The aims of this research project are to study algae diversity and cultivate economic algae from vegetable and fruit canning industry effluent, treated by anaerobic digester followed by aerated lagoon. Eleven families, 15 genera were found: *Anabaena* sp., *Nitzschia* sp., *Navicula* sp., *Cyclotella* sp., *Trachelomonas* sp., *Phacus* sp., *Euglena* sp., *Tetraedron* sp., *Scenedesmus* sp., *Micractinium* sp., *Closterium* sp., *Chlorella* sp., *Phormidium* sp., *Oscillatoria* sp., and *Microcystis* sp. *Chlorella* sp. was selected and cultivated. The results showed that *Chlorella* sp. could be cultivated in vegetable and fruit canning industry effluent. The maximum growth were $13.12 \times 10^5$ cell/ml, OD$_{560}$ 0.162 at 24 hours light by fluorescent lamp and 9.8 $\times 10^5$ cell/ml, OD$_{560}$ 0.12 by natural light.