



An Overview of FSC's Fiber Testing Pilot

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Objectives of Fiber Testing

- Use fiber testing to deter fraud as a quality control and quality assurance measure.
- Determine capacity of fiber testing (both traditional wood anatomy and DNA/Isotope future capacity) to provide additional quality control and quality assurance (potentially in FSC COC in the future).
- Understand the types of results of different fiber testing techniques.
- Determine how fiber testing can be integrated into COC.
- Develop procedures to investigate questionable results and appropriately respond to those results.



Credibility & Integrity are critical to the FSC brand

High level of integrity in FSC supply chain



Retailers and companies gain confidence in FSC certification



Increased benefit in the FSC logo and FSC certification



Companies join the FSC certification program



FSC Mission achieved



CBs & CHs business



FSC & US Forest Service Forest Products Lab

- Evaluating the feasibility of fiber testing as a quality control measure.
- Implementing a global testing program with a focus on high-risk products.
- Investigating the feasibility of including fiber testing techniques as part of the chain-of-custody system. (traditional, DNA and isotopic techniques)



Verifying FSC claims

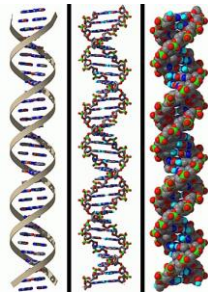
- Compare the materials in a product to a claim recorded in a document:
 - **Species of the wood component (taxonomy)**
 - **Origin of the wood component (provenance)**
- Different techniques yield different information.

Types of Fiber Testing Claim Verification

- Traditional wood anatomy



- DNA

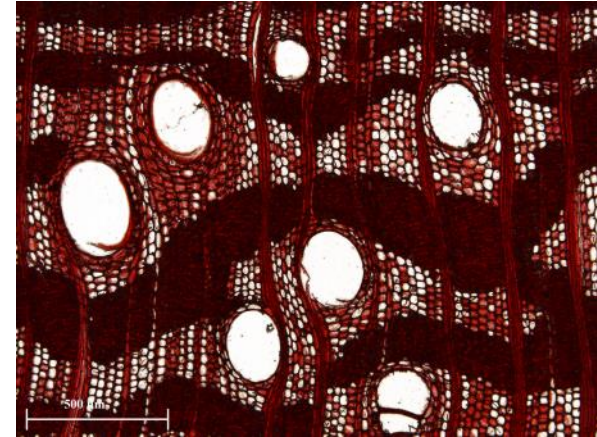


- Stable isotopes



Traditional wood anatomy

- Wood anatomy
 - Not species-specific
 - Not always genus-specific
 - Typically no provenance
- Fiber ID for pulp-based products
 - A reduced case of wood anatomy





DNA

- Assuming there is DNA in fresh wood of a given species:
 - Often still DNA in solid wood products
 - Possibly still DNA in OSB, flakeboard
 - Maybe no extractable DNA in particle board; further analysis being conducted
 - No DNA in paper
 - No DNA in MDF, HDF, etc.
- DNA extraction from fresh-cut, let alone dried and processed, wood can be problematic
 - Small specimens, processed products
- Some species are not going to have usable DNA in the wood



Stable Isotopes

- Isotopes
 - Based on the assumption that if there is identifiable geospatial variability in the stable isotopes at a site, they will be reflected in the wood.
- Limitations
 - Desired geographic specificity influences sampling.
 - Assumes that all species will accumulate isotopes in the same proportions.



Taxonomic identification table

Context	Wood/Product	Anatomy	DNA	Stable Isotopes
Reference database	Heartwood	Yes	Maybe	N/A
	Sapwood	Yes	Yes	N/A
	Non-wood (e.g. leaves)	No	Yes	N/A
Field application	Heartwood	Yes	Maybe	N/A
	Sapwood	Yes	Yes	N/A
	Plywood	Yes	Probably	N/A
	OSB/Flakeboard	Yes	Possibly	N/A
	Particleboard	Yes	Probably	N/A
	Fiberboards	Yes*	No*	N/A
	Paper	Yes*	No*	N/A
	Pulp	Yes*	No*	N/A
	Wood-Plastic Composites	Yes*	No*	N/A

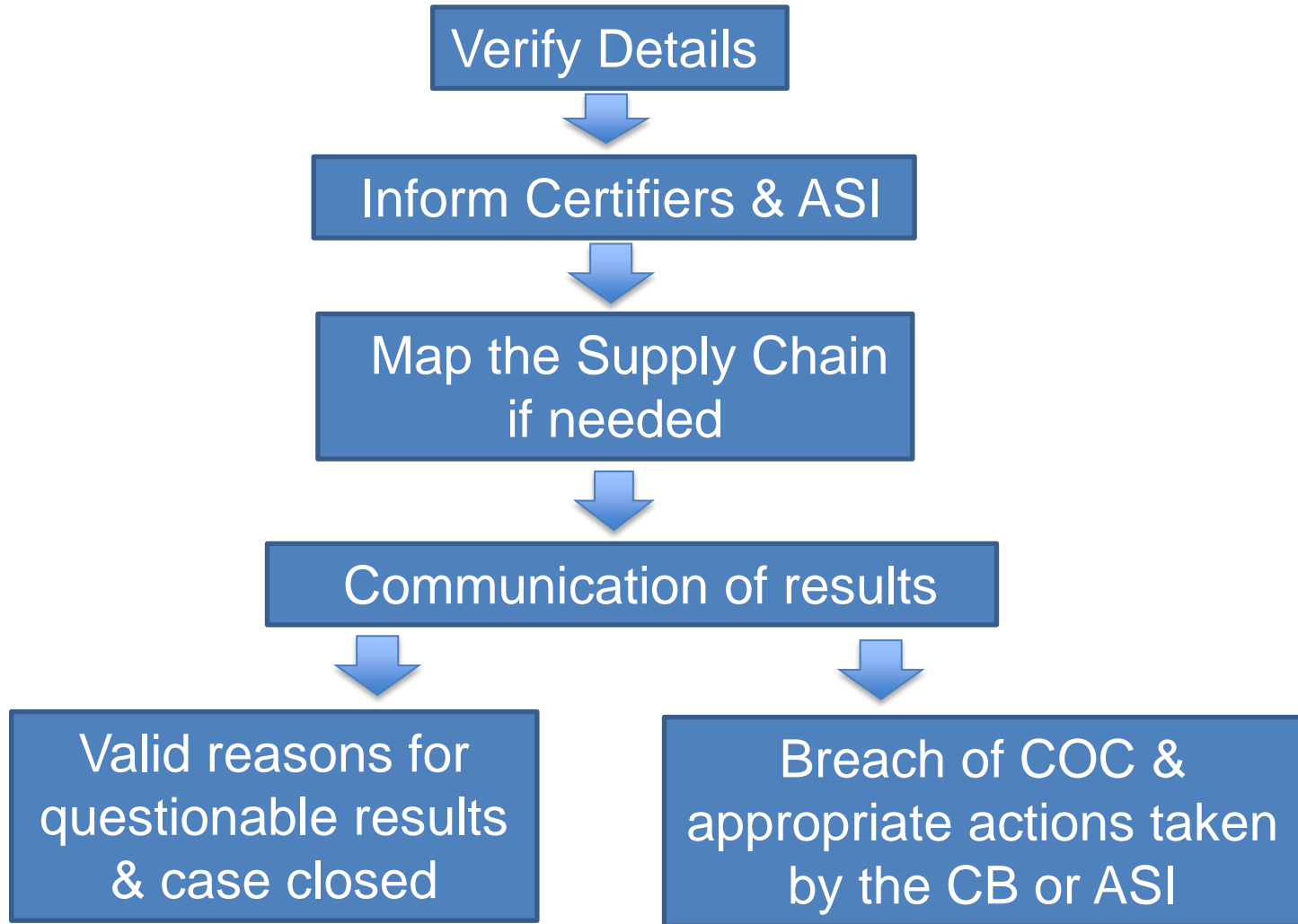


Provenance identification table

Context	Wood/Product	Anatomy	DNA	Stable Isotopes
Reference database	Heartwood	No*	Maybe	Yes
	Sapwood	No*	Yes	Yes
	Non-wood	No*	Yes	No
Field application	Heartwood	No*	Maybe	Yes
	Sapwood	No*	Yes	Yes
	Plywood	No*	Probably	Yes*
	OSB/Flakeboard	No*	Possibly	Yes*
	Particleboard	No*	Probably not	Yes*
	Fiberboards	No*	No*	Maybe
	Paper	No*	No*	Maybe
	Pulp	No*	No*	Maybe
	Wood-Plastic Composites	No*	No*	Maybe



Investigation of questionable test results






FSC Sampling in 2014

- FSC has collected a variety of random solid wood & paper samples and engaged the FSC Network to submit samples.
- FSC has issued a fiber testing program for co-products based on FSC-DIR-40-005-20 “Sourcing of co-products under the EU Timber Regulation.”
- A sampling procedure for obtaining & submitting samples can be found here:

<https://ic.fsc.org/wood-and-fiber-science.182.htm>



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- FSC issued fiber testing program for co-products based on FSC-DIR-40-005-20 “Sourcing of co-products under the EU Timber Regulation.”A small icon of a clipboard with a checklist, tilted slightly to the right, positioned to the right of the second bullet point.
- Goal of 2,000 tests to be conducted in 2014, combination of wood & fiber. Many products contain several samples /components.
- Randomly selected labeled products and submitted by National Offices, Certificate Holders, Certification Bodies & stakeholders.



Outcomes

- Fiber testing found inaccurate FSC claims and can deter fraud as a quality control / quality assurance measure.
- Traditional wood anatomy testing was major focus in 2013 and early 2014, but DNA and Isotope pilots commence in second quarter of 2014.
- The Quality Assurance Unit is working with the Policy and Standards Unit on integrating fiber testing into COC.
- Procedures to investigate and respond to questionable results have been developed in collaboration with ASI and are being tested.
- Provide confidence to FSC stakeholders who already conduct fiber testing as part of their own quality assurances.



Pilot testing of DNA and Isotope techniques

- Explore the utility of using DNA and isotope testing
 - What are the costs?
 - Can the tests provide reliable information on species and provenance?
 - Where are the shortcomings?
 - How would sampling be organized?
 - How can these techniques be integrated into COC
- Organizing pilot tests
 - North American oak species being exported and manufactured in Asia and resold as finished products in North America and Europe.
 - Indonesian species from FSC certified natural forests.



Feedback

- FSC is gathering input from stakeholders to understand challenges and opportunities and encourages certificate holders, certification bodies and other stakeholders to contact us and provide input.
- FSC is also seeking organizations that would like to collaborate on testing and submitting FSC certified products/samples.
- Please contact Emily for feedback or participation information: e.crumley@fsc.org



Further information

Learn more: <https://ic.fsc.org/wood-and-fiber-science.182.htm>

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