

Of samples ex CULBIN P22 and ex ALTYRE (regeneration from old 1870 trees)

Assined NRS and extracted 8.1.81. (collected 5.1.81 by M.T.T.C.)

Expected to be similar to each other, but origin unknown

ALTYRE — 121 trees, CULBIN — 46 trees.

Mean monoterpene percentage composition, with standard errors:-

	ALTYRE	CULBIN	mean %
α -pinene	10.5 ± 0.7	7.8 ± 0.5	9.1
camphene	0.1 ± 0.0	0.0 ± 0.0	0.1
β -pinene	14.7 ± 1.2	13.7 ± 1.1	14.2
myrcene	15.9 ± 1.3	17.1 ± 1.3	16.5
3-carene	44.9 ± 2.4	49.8 ± 2.3	47.3
α -terpinene	0.4 ± 0.0	0.5 ± 0.0	0.5
limonene	5.2 ± 1.0	3.7 ± 0.6	4.4
phellandrene	4.2 ± 0.6	3.5 ± 0.5	3.8
cis-pinene	0.4 ± 0.0	0.3 ± 0.0	0.4
γ -terpinene	0.3 ± 0.0	0.3 ± 0.0	0.3
terpinolene	3.5 ± 0.2	3.4 ± 0.2	3.5

Pattern-type representation, % values:-

	ALTYRE	CULBIN	mean
Type A	36.4	39.7	38.1
B	8.3	11.6	10.0
C	6.6	4.8	5.7
D	23.1	13.7	18.4
E	10.7	14.4	12.6
α	4.1	6.8	5.5
β	0.8	2.1	1.5
γ	6.6	6.8	6.7
δ	3.3	—	1.7
Style 1	57.9	61.6	59.8
2	19.8	19.9	19.9
3	15.7	10.3	13.0
4	6.6	8.2	7.4

Each parameter was allocated to its respective percentage interval defined as in Forestry 53, p. 114, and the data were used to compare the sites with the native woodlands analysed. The native woodlands were regrouped into six major regions (see Forestry, not yet published), and the similarities between the sites and these regions were as follows:-

Region	Mean similarity coefficient		
	Altge	Culbri	mean
WR (Western Ross)	5.3	4.0	4.8
NO (North)	12.0	11.0	12.0
SW (Southwest)	5.0	6.0	4.8
SP (Central Speyside)	11.9	6.8	10.9
SD (South Speyside - east Deeside)	10.4	10.5	10.6
NS (Central N-S belt)	8.2	9.1	8.3

Altge has the greatest similarity to NO, SP, SD regions (and a somewhat higher similarity to Speyside, as a geographical area, than to Deeside). Culbri is more similar to NO and SD regions, the similarity to SP being much lower. Or has a high similarity to Rannoch Moor sites. Taking the Altge and Culbri samples together as one population, the maximum similarity is to NO, SP, SD regions, and there is a high similarity to Rannoch Moor.

Comparison with individual sites showed that Altge was strongly similar to several northern and eastern sites, especially Rhidowach, Meallhare, Rothiemurchus, Glen Fehie, and Glentworth. Culbri had affinities with the central N-S belt which were at least as strong as those with Speyside/Deeside. The difference between these two similarity maps is striking enough to lead one to suggest that the Altge and Culbri lots are in fact two distinct populations, geographically. This is supported by the rather different percentage values for 3-carene and α -pinene and in some pattern-type parameters, notably type D. It is notable that both Altge and Culbri showed the maximum similarity coefficient with the Meallhare site, implying that it is likely that they may have had a common origin with this stand.

Comparison with the similarity maps for other native woodlands

suggests that the most likely origin for the Altype population is central Espirito, (or possibly eastern Decide), and for the Culbren population is the outer Espirito/eastern Decide region.

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19.5.81.

P.S. ART and WL are similar for 14 parameters at $\gamma = 30$, i.e. their value in the similarity matrix (Forester 53 p 116-117) would be 14, which is high but not remarkably so.