

Inventory

The inventory should be carried out in three steps:

1. Cartographic analysis of the area to be inventoried and a first field visit to verify the targeted stands of trees.
2. Collection and recording of site data and yield tests within pre-selected stands.
3. An analysis of results and recommendations.



1. Procedures for cartographic analysis and determining the stands to be inventoried

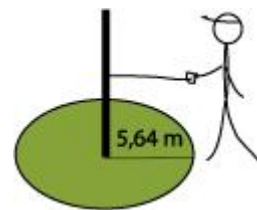
- 1.1 Locate potential stands of trees within the area to be inventoried using forest vegetation maps or the most recent ortho-photos (aerial) based on desired site characteristics:
 - On crown lands: young conifer stands that are at least 3 m tall (height class 5 on vegetation maps), pure or mixed with other species in locations that have been regenerated after logging, and sites that have undergone pre-commercial thinning.
 - On private forests: sites with available residue from pruning.
- 1.2 Measure the total area of each of the potential stands.
- 1.3 Select at least 20% of the potential stands. The selected stands must be positioned so that they cover the overall territory being studied and should ideally be located near road access points.
- 1.4 Determine the number of inventory plots to be established based on the total area of the stands, which is ideally one plot per five hectares.
- 1.5 Prepare the maps showing the stands to be visited. Print two copies, preferably on water-proof paper. The maps must have compass points, the scale (1:2500 to 1:3500), road access points, etc.
- 1.6 Visit and verify each stand or ecological type previously selected. Plan the establishment of the plots within approximately 1 km of the access point.
- 1.7 If the stands do not seem to correspond to what was targeted, increase the inventory to other unvisited sectors in order to ensure that 20% of the territory is inventoried.

Conifer Branches (Balsam Fir & Black Spruce) for the production of essential oils

2 Procedures for collecting & recording site data and yield tests within productive stands

2.1 Determine the exact location of the inventory plots within the sites with the help of cartographic information or GPS coordinates. Implement the inventory plots as presented in the following diagram.

To establish a plot, use a 5.64 m plot cord to demarcate a circle of 100 m² (0.01 ha) in area. Mark the outline of the circle with forestry paint.



2.2 Record the information related to the plot in the "Recording Site Data" form including:

- General information (date, municipality, GPS coordinates).
- General physical characteristics of the site (soil type, slope, drainage, etc.).
- Record the type of silvicultural operations (*e.g.*, pruning, pre-commercial thinning) and the average height of conifers being cleared/thinned.

2.3 Harvest the branches within the plot (see "Harvesting Conditions"). Weigh and record the data on the form.

Conifer Branches (Balsam Fir & Black Spruce) for the production of essential oils

Harvesting Conditions

- Harvesting of branches for essential oil production typically involves using the waste material left on the ground from previous silvicultural operations.
- Collect all of the healthy branches and the entire top of the tree (trunks of 10 cm or less) if the harvest is intended for manufacturing industrial oil. If not, collect only the branches, not the trunk, to enable the production of higher quality oil.



3. Procedures for analyzing results

- 3.1 Create a specific folder on the computer and record the data from the forms.
- 3.2 Transfer the GPS coordinates to the appropriate computer software and save a copy in a specific folder.
- 3.3 Mark off a polygon within each inventoried stand located in a zone 1 km from each side of the road. Measure the area of these polygons precisely.
- 3.4 Calculate the average quantity of harvested conifer branches (kg) for each of these polygons and do an extrapolation per hectare for each of the potential stands selected in step 1.3.

List of Materials

- ✓ Aerial maps and photos of the area
- ✓ Forms (waterproof recommended)
- ✓ Cord (5.64 m in length) attached to a stake
- ✓ Large, strong bag for weighing branches
- ✓ Shears, machete or hatchet
- ✓ Field weigh scale
- ✓ GPS
- ✓ Camera
- ✓ Pencils and felt-tip pen
- ✓ Flagging tape and forestry paint
- ✓ Emergency kit



Recording Site Data
Conifer Branches (Balsam Fir and Black Spruce)
Evaluation of harvest potential

General Information

Project title:
Date:
Municipality:
Sector:
Evaluators:
GPS coordinates:
Photo numbers:

Physical Description
Plot Sample 5.64 m Radius

Plot number:
Conifer species collected:
Soil Type:
Drainage:
Slope:
Type of stand:
Type of silvicultural work, year:
Average height of conifers:
Quantity of branches harvested:

Comments: