

THE COMPARISON OF *PORPHYRA TENERA* AND *ULVA PROLIFERA* USING RANDOM AMPLIFIED POLYMORPHIC DNA (RAPD)

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ABSTRACT

Pyropia tenera is a red algal species in the genus *Pyropia* and *Ulva prolifera* is a species of seaweed in the family Ulvaceae. The genetic diversity of two species of seaweed were analyzed by Random amplified polymorphic DNA (RAPD). Overall, 26 and 28 fragments were generated *P. tenera* and *U. prolifera*, respectively. A total of 15 (57.7%) of these bands were polymorphic among *P. tenera*. 14 (50.0%) of these bands were polymorphic among *U. prolifera*. The OPA-02-04 band and OPA-09-05 bands were amplified for *U. prolifera*, which was absent in the three populations of *P. tenera*. The OPA-10-02 band was only amplified for *P. tenera*. These bands were exhibited the useful patterns of distinction in specific species. In general, a very low genetic diversity was observed on *U. prolifera* and genetic indices of *P. tenera* showed a slightly higher than those of *U. prolifera*. For *P. tenera*, mean number of alleles per locus (A) was 1.577. The effective number of alleles per locus (A_e) was 1.373. The phenotypic frequency of each band was calculated and used in estimating genetic diversity (H) within species. For *U. prolifera*, the mean of A was 0.150 and A_e was 1.362. The mean of H was 0.203 across species. The values of total genetic diversity (H_T) were 0.214 for *P. tenera* and 0.203 for *U. prolifera*. The interlocus variation of genetic diversity (H_S) was 0.168 for *P. tenera* and 0.185 for *U. prolifera*. On a per locus basis, the proportion of total genetic variation due to differences among populations (G_{ST}) was 0.213 for *P. tenera* and 0.090 for *U. prolifera*.

Keywords: Genetic variation, *Pyropia tenera*, RAPD, *Ulva prolifera*.