



Pacific Regeneration Technologies Inc.

THAWING AND PLANTING GUIDELINES FOR CONIFER TREE SEEDLINGS

THAWING

When frozen seedlings are being thawed they are vulnerable to external conditions exerted upon them. During this process they are not in their natural environment and improper care of the seedlings can drastically affect their survival and performance in the field. It is essential that the seedlings be protected from stresses caused by temperature extremes, moisture loss, and physical damage to ensure reforestation success.

If the seedlings are thawed outside, they must be thawed in as much shade as possible, such as on the north side of a building, under heavy reflective tarp, or under evergreen trees. **NEVER** thaw cartons directly in the sun as the cartons pick up heat very quickly and the seedlings undergo extreme stress.

Ensure all the cartons are well spaced and inspected for temperature and degree of thaw, two to three times daily. Thawing of seedlings is best done with the **cartons closed** to maintain humidity around the thawing seedlings, and to reduce the stress on them.

In warm temperatures, seedlings become physiologically active and are under extreme stress if held in closed cartons. The growth process cannot be reversed with cool temperatures; it can only be slowed down.

However, **if the temperature inside the carton rises above 10° C** the cartons should be opened. If this occurs the seedlings should be thoroughly examined for disease and heat damage. If they are acceptable they should be shipped to the field and planted immediately.

Larch species must be planted immediately upon thaw, as they will flush in the boxes very quickly.

Completely thawed stock should be kept at +1 to +2° C to conserve carbohydrate reserves in the plants.

HANDLING THAWED SEEDLINGS

Once seedlings have been thawed, dormancy is broken and they become increasingly physiologically active. **Their vigor is reduced** if they are left in cold, dark storage. If planting is not possible the following must occur at the field or any other location they have been shipped:

1. Immediately upon arrival, the cartons and liners must be opened and folded back and placed in continuous shade. This is essential to reduce the temperature stress on the seedlings.
2. All seedlings must be watered thoroughly immediately and not be permitted to dry out before being planted. Excess water should be drained from the cartons.

PLANTING

- Avoid exposing seedlings to severe temperature fluctuations before loading the trees into planting bags.
- Do not leave root plugs exposed to air. For extended periods, adding absorbent material in the bags will help keep the plugs moist (i.e. moist paper towel, or newspaper).
- Planting holes should be deep enough to accommodate the entire plug. Top of soil plug should be even with surrounding soil level.
- Avoid bending the plug.
- Tamp the soil lightly around the planted plug without applying too much pressure.
- If available, tree planting shovels make the job much easier!
- Based on MOF Thawing and Planting Guidelines.