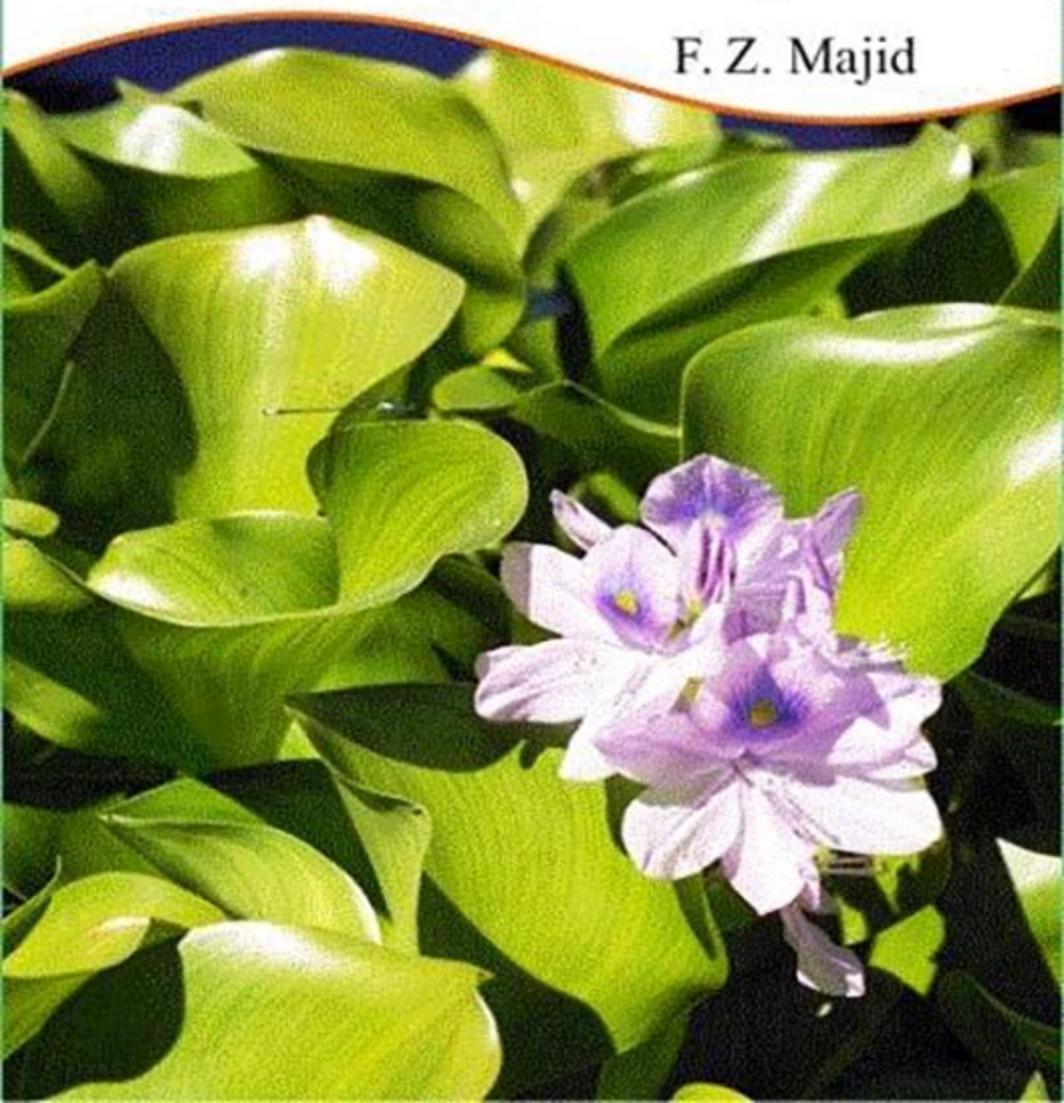


AQUATIC WEEDS

Utility and Development

F. Z. Majid



Aquatic Weeds: Utility and Development

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Editors' Preface

Water is the integral constituent of life and one of the most important natural resources. The present domain of life existing on the earth has evolved from water. A multitude of life forms, particularly plant species, is totally dependent on water to carry out its vital functions. Nevertheless, they are superficially treated, rather some what neglected, in the publications of plant biology.

The plant community of stoloniferous floating aquatic weeds, forming vast impenetrable floating mats in natural waters, canals, lakes, rivers and other water bodies, has created a nuisance, since it blocks drainage, channels and renders navigation and fishing almost impossible. In some parts of the world, aquatic weeds are spreading at an alarming rate; obviously it has become a serious concern to the governments of many countries and international agencies. Besides, concomitant financial losses incurred by farmers, traders and the departments dealing with fisheries and public health are often considerable. Efforts have been made to combat them with chemical weapons and mechanical devices.

The menace of aquatic weeds can be overcome by their utilization in a number of ways. After all, aquatic plants constitute an integral component of an aquatic ecosystem. They may serve as a good source of food to the mankind, a palatable feed to the water birds and animals, thus forming a base for aquatic wildlife conservation practices. Aquatic weeds, like terrestrial plants, are capable of trapping the solar radiations and thus serve as a potential source of energy. They may also serve as a good source

of fertilizers. Some of the aquatic plants are being cultivated for their astonishing diversity of medicinal and aesthetic values. The immense admiration of the beautiful flowers of lotus and water lilies is reflected in the ancient architecture, paintings and poems. In Indian mythology the sacred lotus, a common aquatic weed, has been regarded as a symbol of cosmic creativeness.

In the present monograph, the author has endeavored to reveal the facts about the utility and development for farmers, traders, industrialists and those who are directly or indirectly concerned with weed management, irrigation and fisheries. She has incorporated the latest information from a number of national and international journals and other publications.

Bikaner

Editors

Author's Preface

Homo sapiens or man, according to some archaeologists, appeared on this earth 3 million years ago. Many formidable species had appeared flourished, and then disappeared, before the appearance of man. Early man was inadequately equipped to protect himself from hostile environment and from the stronger for mid able predators. In spite of his weakness the single characteristic that saved man from extinction was his brain power-his ability to observe, analyse, adopt, and adjust. This gave him a superiority over all other species. Nevertheless, infant mortality then must have been great due to the prevailing unfavourable circumstances. Man must have faced the possibility of extinction many times during the first million years of his arrival on the earth. In order to survive, therefore, he had to obey the biological commandment of survival, "multiply". However, the policy of survival by 'multiplication' continues to persist even today, resulting in the explosive population boom, adversely affecting the economy of many countries and causing multitude of problems to the entire world.

World population at the time of the discovery of agriculture (12,000 years ago) is estimated to have been about 15 million. Population presumably doubled 4 times since the time of discovery of agriculture to the beginning of Christian era (world population was then about 250 million). The fifth doubling to 500 million occurred by about 1650. The sixth doubling occurred within 200 years, resulting in a population of 1 billion by 1850.

The dawn of modern medicine then further reduced the death rate. The seventh doubling to 2 billion occurred by 1930 (only 80 years after the sixth doubling). There after, sulfa drugs, antibiotics and improved vaccines appeared on the scene, substantially further reducing death rates. The eighth doubling bringing world population to 4 billion occurred in 1975. This doubling took only 45 years and represented an increase of 256-fold since the discovery of agriculture, 12,000 years ago. Fortunately, world population growth is now slowing down in many countries of the world (in some developed countries it has dropped to near zero). However, it is still frighteningly high in most of the developing countries, population doubling every 20 to 25 years, making it virtually impossible for food production to keep pace with population growth (Norman E. Borlaug, CHEMRAWN II, Philippines, Dec., 1982).

Fortunately, the optimism of man knows no bound. At the World Food Day Colloquium, held on Oct., 16, 1982, at the F.A.O. Head quarters in Rome, the following statement was made, "We believe that it is indeed possible to end world hunger by the year 2000. More than ever before, humanity possesses the resources, capital technology and knowledge to promote development and to feed all people, both now and in the foreseeable future"

Land has so far played the dominant role in food production of the 3.3 billion metric tons of total food harvested in 1975, 98 per cent of the tonnage was supplied by the land and only 2 per cent came from the ocean and inland waters. Recently the scientists have started to regard aquatic weeds as a gift of nature, having great potential as source of food, feed, fertilizer and energy. According to some modern scientists, both developing countries and developed countries face a future in which food production will need to depend more and more on the effective management of water resources.

This monograph is a humble attempt to summarize, to some extent, the information gathered so far by the international scientists on aquatic weeds and their economic importance.

Dhaka

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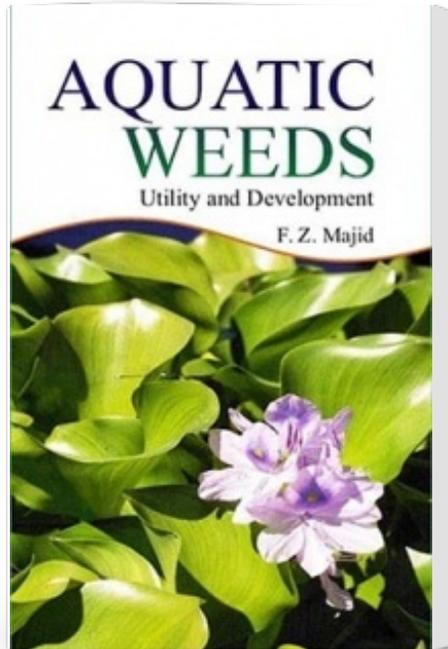
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