Systematics of *Juniperus thurifera* using DNA fingerprinting and leaf essential oils : Comparison of the Moroccan *J. thurifera* with populations from Spain and France.

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Abstract:

Samples of *Juniperus thurifera* were analyzed from the Atlas Mts., Morocco, southern Spain, the Pyrenees, France, and Montdauphin, in south eastern France. The leaf essential oils were analyzed and found to polymorphic for several major compounds (sabinene, limonene, linalool, piperitone, linalyl acetate, and sesquiterpenes). In general, the Moroccan trees were higher in sabinene and lower in limonene than trees from Spain and France. Analysis based on Random Amplified Polymorphic DNAs (RAPDs) for the aforementioned populations plus *Juniperus foetidissima* (as an outgroup), revealed that the Moroccan *Juniperus thurifera* population was most similar to plants from southern Spain, then to populations from France. Although the trees clustered by populations, no major sub-divisions were found among the *Juniperus thurifera* populations. It is concluded that *Juniperus thurifera* (within the limits of the samples analyzed) is a single, variable species.