

# Every Child a Seed: Native Seeds



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# Definition of Native Species

- A native species is one that has occurred naturally in a place over a long time, and was not introduced from other places.
- Non-native or alien species refer to animals, plants and microorganisms that are exotic and non-indigenous with respect to a particular ecosystem.
- These alien species are either introduced unintentionally or intentionally. An unintentional introduction means that the species enters the ecosystem by accident while an intentional introduction is a deliberate introduction of it by humans.

- Some non-native species are invasive. This means they can adapt well in a new environment that they are introduced to, establish and spread.
- This may have a negative impact on local biodiversity as they threaten the livelihood of native plants and animals by predating or competing with the native species, upsetting the ecosystem's balance.
- Also, non-native species are costly to manage and could endanger human health if they carry foreign pests and diseases, and spread them to local biodiversity.
- There is also a risk that they might cross breed with native species and produce negative genetic impact.
- While some non-native species may be dangerous for our local biodiversity, there are also some that are completely harmless.

# Importance of Native Species

- Native plants and animals play an important role in our ecosystem and natural heritage. They:
  - are a source of food and habitat for wildlife including important pollinators such as bees and butterflies
  - have been used culturally for traditional and commercial purposes for food, medicine and timber
- Native plants also bring a host of benefits to any garden, including serving as:
  - a sustainable beginner planting palette as they require less fertiliser and pesticides, and are generally low maintenance
  - excellent perimeter plants that add vibrancy and colour to your garden

# Native Plant Conservation

- Singapore is home to more than 2,000 native plant species. Many of them are endangered in the wild. At the National Parks Board (NParks), we collect and propagate native species in the nursery before planting them out at suitable sites in Singapore. This helps to ensure the survival of important vulnerable native plant species.
- One such species is the Crepe Ginger (*Cheilocostus speciosus*).
- By germinating these seeds, you can help us in our collective effort to grow more native plants and contribute to our City in Nature!

# Crepe Ginger (*Cheilocostus speciosus*): Species info



Scientific name: *Cheilocostus speciosus*

Common name: Crepe Ginger, Spiral Ginger, Wild Ginger

The Crepe Ginger is a free flowering native herb that can grow up to 3 m in height. This species produces white tissue paper-like showy flowers which attract bees, butterflies and sunbirds. You can easily spot them growing in our parks and gardens. Take a closer look at the seeds and you'll find they are actually squarish in shape instead of round!



Photo: Cherish Yong



Scan or visit <https://go.gov.sg/crepe-ginger> for more info

# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (planting)

Each student will need the following:

- Plastic pot (with holes on the base)
- Pot tray
- Watering can or a cup filled with water
- Gloves
- Plant label\*
- Trowel
- Potting mix
- Seeds
- Newspapers

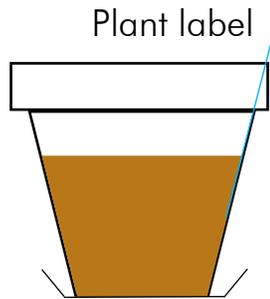
\* Example of plant label (to include details such as common name, scientific name, date sown and number of seeds sown):

This section to be inserted into potting soil

Common name, *Scientific name*  
DD/MM/YYYY, No. of seeds sown

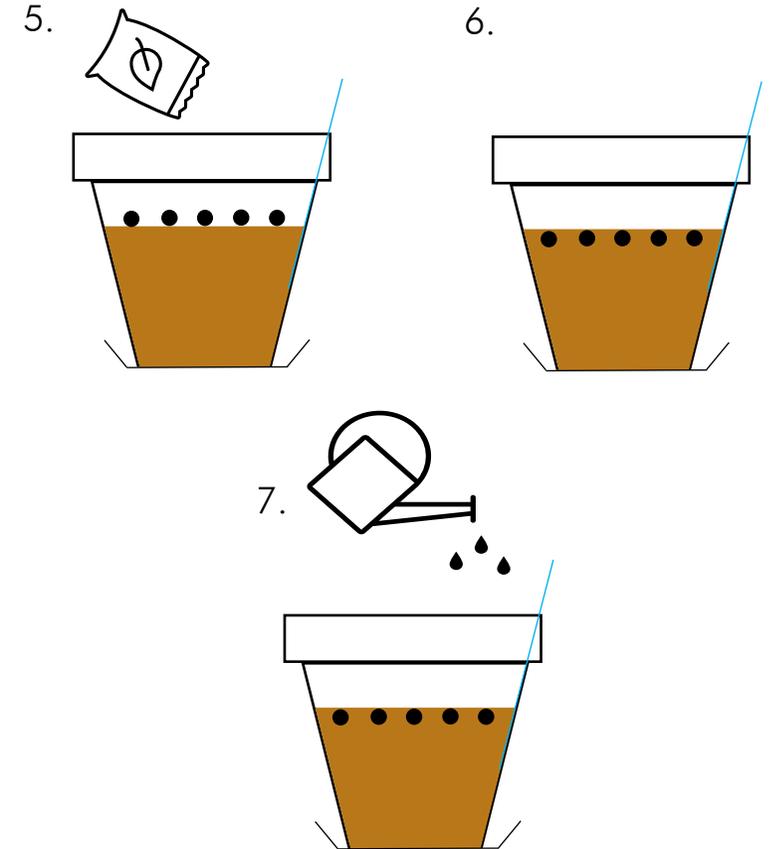
# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (planting)

1. Wash your hands before planting your seeds.
2. Clear the surface of your table and lay old newspapers on it.
3. Prepare the plant label. Put on gloves and place the pot on the pot tray.
4. Use the trowel to scoop the potting mix into the pot. Fill the pot until it is a little over half full. Insert the plant label at the side of the pot.



# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (planting)

5. Spread the seeds evenly on top of the potting mix.
6. Sprinkle a thin layer of potting mix (~0.5-1 cm) on top of the seeds to cover them.
7. Water the seeds until water can be seen flowing out of the base of the pot. If the seeds become uncovered in the process, gently press them into the potting mix and cover them.
8. Empty the excess water in the pot tray regularly to prevent mosquitoes from breeding.
9. Leave the pot in a semi-shaded environment and water 2-3 times a week, or when the potting mix feels dry or turns light brown.



# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (planting)

10. Regularly check for signs of germination. Seeds will be ready for transplanting when two pairs of true leaves are produced.

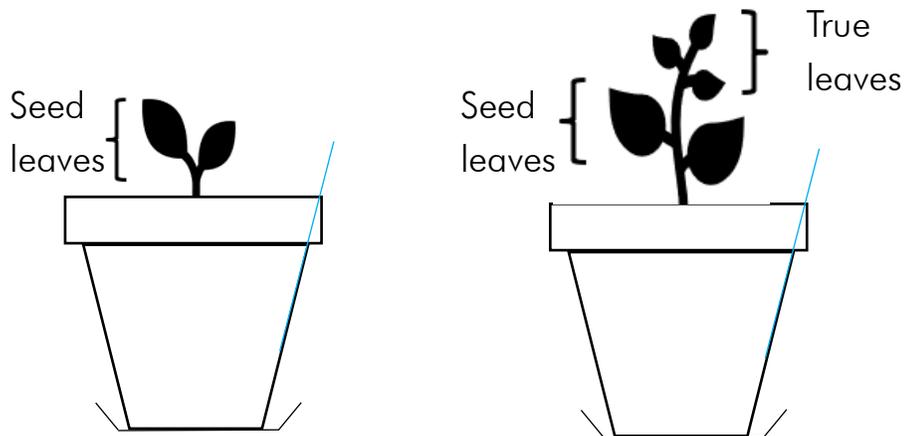
You can also view the planting process here: <https://youtu.be/6x0IZfoz9yo>

# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (planting)

## Seed leaves vs True leaves

When the seed germinates, the two leaves that emerge first are seed leaves. Seed leaves are actually part of the seed or embryo of the plant (hence their name). Their function is to store food for the seedling until the true leaves are established enough to perform photosynthesis. At this point, the plant can sustain itself and the seed leaves are no longer needed. They eventually fall off.

Seed leaves are generally smooth and rounded or narrow. There will only be one set of seed leaves. True leaves emerge later, and are a smaller version of the plant's leaves.



# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (pruning)

Just like humans, your plant will need regular 'haircuts' – otherwise known as pruning! This helps to remove dead or diseased plant parts, keep them in shape, and maintain good airflow through the plant.

To prune your plant:

1. Cut at a 45 degree angle above a new bud.
2. Use clean secateurs/scissors.
3. Aim to make a clean cut to reduce rotting.
4. Clean your cutting tools regularly to prevent disease from spreading, and to keep them sharp. Clean them with turpentine if there is plant sap on them. You can also disinfect them with rubbing alcohol.
5. Apply a few drops of light lubricating oil to the blades and moving parts before storing the tools.

# Crepe Ginger (*Cheilocostus speciosus*): Plant care info (fertilising)

- Fertilisers are used to add nutrients to the soil and keep plants healthy.
- Please read the product labels and follow the instructions and recommended application rate.
- Fertiliser mostly contains:

|                     |                       |                        |
|---------------------|-----------------------|------------------------|
| <b>Nitrogen (N)</b> | <b>Phosphorus (P)</b> | <b>Potassium (K)</b>   |
| For leaf growth     | For roots and flowers | For disease resistance |

Types of fertiliser available:

| Organic fertilisers  | Chemical fertilisers  |
|--|---|
| <ul style="list-style-type: none"><li>• Processed animal manure from chickens, goats, cows etc</li><li>• Fish emulsion</li><li>• Seaweed</li></ul> | <ul style="list-style-type: none"><li>• Brightly coloured pellets with different nutrients and formulas</li></ul> |

# Common Native Trees and Plants

- Besides the Crepe Ginger (*Cheilocostus speciosus*), there are many other native trees and plants in our City in Nature.
- Some common ones are the Angsana (*Pterocarpus indicus*), Sea Almond (*Terminalia catappa*), Malayan Ixora (*Ixora congesta*) and Singapore Rhododendron (*Melastoma malabathricum*), to name a few.



Angsana (*Pterocarpus indicus*)



Sea Almond (*Terminalia catappa*)



Malayan Ixora (*Ixora congesta*)



Singapore Rhododendron  
(*Melastoma malabathricum*)

# Seed Banking

- Other than the traditional propagation methods, seed banking is another way of conserving the native plant species of Singapore.
- At the Singapore Botanic Gardens Seed Bank, collected seeds are cleaned and dried before being put in aluminum foil bags and stored in a freezer at -20 °C. This enables us to have additional stock if anything were to threaten the existing population in the wild.
- For more information about the Seed Bank, visit <https://go.gov.sg/seedbank>

# NParks Species Recovery Programme

- The Species Recovery Programme was introduced in 2015 as part of the National Parks Board's (NParks) Nature Conservation Masterplan
- The programme aims to increase the number of flora and fauna species through efforts such as reintroducing and propagating them at their original habitats, as well as at suitable new habitats.
- From 2016 to 2021, NParks increased the number of flora and fauna species via recovery efforts under the programme, from 46 to 120 species.

# NParks Species Recovery Programme

- The *Ormocarpum cochinchinense*, a small native coastal shrub previously thought to be extinct in Singapore, has been propagated and planted at many of our parks and nature reserves. Similarly, the Sunda Slow Loris (*Nycticebus coucang*), which was previously classified as “Critically Endangered”, is now “Endangered” in Singapore.
- NParks will continue to step up its species recovery efforts to strengthen the conservation of Singapore’s native biodiversity. By 2030, NParks aims to increase its recovery efforts to 160 flora and fauna species.

# Supplementary Resources

## Videos

- How To Identify Plant Nutrient Deficiency  
<https://youtu.be/dSfJVuVNB0c>
- Watering Your Plants  
<https://youtu.be/yPDeTs1NdAU>
- Preparing Growing Media  
<https://youtu.be/lysgk9jh-mU>
- Propagating Plants  
<https://youtu.be/mgL8tkeuSvg>
- Vegetative Propagation: Making Cuttings and Divisions  
<https://youtu.be/zrdFHTRfU8c>
- Managing Pests and Diseases:  
<https://youtu.be/RYmtv8d5KRA>
- Mixing Soil for Growing Edible Plants (Part 1: Soil Basics)  
<https://youtu.be/YvcBYqCuzwc>
- Mixing Soil for Growing Edible Plants (Part 2: Soil Amendments)  
<https://youtu.be/ZOMLfqymu5Q>

## Write-up

- Fertilising  
<https://www.nparks.gov.sg/gardening/gardening-resources/caring-for-plants/fertilising>
- Plant Pests  
<https://go.gov.sg/plant-pests>

## Brochures

- Know 10 Common Pests of Edible Plants  
<https://go.gov.sg/common-pests-edible-plants>
- Know 10 Common Diseases of Edible Plants  
<https://go.gov.sg/common-diseases-edible-plants>



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