

# Coalescence and chimerism in *Codium* (Chlorophyta) from central Chile

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## Abstract

This study evaluates the natural occurrence of inter- and intracrust fusions of patches of a common species of *Codium* in central Chile. Field experiments suggested a high capacity for vegetative growth in the species followed by fast colonization of new areas. When two crusts encounter each other on a new substratum, their respective rhizoidal filaments and utricles grow intermixed, forming a continuous crust. Growth is initiated by the production of colourless cytoplasmic projections from the borders of the utricles. Protoplasm and plastids then invade these syncytial outgrowths, which then elongate, growing as creeping filaments on the new substratum. Creeping filaments later differentiate into utricles and rhizoidal filaments. Inter- and intracrust contact areas then become covered with the intertwining utricles and rhizoidal filaments of the two neighbouring crusts. Measurements of intracrust genetic variability, screened with three organellar markers (chloroplast partial *rbcL*, mitochondrial *rLSU* and chloroplast *Trn-Gly* gene), revealed widespread occurrence of intracrust genetic heterogeneity and chimerism at four localities of northern and central Chile. This is the first report of coalescence and chimerism in a green alga.