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# Incidence of Larval Cloning in the Sea Urchins *Arbacia punctulata* and *Lytechinus variegatus*

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Poster Presentation P27

# INCIDENCE OF LARVAL CLONING IN THE SEA URCHINS *ARBACIA PUNCTULATA* AND *LYTECHINUS VARIEGATUS*

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Cloning is the development of a new, genetically identical individual from a pre-existing organism. Cloning by free-living developmental forms called larvae has been observed in 4 of the 6 taxonomic classes within phylum Echinodermata. An earlier report by Vaughn and Strathmann (2008) indicated the rate of cloning by pluteus larvae of *Dendraster excentricus* is influenced by the surrounding environment. We tested this hypothesis by monitoring the incidence and frequency of cloning of larvae of the sea urchins *Arbacia punctulata* and *Lytechinus variegatus* in response to different sources and abundances of particulate foods. Groups of seven plutei were reared transferred into each of nine different shot glasses containing 40 mL 36 ‰ filtered seawater. Commercial food particles (EZ-larva®), or algal cells, were added to produce 3 food concentrations (low, medium, and high). Every two days the plutei were counted, fed, and transferred to a glass with filtered seawater and food. They were counted to see if any clones had been released and if any plutei were lost or died. Only two clonally produced larvae were produced by larvae of *L. variegatus*; *A. punctulata* larvae did not clone. Overall survivorship was directly related to abundance of food and ranged from 18% to 80%. The observed low rates of cloning (≈ 2% of cultured larvae) imply that cloning (1) is not a common developmental feature among larvae of sea urchins or (2) our environmental conditions were inappropriate to induce cloning. Cloning rates may differ in nature depending upon numerous factors not studied in these experiments such as water temperature, salinity, or concentration of larvae in culture.