Comparative analysis of astaxanthin production from *Haematococcus pluvialis* under flashing light

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Commercial aquacultures of sea food depend heavily on an inexpensive source of astaxanthin as a feed supplement. Astaxanthin surpasses the antioxidant activity of other carotenoids such as β-carotene, zeaxanthin and canthaxanthin, and even vtamin E.Haematococcus pluvialis is considered as one of the most promising astaxanthin sources, as it has the highest accumulation level known in astaxanthin-producing organisms.Haematococcus pluvialis accumulates astaxanthin during the transformation from the vegetative stage to the aplanospore stage as a response to stress conditions. The importance of the different factors inducing the astaxanthin is well know but not completely understood. The effect of light is probably the most important factor in the astaxanthin accumulation. Flashing light is drawing an increasing interest as a potential alternative light source to enhance the efficiency of photosynthesis and productivity in algal biomass production. Comparative experiments for producing high concentration astaxanthin using flashing light were performed. Astaxanthin contents per light energy were compared to confirm the benefits of flashing light. The astaxanthin content per photon under flashing light was much higher than that under continuous light sources such as fluorescent lamps.