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Evaluation of Skills in Shared Responsibilities in Algal Processing

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Freshwater is an important resource that should be maintained as pristine as possible despite the increased uses for drinking water, recreational activities, industrialization, agriculture, and navigation. Because water system recovery cost is expensive and time consuming, standard operating procedures have been used to assess water quality for bioindicators such as algae. The need for baseline data and protocols to assess and improve water quality is essential for the health of humans and for biodiversity in our ecosystem. In this research, 300 EPA region 5 (States of Michigan, Wisconsin, and Illinois) samples were processed following standard operating procedures, and the production of permanent slides was evaluated for federally required quality. Quality of cleaned periphytic material was measured by the percent presence of organic and/or inorganic substances in addition to diatom frustules. Permanent diatom slides were evaluated by percent algae distributed in a single layer and slides without visible patterns of algal coagulation. All data was tested for normality with Shapiro-Wilk test. With 70 percent of the EPA region 5 samples processed, the majority of samples after digestion pass the required quality, but permanent slides are not passing the requirement. This research allows efficient training at a master level of undergraduate and graduate for all steps involved the skills acquired can be applied to future jobs related to water quality analyses.