P-9

Artificial seed production using the reproduction methods in *Codium fragile* (Chlorophyta)

Eun Kyoung Hwang[a,*], Jae Min Baek[a] and Chan Sun Park[b]

[a]*Seaweed Research Center, NFRDI, Jeonnam 530-831, Korea*
[b]*Department of Marine Resources, Mokpo National University, Jeonnam 534-729, Korea*

Codium fragile (Suringar) Hariot, an edible green alga is farmed in Korea by natural blooming zygotes attachment. Experiments were conducted to reveal the conditions for artificial seed production of *C. fragile* by sexual and asexual reproduction. Growth was compared between zygotes attachment (sexual reproduction) and isolated utricles with medullary filaments (asexual reproduction). Zygotes and isolated utricles with medullary filaments were cultured under different light conditions (10, 20, 40, 60 and 100 μmol · m^{-2} · s^{-1}) and temperatures (5, 10, 15, 20 and 25℃) under 16:8LD. Maximum growth of zygote was 261.3±21.0 ㎛ under 15℃ and 20 μmol $m^{-2}s^{-1}$ after 13 days culture. Maximum regeneration of isolated medullary filament was 8.1±1.7 mm per one isolated utricle under 20℃ and 100 μmol $m^{-2}s^{-1}$ after 15 days culture. After intermediate culture, *in situ*, during two months, morphogenesis occurred in both sexual and asexual reproduction, and growth of young thalli was not significantly different ($p>0.05$) between the both reproduction methods. Even though seed production of *C. fragile* is possible in both sexual and asexual reproduction, the mass artificial seed production of asexual reproduction is much more effective than that of sexual reproduction that is too much affected by maturity.

*Corresponding author: ekhwang@momaf.go.kr