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The semicontinuous production of red pigment by immobilized cells of *Bacillus* sp.

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Natural pigment is essential to restore an acceptable appearance and it plays a significant part in our enjoyment of food. These compounds are responsible for many of the brilliant red, oranges, yellow, blue colors of edible fruit and vegetables and mushrooms as well as flowers, insects, birds, marine algae, fishes and other animals. Nevertheless, pigments cannot be used for food processing because of these natural colors were easily decolorized during food processing, storages and transportation and pH, heat, ultraviolet and oxygens. For the overcome this problem, hence much work has been produced naturally occurring pigments from their sources in nature as well as research in economic synthetic manufacturing route. The red pigment production by *Bacillus* sp. BH-99 was found to have a possibility of mass production for use of good. Those factors seemed to be important to increase yield of red pigment for given strain. The present paper describes to establish the optimal conditions for efficient production of red pigment. The semicontinuous production of red pigment by immobilized cells of *Bacillus* sp. BH-99 was investigated in comparison with free cells. The red pigment produced highest productivity under the conditions of aeration of 0.2mL/min and 2 mm diameter of gel beads by using 3.0% sodium alginate. Semicontinuous production by immobilized cells showed the highest productivity with replacement of fresh production medium in every 72 hrs for fourth fermentation cycle following the conditions of red pigment productivity.