and condensation management.

[5] RHS | Fleece and crop covers

Cover materials, light transmission and frost protection.

[6] University of Minnesota Extension | Deep winter greenhouses

Background on solar heat storage. These engineered structures differ from ordinary garden tunnels.

[7] Premier Polytunnels | How & When To Cover A Polytunnel

Manufacturer guidance on film fitting and tensioning systems.

[8] Utah State University Extension | Extending the Garden Season

Season-extension options and limits in cold climates.

[9] UMass Amherst Extension | Botrytis Blight of Greenhouse Crops

Disease conditions and cultural controls.

[10] RHS | How to Clean Your Greenhouse

Cleaning growing structures and allowing in winter light.

Sources & further reading, continued

[11] RHS | How to use your greenhouse in winter

Seasonal cleaning, spacing and winter use.

[12] Utah State University Extension | Irrigation Management in High Tunnels

Root-zone moisture and changing water demand.

[13] University of Minnesota Extension | Soil health and nutrient management in high tunnels

Nutrient accumulation, soil testing and cover crops.

[14] University of Minnesota Extension | How to correct problems caused by using too much compost and manure

Excess nutrients and soluble salts.

[15] UMass Amherst Extension | Reducing Storm Damage to Your Greenhouses

Structural preparation and the importance of sound bracing.

[16] Polydome | Winter Preparation for Polytunnels: Storm Protection & Cover Maintenance

Manufacturer advice on cover faults, openings and snow risk.

[17] RHS | Vegetables: Growing for Winter

Starting crops early enough for winter use.

[18] Johnny's Selected Seeds | Winter-Harvest Planting Dates

Relative sowing windows used in the examples on page 23.

[19] RHS | How to grow spinach

Sowing, autumn planting and leaf harvesting.

[20] RHS | How to grow lettuces

Winter varieties and spring-harvest timing.

Sources & further reading, continued

[21] RHS | How to grow salad leaves

Sowing and using mixed salad crops under protection.

[22] RHS | How to grow rocket

Autumn greenhouse planting and thinning.

[23] RHS | How to grow Carrots

Direct sowing, seedbed preparation and root care.

[24] RHS | How to grow radishes

Differences between salad and winter radishes.

[25] RHS | How to grow Salad Onions

Hardy autumn sowings for spring use.

[26] RHS | How to grow garlic

Planting stock, soil conditions and crop development.

[27] RHS | How to grow onions

Bulb onion sowing and care.

[28] RHS | How to grow broad beans

Mild-area autumn sowing, depth and spacing.

[29] RHS | How to grow peas

Overwintering starts and edible shoots.

[30] RHS | How to use your greenhouse in winter

Inspecting plants, pots and hiding places for pests.

About the illustrations and plans

The fleece dimensions, daily checking routine and thermal-mass calculation are practical worked examples. They are not manufacturer specifications. Crop spacings are starting points for home beds. Use the seed supplier's guidance for the variety and local advice for the climate.