Global Timber Tracking Network - The timber tracking tool infogram: Overview of wood identification methods' capacity

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Overview of wood identification methods' capacity

April 2019

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Front cover:
NIRS Wood ID Project, T.C.M. Pastore

* Names are listed in alphabetical order.

Find out more at


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www.globaltimbertrackingnetwork.org

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LEGEND: Methods generally suitable | Methods conditionally suitable

1 anatomy | 2 DNA | 3 isotopes | 4 DART | 5 NIR | 6 MV

Authentication question

Taxonomic identity of a specimen

Species level	Genus level
1 2 4 5 6	1 2 4 5 6

Geographic origin of a specimen

Country or region	Forest concession		Individual tree
	Natural forest	Planted forest	
1 2 3 4 5 6	2 3 4 5	2* 3 5*	2*

Analysis requirements

On site identification		Time-frame for identification			Resolution of geographic origin		Cost per specimen		
Yes	No	1 m-1 h	1 d-1 w	4-6 w	Less than 1 km	More than 1 km	1-100 €	100-200 €	200-600 €
1 5 6	2 3 4	1 5 6	1 3 4 5	2 3	2 3	1 2 3 4 5 6	1 5 6	1 3 4 5	1 2 3

Test ⓘ specimen characteristics

Type of test specimen

Solid wood			Pulp, paper, fibreboard
Veneer, plywood	Charcoal	Manufactured or raw wood	
1 2 3 4	1 5	Heartwood	1

Heartwood:

With resins or treated chemically	Without resins and untreated	Treatment unknown
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

Minimal test specimen size

Smaller than 1 cm³	Bigger than 1 cm³	
		Sap- or heartwood
1 3 4 5 6	1 2 5 6	1 2 3 4 5 6

Sapwood: 1 2 3

Extended legend

The different wood identification methods:

1. Wood anatomy
2. Genetics
3. Stable isotopes
4. Direct Analysis in Real Time Time-of-Flight Mass Spectrometry (DART TOFMS)
5. Near-InfraRed Spectroscopy (NIRS)
6. Machine Vision (MV)

* If reference specimens were collected from an individual tree or from a specific plantation, wood coming from that tree/plantation could be identified as such at the end of the supply chain. However, if no reference specimens were taken from the plantation, the DNA or NIRS profile will identify the geographic origin of the seed material used for that plantation and not the actual geographic position of the plantation.

Squares of the same colour should be interpreted together. For example, method 2 has a resolution of less than 1 km only in the case of an individual tree.

ⓘ Test specimens have to be distinguished from reference specimens, for which there are different requirements. See the GTTN sampling guide for information on reference specimen requirements.

For conditionally suitable methods, contact an expert to discuss the specific case.

Where to find an expert?

The infogram shows the current wood identification capacities of the different timber tracking tools. If you have identified one or more suitable methods for your identification request, you can send an inquiry to the experts. **Contact data of the timber tracking experts** can be found via the Find a Partner button on the GTTN website.

Growing possibilities

Apart from the methodological capacities, whether a timber specimen can be traced back to its species/genus or its geographic origin also depends on the **availability of reference data**. Reference databases are continuously growing as is the **science behind the methods**. With time, the capacities of the different wood identification methods will only increase.

GTTN

Global Timber Tracking Network

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www.globaltimbertrackingnetwork.org

The objective of the Global Timber Tracking Network (GTTN) is to promote the operationalization of innovative tools for wood identification and origin determination, to assist the fight against illegal logging and related trade around the globe. GTTN is an open alliance that cooperates along a joint vision and the network activities are financed through an open multi-donor approach. GTTN phase 2 coordination (2017-2019) is financed by the German Federal Ministry of Food and Agriculture (BMEL).