

Controlling the declared geographic origin of wood/timber: Efforts to ensure forest sustainability and to support regulations and consumer interests

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Controlling the declared geographic origin of timber and wood is an important topic in view of illegal logging. Globally 20-40% of logging is estimated to be illegal. Often the focus is on the situation of logging in Africa, Southeast Asia and South America, but also in Europe illegal logging is a serious problem in several countries.

The EU and the USA have acted with respect to the situation and passed regulations to ensure control of wood/timber provenance – the FLEGT Action Plan (EU) and the Lacey Act (USA). In the FLEGT Action Plan the importer of non-EU (and EU) timber has to verify its declared origin. Conventionally in the control of geographic origin of food stuff stable isotope analysis is the method of choice and numerous articles have already been published on this topic. For wood/timber origin genetic analyses have rather been applied – however, also a few studies on stable isotope patterns have been carried out and evidenced the potential of this method also for the verification of timber origin.

Both methods have their advantages and disadvantages: stable isotope patterns are dominantly influenced by the environmental conditions of a tree locality. Genetic methods are working using the assumption that trees of the same species in geographically near distance are genetically closer related to each other than trees farther away from each other. Stable isotope patterns are not unique unlike genetic data, however, transfer of seeds or seedlings confuses the genetic methods, which are rather applicable to virgin forests, not plantations.

In this talk the isotope method is explained and examples of its successful application are presented. We show examples of its application: The control of declared geographic origin of African tropical timber, the discrimination between European and Siberian larch wood and differentiation by stable isotope method of Austrian central Alpine from Austrian southern Alpine and northern non-Alpine spruce.