

The scientific objective of the study is to determine the extent of the plant's ability to absorb and concentrate toxic metals and metabolize various other chemical pollutants. These include phenols, creosols, insecticides, nitrates, phosphates and other related substances from polluted waters in populated regions. Cadmium, mercury, nickel, lead, silver and other metals are rapidly absorbed and removed from waters polluted with these elements. All such heavy metals are considered toxic to man when present in drinking water in trace quantities. Cadmium and nickel are known to cause cancer in experimental animals and other heavy metals are suspect.

The studies conducted in laboratories at NSTL have shown such promising results that NASA has installed a specialized system using water hyacinths as a final filtration system to remove chemical pollutants from laboratory and industrial chemical wastes from the Mississippi facility. A joint study involving NASA, Mississippi state officials, and the city of Bay St. Louis centers on the use of water hyacinths as a final filtration system for removing nitrates, phosphates and other chemical pollutants from the city's sewage lagoon.

The two methods under study in the NASA experiments are based on the production, continual harvesting and processing of large quantities of material produced from repeated plantings in chemically polluted waters. The first, called anaerobic fermentation, converts the shredded water hyacinths into bio-gas, which is similar to natural gas. Its potential annual yield is expected to be about 28,500 cubic meters (more than one million cubic feet) of gas per acre of plants. The second, called the pyrolytic decomposition process, produces a mixed hydrocarbon fuel similar to bio-gas.

Plants grown in domestic sewage effluent, free of metals in toxic levels also will be evaluated as an animal food source. Solid and liquid residues from the two processes also will yield large quantities of high grade fertilizer containing phosphorus, nitrogen, potassium, magnesium and other desirable trace elements.

Experimentation with aquatic plants such as cattails, bullrush, white mustard, water lily and water hyacinth are being conducted in temperate zones in the United States, Holland and Germany; now, therefore, be it

RESOLVED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Maryland Environmental Service study the feasibility of implementing certain programs for the treatment of sewage effluent by aquatic plants and formulate a proposal for the implementation of a pilot project in this State; and be it further

RESOLVED, That the Maryland Environmental Service report its findings to the Legislative Policy Committee