TreeProject

Grower Manual

SOWING THE SEEDS FOR A SUSTAINABLE FUTURE

Returning healthy, sustainable indigenous ecosystems to the Victorian landscape

Thank you

We thank you for your time and commitment in assisting TreeProject by taking on this valued grower role. Volunteer growers are the backbone of our program - it is your time, effort and care given freely to raise the seedlings that makes all that we do possible.

Grower (your) responsibilities

- To keep in contact with your coordinator and with TreeProject answering all phone calls, texts and emails in a timely manner
- To record your seedling progress on the grower's portal within the timeline
- To have a minimum of 5 minutes of your time available everyday to care for the seedlings

Communication is important to the success of the program.
Your coordinator is a volunteer - just like you - so it's important to return calls/messages from them and keep in contact.

We have nine values we stand by at TreeProject - Can you find them in the manual?

Contact us

Please contact us at your earliest opportunity with any queries or concerns you may have.
If you are going away on holiday or your plans change at the last minute, please do let us know.

treeproject.org.au (03) 9650 9477 admin@treeproject.org.au

No Waste

Demonstrates our commitment to maximising resource efficiency in a purposeful and sustainable way.

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TreeProject

GROWER KIT CONTENTS

336 Forestry Tubes

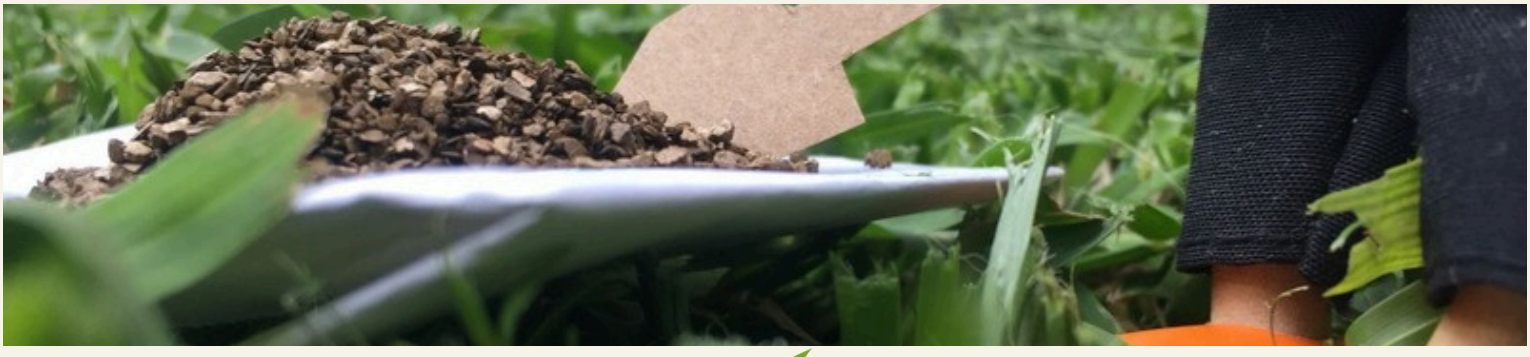
Our tubes have been recycled
by volunteers, washed and sterilised
for this growing season

7 Boxes

Each box contains Soil and a handful of fertiliser
Plus, you will receive four bags of Grit.

1 Grower Bag

7 packets of seeds
7 plant labels & Pencil
Smoke Treatment (if required)



HEALTH and SAFETY

Hygiene

- Use only the soil provided
- Use a raised bench (see page 7)
- Always wash your hands before and after handling/touching seeds/seedlings
- Dampen soil to prevent inhaling soil particles
- Do not touch your face while handling the soil or seeds
- Isolate seedlings with disease to stop the spread
- Disinfect all equipment before using

Health & Safety

- Each box weighs approx. 8 kgs when filled with soil or with 48 filled tubes
- Always bend your knees when lifting the boxes
- A waist height bench is recommended

Chemical Handling

- Follow the manufacturer's directions
- Store away from children and pets
- Dispose of empty containers correctly

While our aim is to produce healthy seedlings, we also want our volunteers to enjoy their growing experience and take precautions to ensure it is a healthy endeavour.

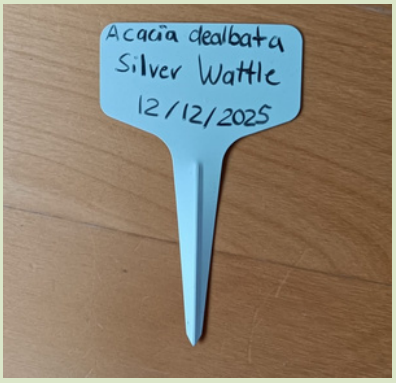
Before Picking up your Kit ensure you have:

- a minimum 30 minutes a day to care for your seeds/seedlings
- checked for a suitable spot in your yard (minimum 6 hrs of direct sunlight)
- a raised bench ready (see examples page 7)
- obtained a light coloured shade cloth (optional)
- attended training (compulsory for first year growers, experienced growers welcome to retrain)
- disinfected all tools, your bench and the container you will use to mix the soil and fertiliser in (see page 11 for disinfectants you can safely use with natives)

After Picking up your Kit

- Read the instructions on your seed packets and do any required pre-treatment (please note that refrigeration (Stratification) has been done by TreeProject)
- Write on the front of the label Name of Species (Botanical & Common Name) and date sown, and on the back of the label, your and the landholder's name
- Dampen the box of soil and fertiliser, then tip into a wheelbarrow or other prepared container and mix thoroughly to ensure the fertiliser is evenly spread throughout
- Remove the newspaper from the bottom of the box and discard
- Fill tubes with soil to within an inch (2 cm) from the top and tap the bottom of the tube gently on a hard surface to settle the soil. Top up if necessary (do not push the soil down with your hands as this can prevent water from penetrating)
- Place filled tubes back in the box (48 tubes per box)
- Sow seeds (one packet of seed per box of 48 tubes) out of the wind and following instructions on the seed packet; November pick up - seeds must be sown by mid-December; January pick up - seeds must be sown by mid-February
- Sprinkle on smoke treatment if required
- Sprinkle a thin layer of grit on each tube unless otherwise stated on the sowing instructions
- Water the seeds in with the mist setting on your nozzle or spray bottle to prevent washing away the seeds

Front of Label - Name of Species you are growing (Botanical & Common Name) and date sown



Back of Label - Your Name and The Landholder's name

Have Fun
This value proposition encourages an enjoyable and positive approach to environmental change. Have fun, love what you do and create a more sustainable planet.

Raised Benches

Your bench should be:

- sturdy enough to support approximately 80 kilograms (the weight of a kit)
- well-constructed from strong materials, so it will not collapse on pets or people (please see the photos below for examples of benches made and used by our growers)
- able to allow water drainage (use a bench that allows water to drain freely or use thin strips of wood or tubing to raise the boxes off a solid benchtop)
- a comfortable working height - suggested 3 feet off the ground
- in an airy, sunny position (minimum 6 hrs sunlight) with protection from extreme winds and weather
- close to a tap or suitable water source
- easily visible for regular inspections, maintenance, and to rotate seedlings in the box
- a weed-free site

You've got this, we've got you

This value conveys support and partnership in the shared mission of environmental conservation. Positivity because we believe in the power of collective action – together for a greener planet.

Creativity makes happy people

This value stands for the joy and fulfilment to be found in striving towards a greener tomorrow together.

Watering Methods

Check what watering system your seeds need before germination.
Some will just need mist watering twice a day others will need capillary watering.

Capillary Watering

- This method allows water to be absorbed from the bottom of the tube and encourages strong root development.
- Cat litter trays make an ideal capillary watering system. Drill a hole on the side of the cat litter tray, 1.5 cm from the bottom of the tray - this allows excess water to drain out.
- Place tubes in the tray and fill the tray with water. Stop filling once the water starts to come out the hole.
- The water bath or bog will need to be checked daily. Refill and/or refresh (if there is algae) as required.
- Once the seedlings have germinated remove the tubes from the capillary watering method, return to their box, and mist water from now on.

Mist watering

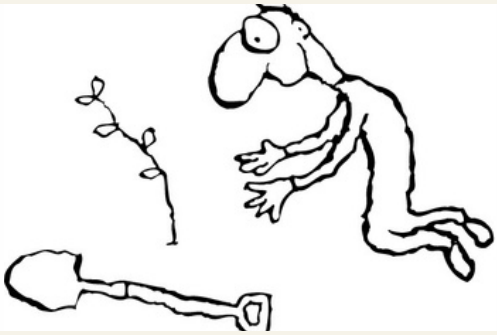
- This method allows water to be absorbed from above but is still gentle enough not to wash out the seeds.
- Set the nozzle on your hose to the mist setting or alternatively, use a spray bottle.
- Mist twice a day, taking care to make sure each tube gets water.

Shower watering

- Once seedlings reach 3 cm in height, water in the mornings with the shower setting on the nozzle.
- Always check your seedlings in the afternoon in case they need another watering, especially during Summer and Autumn.

Smart People do smart things

Encouraging sustainability, intelligence and informed decision-making for a greener future.



Thinning

PLEASE DO NOT TRANSPLANT OR THIN SEEDLINGS UNTIL YOUR COORDINATOR ASKS YOU TO

Our aim is to have one healthy seedling in each tube except in the case of grasses & sedges which grow in clumps.

Step by Step thinning

- Remember to follow the hygiene rules and disinfect any equipment you use before you start.
- Excess seedlings should be removed by cutting them off right at the very base with a sharp pair of scissors as close to the soil as you can access.
- Once seedlings have reached 2 cm high, you can thin to three seedlings per tube
- Later, when the seedlings are 3 cm to 6 cm tall, and **when asked by your coordinator**, thin out to one strong seedling per tube, leaving the strongest and healthiest seedling. Cut the excess seedlings off at the base. If some of your tubes do not have any seedlings in them then you can transplant excess healthy seedlings from other tubes to make up numbers (see Transplanting).

Make the world a better place

Highlighting TreeProject's positive contribution to the environment by facilitating the growth and planting of seedlings, grasses and bushes across Victoria

Transplanting

PLEASE DO NOT TRANSPLANT OR THIN SEEDLINGS UNTIL YOUR COORDINATOR ASKS YOU TO

Our aim is to have one healthy seedling in each tube except in the case of grasses & sedges which grow in clumps.

Step by step transplanting

- Remember to follow the hygiene rules and disinfect any equipment you use before you start.
- Choose a mild day. If it is too hot, you may lose the seedlings. Transplanting stresses the seedling.
- Empty soil out of any empty tubes into a container.
- Make sure your seedlings are well hydrated by giving them a thorough watering.
- Loosen the soil by squeezing together the corners of the tube.
- Gently remove seedlings from tubes.
- Put seedling roots in a weak solution of Seasol (see page 11) to minimise shock and stimulate root growth.
- Empty any remaining soil out of the tube into the container.
- Using only the soil from the tubes you emptied, half fill empty tube on the diagonal so that there is a clear path to the bottom of the tube. Lightly pack the soil so that it will stay in place when you turn the tube upright.
- Roots longer than the tube should be trimmed back to half the length of the tube. It is very important to keep the root straight and not bent, curled or twisted.
- Holding the seedling by a leaf, place the seedlings against the side of the soil so that the uppermost roots (usually there is a change of colour between the stem and the neck of the root) are a few millimetres under the surface and gently backfill the tube with soil. Make sure the roots are straight downwards in the tube.
- Continue to hold the seedling by a leaf while you gently tap the tube so that the soil settles and the seedling stays in the position, ensuring the root neck stays 2 cm below the lip of the tube. If some of the roots are exposed, gently add more soil. Do not pack the soil with your fingers.
- When transplanting is finished, ensure the seedlings are labelled. Only do one species at a time.
- Watering using the Seasol solution (used above) after transplanting will help prevent shock.
- Place the (identified) seedling transplants on a raised, shaded, sheltered site, for 10-14 days for them to settle. After the recuperation period and the seedlings are stabilised, place back with the rest of your seedlings.

Garlic Spray Recipe – The Natural Insecticide:

Garlic is effective against a wide range of diseases and insects at different stages in their life cycle (egg, larvae, adult).

- 10 cloves of garlic
- 1 litre of warm water

Roughly chop garlic and put it in warm water overnight. Strain out the garlic, put it in a spray bottle and use it within five days.

Milk Solution Spray for Mildew

(White powder on leaves and stems, see page 14 for examples)

- I part Cow's Milk to 5 parts water

Pour into a spray bottle and spray directly onto affected areas every second day

Seasol Solution for Transplanting

- one capful of Seasol
- 1 litre of water
- wide shallow tray

Pour Seasol and water into the tray, mix well

Show you care

Advocate for a greener future. This value encourages individuals to demonstrate their care for the environment through action.

Best Disinfectant is a two-step (it takes more time, but it's worth it)

You will need two spray bottles(one that is dark in colour, or if you can't get one, a spare spray top)
Fill one spray bottle with White Vinegar, and optionally, you can also add 10 drops of tea tree oil
Fill the second dark coloured spray bottle with 3% - 6% hydrogen peroxide, or affix the spare spray top to the hydrogen peroxide bottle

Step 1: Spray vinegar over all surfaces needing to be disinfected, wait 5 minutes and wipe off with a dry, clean cloth
Step 2: Spray hydrogen peroxide over all surfaces needing to be disinfected, wait 10 minutes and wipe off with a dry, clean cloth or leave to dry.

To clean and disinfect tools, spray with just hydrogen peroxide, wait 10 minutes and wipe off with a dry, clean cloth

Do not use household bleach, as it can irritate your mucous membranes and can damage plant tissues, roots and beneficial soil microbes.

Pests - Never put your boxes on the ground

From aphids to beetles to birds, pests come in all forms. All require immediate treatment. Below is a list of the most common ones. If a pest is difficult to identify or treatment fails, take a good-quality photo and contact your coordinator or the office.

Not all insects will cause damage to your seedlings; indeed, some are beneficial as they prey on others. Good insects include ladybirds, wasps, bees, praying mantis and some other bugs. Check what the bugs are before you do anything.

· **Slugs and snails** often hide between or under the tubes, so lift each tube to check for and remove them. Dispose of them as your conscience permits and use garlic spray as a natural repellent.

· **Caterpillars** come in many varieties with different feeding and living habits. They can appear at any time, but their numbers build up from March onwards. Loopers stand up on the stems pretending to be other stems. Others fold and stick leaves together and shelter there during the day. Some rely on a green background to avoid detection. Others build a large web around the base of Leptospermum, Melaleuca and Callistemon. All eat a lot of leaves. Watch your seedlings for signs as well as the insects themselves. Signs include holes in leaves and top leaves rolled up or joined together. Bare stems and skeletonised leaves are extreme symptoms. Check daily and remove by hand. In severe cases, use garlic spray.

· **Cockroaches** are sometimes attracted to the humid conditions in boxes of seedlings, especially if the boxes rest on an undrained surface. Dirt in the bottom of the boxes encourages them. They won't hurt the seedlings, but are unwelcome for other reasons. Good box hygiene will discourage them.

· **Cutworms** are brownish grubs that live in the soil and gnaw off seedlings just above ground level, toppling them as if by a miniature forestry worker at night. Look for them by torchlight—they are about 2–3 cm long and brownish in colour. You can sometimes see that the soil mix is tunnelled into, and you can dig down and find the grub. Cutworms affect the more established seedlings, so do not confuse them with "damping off", which affects younger, newly germinated seedlings. Check at night with a torch and collect them – you may see their tunnels into the potting mix. Submerging the tubes in water will cause the cutworm to come out to breathe, at which time you can remove it by hand.

· **Crusader** bugs suck sap from the tops of seedlings, and the top of the plant dies. The remains of the plant usually recover and grow bushy.

· **Grasshoppers** are hard to control due to their mobility. Raised benches and vigilance are necessary.

· **Aphids** are small sap-sucking insects that cluster around new shoots. Wash off with the hose or use garlic spray.

· **Weevils** are small beetles that feed at night, often chewing semicircular notches in the edges of leaves. They are particularly fond of Goodenia species. Seedlings that are water-stressed are more likely to attract weevils. Inspect your seedlings regularly, especially in dry conditions, and remove any weevils you find by hand. Garlic spray may help deter them.

· **Birds** may nip off or pull up seedlings. Cover your boxes with firm netting or wire that does not tangle the birds' wings or feet.

· **Possums** love the juicy leaves of seedlings. If you have possums in your area, you will need to cover your seedlings with wire mesh—ensure it is sturdy, as they can be very persistent.

· **Mice** – Lomandra seed is a favourite menu item for mice. If you are growing Lomandra for your order, you will need fine mesh wire to cover the box until all your seeds have germinated. The wire gauge needs to be small enough to stop hungry mice.

· **Cats** will often choose a warm box of seedlings to lie in and sun themselves. Wire mesh or netting may help, or skewers stuck into the tubes (making sure you do not disturb any roots).

Diseases After Germination

If any of your seedlings are wilting, look weak at the base, are falling over or going rotten, it could be due to 'collar rot' or 'damping off'. They have similar symptoms but are due to different factors. It is important that you attend to this without delay; otherwise, you may lose everything. These problems usually occur when the seedlings are very small.

Collar rot occurs when the stems rot at the point of contact with the potting mix. This occurs when your tubes remain wet on the surface overnight. To avoid this, you must water early in the day so the surface mix has a chance to dry out and the seedling stems remain dry. Collar rot will most likely affect most or all of your seedlings. If seedlings are affected, separate them from healthy plants and destroy them – they will not survive. Ensure healthy seedlings are in a sunny and well-ventilated area.

Damping off is due to harmful pathogens in the soil. If there is any sign of the seedling wilting and going rotten, put up a photo on WhatsApp or ask your coordinator for advice. Separate unhealthy seedlings immediately, as the fungus can spread quickly. Damping off is easily avoided if the hygiene guidelines are adequately followed.

Diseases in Established Seedlings

Powdery Mildew is a common problem, particularly for Eucalypts. It will appear as a whitish or purple powdery substance on the leaves and stems, or brown spots on the leaves. It is generally a cooler-month problem, caused by too much moisture on the plant, particularly overnight.

- What causes it? Watering your seedlings at night, when the temperature is not warm enough for the moisture to evaporate. It also occurs if the seedlings are in too much shade, or if they have not been thinned, preventing air circulation around the individual seedlings.
- How do I prevent it? Keep foliage dry in cool weather at night; ensure your seedlings are in full sun, and make sure you thin out your seedlings to prevent overcrowding.

Powdery Mildew examples

Nobody can be spared

Emphasising the importance of inclusivity and collective responsibility for a sustainable planet. Everyone has a role to play, and we can all make a difference. Uniting for a greener future.

Prepare your kits for drop off as per the following points:

- **Remove any weeds.**
- **Make sure there is only one seedling per box(except for grasses and sedges, which grow in clumps).**
- **Trim (with disinfected scissors) any external roots from the bottom of the tubes; this means taking out each tube and trimming.**
- **Remove any litter and pests from the seedlings. Remember to check the boxes and under the tubes.**
- **Shift any smaller seedlings to the outside of the box to give them a bit more sun.**
- **Check that your seedling labels can be clearly read, are secure and visible.**

Underdeveloped roots

Well developed roots