*Azolla filiculoides*

[Synonyms : *Azolla caroliniana*, *Azolla magellanica*]

**WATER FERN** is a free-floating aquatic fern. Native to both North and South Americas it has small stems coated with minute overlapping, bluish-green leaves that turn to red and purple in Autumn.

It is also known as *Azola americká* (Czech, Slovak), *Azola karolínská* (Czech), Azolla, Duckweed fern, Eastern mosquito fern, Fairy fern, Fairy floating moss, Fairy moss, Fern azolla, *Grosser Algenfarn* (German), Large mosquito fern, *Moosfarn* (German), Mosquito plant, *Mossbräken* (Swedish), Pacific azolla, Pacific mosquito fern, and Red water fern.

*Filiculoides* is made up of Latin *filici* (fern) and Greek *-oides* (like) components meaning 'fern-like'.

Water fern's naturalization in Europe appears to date from a period following the last-experienced Ice Ages. It would seem that authorities believe it grew naturally in Europe between interglacial periods.

The plant seems to have contrasting qualities that make it an abomination for some yet cause it to recommend itself to others.

It is one of several pond plants that have been introduced widely in far-flung countries and are a cause for environmental concern in many, including Britain and southern Africa. Beyond their native habitat water fern spreads easily, escaping from ornamental or other situations in which the plants are cultivated (for instance bits get attached to other plants which may themselves be transplanted). Water fern plants can end up by clogging rivers, canals, ponds, lakes and ditches as they are unexposed to many of the controls natural in their native environment – including a particular beetle that South African researchers have imported with successful results (see below). The plant can cover the water surface relatively quickly and in so doing it obliterates sunlight and deoxygenates the water beneath with dire effects for life there, not least the fish. In southern Africa it is believed to have been the culprit in the near extinction of a fish known locally as the Eastern cape rocky (*Sandelia bainsii*) – and farmers have also lost livestock that have drowned when lured into the water by the lush green grass-like surface (an illusion to which even wild game have been disastrously susceptible). Other examples include a new dam which incurred costs of 1.8 million rands when water fern infested its irrigation pumps and pipes. These had to be replaced after they overheated and burnt out. (For southern Africa however a particular beetle imported in the mid-1990s from Florida (USA) has been able to save the day in many instances. Researchers have shown that within 217 days the insects can clear a site into which they have been released.)

On the other hand experiments during the 1990s have led to the cultivation of water fern on farms in South America and East Africa for use as a protein supplement in pigs' diet. While in Hawaii this species was introduced to the rice fields there in order to combat the mosquitos – and the resultant carpets of water fern have proved to be effective in this regard as they deter the growth of the weeds in which the mosquitos breed. (Another closely related species native to Vietnam is being cultivated in the rice fields there as well – but the emphasis in this case is on what would be known in England as 'companion

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gardening' qualities that researchers believe they have identified. Carpets of the water fern generate nitrogen and this is held to encourage the growth of young rice (*Oryza*) plants dramatically.)

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