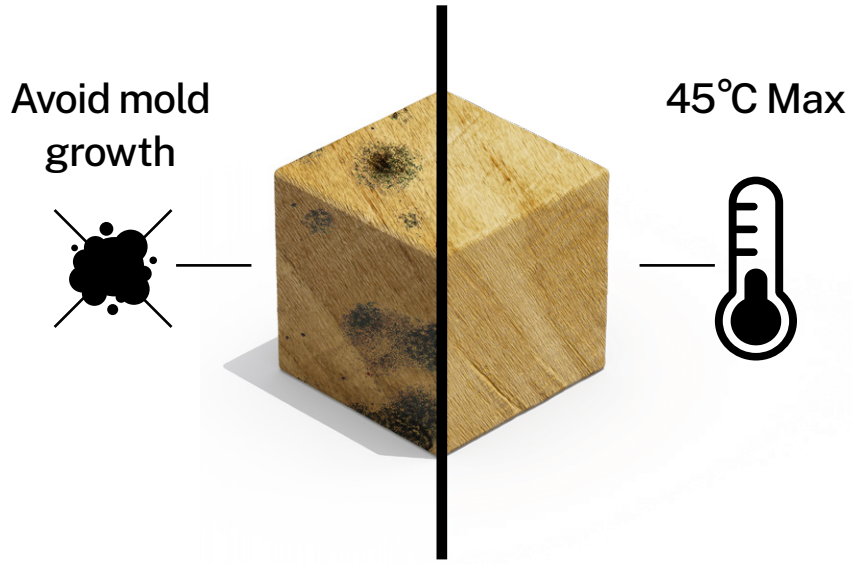
WORLD FOREST ID

Drying guide for wood

ENGLISH – AUGUST 2025



IMPORTANT: Samples must be dried as soon as possible after collection to prevent mold. Mold permanently alters the chemical makeup of samples and may make them unusable. If using heat, do not exceed 45°C.

Contents

Basic drying protocols for wood

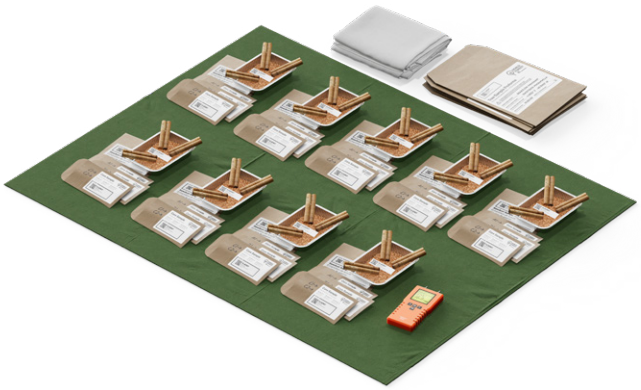
1. Dry samples as soon as possible after collection to prevent mold.
2. Ensure samples do not get mixed up during the drying process.
3. Avoid contamination of samples during the drying process.
4. Do not use chemicals to prevent mold.
5. Package all samples with silica if possible.
6. Silica beads must not come into direct contact with samples.
7. Do not use silica beads that are blue or that contain cobalt.
8. Set ovens or drying equipment at 45°C.
9. Ensure sample temperature does not exceed 45°C.
10. Do not use a microwave for drying samples.
11. If samples exhibit cracking, slow the drying process.
12. Samples must have moisture content below 16% before dispatch.

Tools/equipment for drying

1. Moisture meter
2. Infrared gun or oven thermometer (ensure drying stays below 45°C)
3. Aluminum or plastic trays for grouping samples by tree
4. Silica sachets or loose beads with reusable teabags (if used)
5. Plastic ground sheet to avoid ground contamination
6. Muslin sheet to keep off insects and dust
7. Lightweight rain cover (for weather protection)
8. Blotting paper or newspaper for pressing verification samples
9. Clean boards and straps, belt or flat weight (for pressing verification samples)
10. Compact collapsible shovel and lighter (for controlled ember drying)
11. Pencil or waterproof pen (for labelling)
12. Dehydrator, oven, or dehumidifier (if available at base)

Drying overview and options

Consult your expedition plan for which drying techniques to use.



DRYING IN THE FIELD

Air drying

Silica sachets

Controlled ember drying

Pressing (leaves only)

DRYING AT BASE

Air drying

Dehydrator

Dehumidifier

Oven drying

Pressing (leaves only)

Silica beads

DRY TO BELOW 16% MOISTURE BEFORE DISPATCH

DISPATCH

Silica beads

Measuring moisture levels

MOISTURE METER
This is the most accurate way to measure moisture. Insert the pins directly into the wood sample, take three readings at the end closest to the bark, and calculate the average.

NOTE: *Readings should always be taken at the bark end of each core, where moisture is highest.*

MOISTURE LEVEL MUST BE BELOW 16% BEFORE DISPATCH

Keeping samples organized

Use clean containers to keep samples from the same tree together and clearly labeled with the correct QR code.

Keep packaging grouped and close to each sample set from a single tree.

Keep cores separated in each corner, with the bark side facing up to aid drying.

NOTE: *Both sawdust and core samples from the same tree can be placed together during the drying process. If air drying verification samples, keep them inside their labeled paper envelope*

Preventing mold with silica [i]

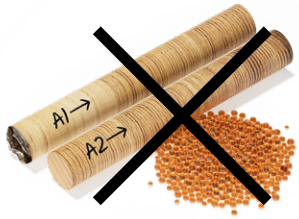
Silica sachets and beads (silicon dioxide) absorb moisture effectively and help prevent mold

SEALED SILICA SACHETS

Best used in the field, these can be added where required into sample envelopes

LOOSE SILICA BEADS

Best used at base or dispatch. The sample must always be separated from the silica using a permeable layer



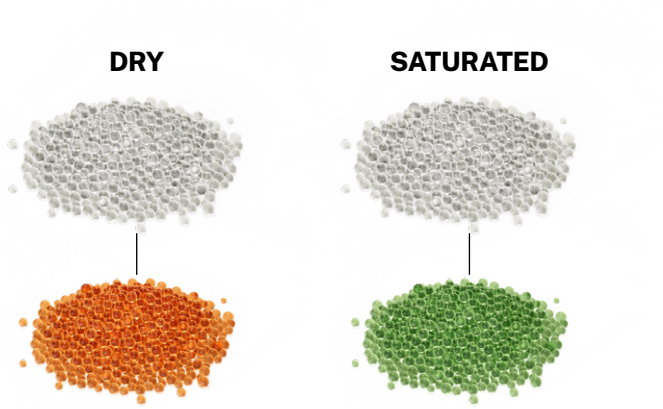
SILICA BEADS MUST NOT COME INTO DIRECT CONTACT WITH SAMPLES

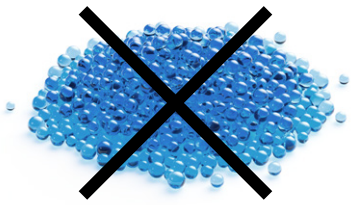
Preventing mold with silica [ii]

Indicator beads show moisture levels so you know when to replace saturated silica or dry it for reuse.

WHITE (Non indicating)

ORANGE (Non-cobalt indicator)





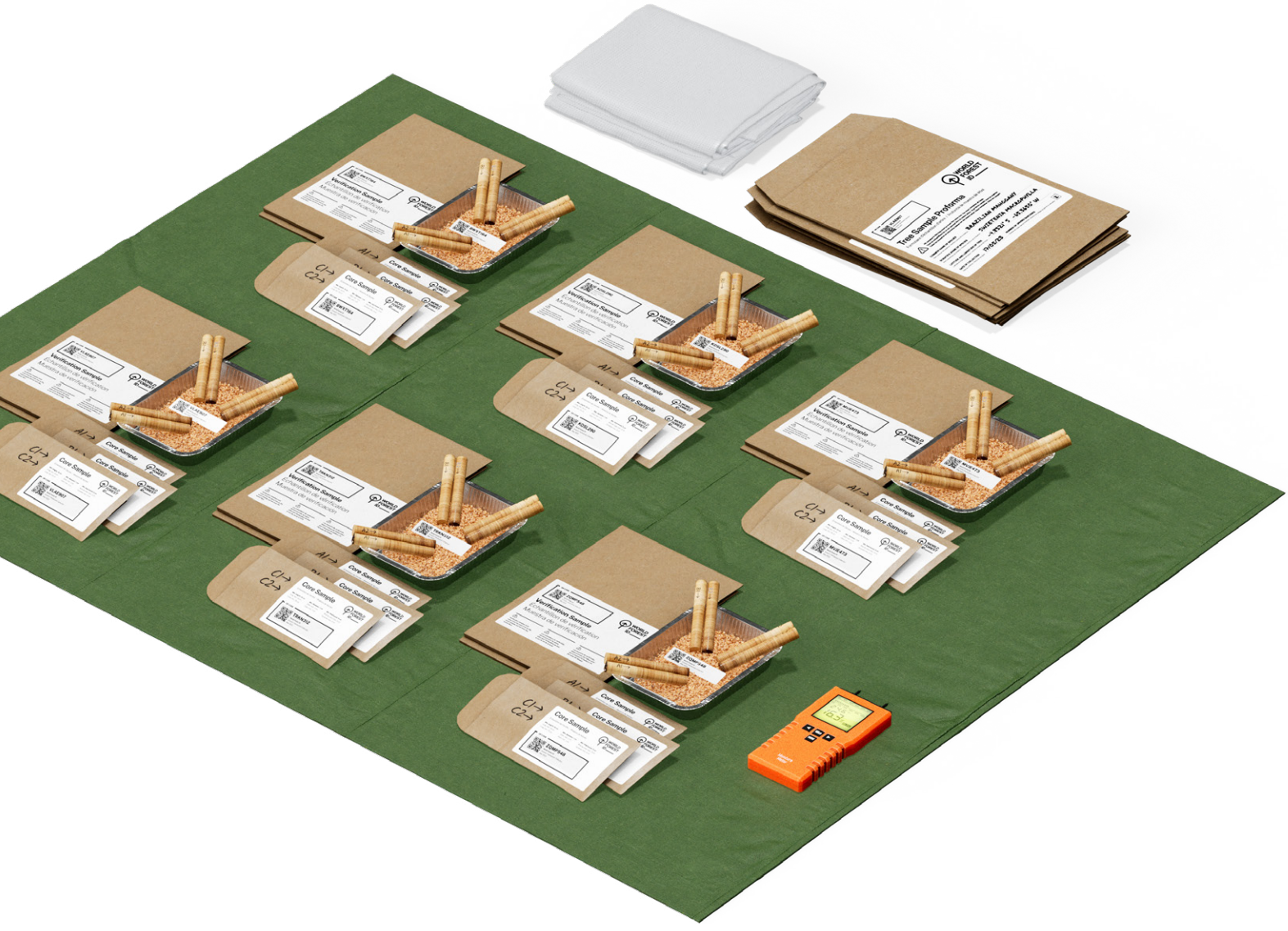
DO NOT USE SILICA BEADS THAT ARE BLUE OR THAT CONTAIN COBALT

DRYING SATURATED SILICA BEADS

1. Heat oven to 100°C. Place the used silica beads evenly on a clean baking sheet.
2. Dry for 1-2 hours or until bead color indicates that they are dry.
3. Store dried silica beads in an airtight container until next use.

Air/sun drying

1. Use a clean, flat surface or a clean sheet.
2. Keep samples from the same tree together in containers, with packaging grouped together and QR codes visible.
3. Space cores apart, bark-side up, and loosen sawdust to aid drying.
4. Do not leave unattended & turn cores occasionally to aid drying.
5. Cover with muslin or plastic to protect from dust or rain if needed.
6. Once dry, return to original packaging and check QR codes match.



Controlled ember drying

1. Find a location away from vegetation/combustible materials.

2. Dig a shallow trench about 10 cm deep and line it with stones.

3. Build a small fire using small twigs and gradually add larger branches.

4. Allow the fire to die down to embers.

5. Place branches across the fire to act as supports.

6. Position the aluminum trays across the supports.

7. Monitor the temperature until it falls below 45°C.

8. Arrange the samples in the trays complete with their the QR code.

9. Monitor the temperature closely to ensure it does not exceed 45°C.

10. Ensure samples are repackaged correctly and all QR codes match.

Dehydrator and oven drying

DEHYDRATOR DRYING:
This is the most effective method of drying. Set temp at a maximum of 45°C. Rotate the samples periodically to ensure even dehydration.

OVEN DRYING:
Set temp at a maximum of 45°C. Rotate the samples periodically to ensure even dehydration and keep oven door slightly open or open it periodically to facilitate moisture escape.

SAMPLE TEMPERATURE MUST NOT EXCEED 45°C

To check temperature use an additional oven thermometer or infrared thermometer gun.

Using a dehumidifier

1. Use a small enclosed room or storeroom with power.
2. Keep doors and windows shut to help the dehumidifier work efficiently.
3. Place trays near the unit to maximise airflow across the samples.
4. Group samples by tree, with labels and QR codes visible.
5. Turn cores occasionally for even drying.
6. Aim for 30–50% relative humidity.

Drying verification samples

AIR/SUN DRYING
Place the verification sample in its labeled paper envelope. Leave the envelope open in a well-ventilated space. A little curling is not a problem. If needed, samples can be pressed later.

PRESSING (shown below)
In humid environments, pressing helps prevent mold and preserve shape. Place the sample between newspaper, cardboard, and flat boards, secured with a light weight or straps. Replace the paper regularly. Always include a QR code (unique identifier) with each sample to avoid mix-ups.

ALCOHOL PRESERVATION (only if requested)
Use only when species are difficult to identify from dried material. Wrap the sample in newspaper, seal in a plastic bag, and add alcohol. Alcohol must NEVER come into contact with core or sawdust samples. Store alcohol-treated samples completely separately.

Preparing for dispatch

1. Contact collections@worldforestid.org for destination-specific packing and shipping advice.
2. Dry samples to 16% moisture or below before dispatch.
3. In humid environments, fully dried samples can quickly reabsorb moisture, seal them in airtight containers immediately to prevent this.
4. For transit, place all sealed samples in an airtight plastic box with fresh silica gel.

Glossary

CHEMICAL ANALYSIS: Laboratory testing of wood to detect chemical patterns that vary across landscapes. World Forest ID uses two main methods: Stable Isotope Ratio Analysis (SIRA) and Multi Element Analysis (MEA). The data helps train a spatial model used to evaluate whether traded wood products match their declared origin.

DEHUMIDIFIER: A device that reduces humidity in an enclosed space. Used to dry samples slowly and safely in base conditions. Works best in sealed rooms with monitored airflow.

DEHYDRATOR: An electric drying device that uses gentle airflow and heat. May be used at base but must be set below 45°C to avoid damaging samples.

EXPEDITION PLAN: A document specific to each expedition, outlining what species to collect, how far apart sample locations should be, which sample types to include, and any variations from standard protocol.

MOISTURE CONTENT: The percentage of water in a wood sample. Must be reduced to 16% or below before dispatch. Measured using a handheld moisture meter at the bark end of the core.

SILICA GEL: A desiccant used to prevent mold by absorbing moisture from the sample envelope. Only use silica gel that has been pre-dried and sealed. Loose silica must be placed in a breathable sachet and must not touch the sample directly. Do not use blue silica beads, as they may contain toxic cobalt chloride.

UNIQUE ID (QR CODE): The identifier assigned to each sampled tree. All samples from a single tree must share the same QR code. Each sample must be labeled clearly using the correct matching ID.

VERIFICATION SAMPLES: Leaves, fruit, nuts, or flowers collected from the same tree as the core sample. These help confirm the species identity and may be used for DNA analysis.

Our PDF guides

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Collection guide for wood

Drying guide for wood

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Collection guide for soy

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Collection guide for cocoa

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