

W.7 WATER HYACINTH/WATERHIASINT

(*Eichhornia crassipes* (Mart.) Solms)

Family: Pontederiaceae

(Compiled by the Botanical Research Institute, Pretoria)

Water hyacinth is a free-floating or mud-rooted herb, usually about 100 to 200 mm high. When growing in dense mats plants may reach a height of up to 1 m. The leaves are arranged in rosettes and have spongy, swollen leaf stalks and rounded, shiny blades 20 to 80 mm in diameter. In dense infestations leaf stalks are less markedly swollen. Up to 10 showy, pale blue to mauve flowers are borne in upright spikes which are produced during the summer months. The uppermost of the 6 petals is the largest and has a conspicuous dark blue patch with a yellow centre. The spindle-shaped capsules may contain up to 200 minute seeds. The plant may reproduce vegetatively at an alarming rate by means of side shoots which break off and develop into new plants. Actively

growing colonies may double their numbers every 11 to 18 days.

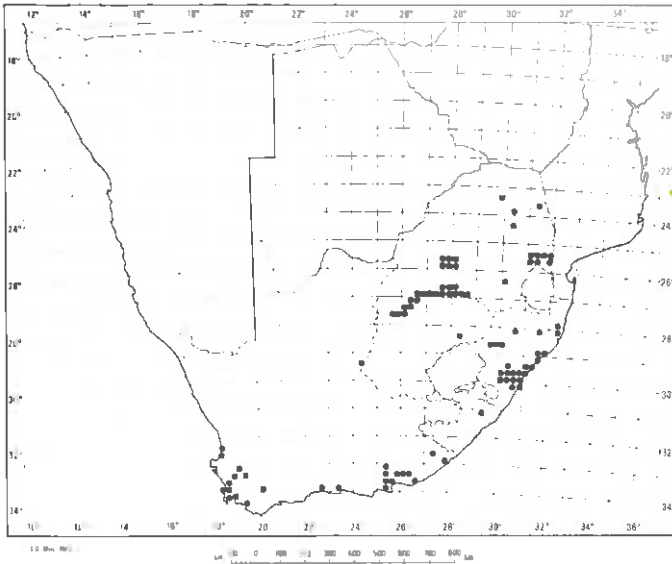
Related species

Two species of *Eichhornia* are found in Southern Africa, the introduced water hyacinth and the native *E. natans* (Beauv.) Solms which grows in northern South West Africa Namibia, Botswana and further north in tropical Africa. The native species can be easily distinguished by its small flowers and the leaves which have a heart-shaped blade no longer than 20 mm. It is also not free-floating like the water hyacinth.

Distribution

A native of the American tropics, water hyacinth has spread to all the warmer regions of the world and is today one of the major aquatic weeds. It was introduced to South Africa shortly before 1910 and is now well-established in all four provinces, especially in the eastern and southern





regions of the country. Particularly large concentrations are found in the coastal regions of Natal and along the Vaal River as well as the Crocodile River in Eastern Transvaal. The present world-wide distribution is largely due to the activities of gardeners, aquarium-owners and boating enthusiasts as water hyacinth is readily spread as entire plants or even as plant fragments that include at least one growing bud.

Ecology

The plant exists under a wide range of environmental conditions. It grows best when air and water temperatures are between about 21 °C and 27 °C, but it can stand extremes of 0 °C and 40 °C for short periods. It is primarily a fresh-water plant but can survive up to 13 days in sea water. Increase in the nutrient content of the water causes a corresponding increase in mass of the fresh plant. The largest concentrations are thus found in waters enriched by sewage and industrial effluent or by run-off from fertilised agricultural land.

Importance

Extensive dense mats of water hyacinth prevent the use of water bodies for boating, angling and similar activities. The plant may also reduce flow through irrigation channels and sluices and disrupt hydro-electric installations. Rotting material may build up on the bottom of canals and reservoirs, which may lead to low oxygen levels and poor water quality. The water loss through evapotranspiration from a dense cover of water hyacinth may be three to seven times as high as through evaporation from an open water surface. Cattle have drowned through stepping on to a seemingly solid surface of water hyacinth. The plant creates conditions suitable for the breeding of mosquitoes and bilharzia-carrying snails.

Since water hyacinth effectively absorbs excess nutrients, these can be readily removed from the water by removing the plants. It has been

estimated that under optimum conditions one hectare of the plant could absorb the nitrogen and phosphorous waste products of 800 people.

Legislation and control

Water hyacinth is a proclaimed noxious weed throughout the Republic of South Africa. (Proclamations 170/1937, 161/1938, 199/1938, 45/1945, 50/1948 and 252/1956 of the Weeds Act No. 42 of 1937). For control measures see Steyn, Scott, Ashton & Vivier (1979).

Note

Eichhornia is named after J.A.F. Eichhorn, a Prussian Minister of Education; *crassipes* = with a thick foot, refers to the swollen leaf stalks.

Species Number: 0921.000-00100

Literature

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