

PRODUCT: **ORANGE OIL** Water Surface Clearer

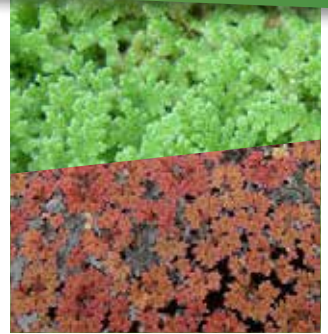
TARGET: *All types of Free-Floating Aquatic Matter in*
PONDS, DAMS, LAGOONS & LAKES



Lemna/Duckweed



Salvinia



Green Azolla/Red Azolla



The use of Orange Oil is an environmentally friendly weed control approach⁴ in ponds, dams, lagoons and lakes.

The principal component of orange oil, is known for its herbicidal properties².

WATER SURFACE CLEARER SPRAY

- Suitable for the control of salvinia, azolla and duckweed¹
- Clears the water's surface of unwanted aquatic matter
- More environmentally friendly than synthetic herbicides³
- Australian Made & Owned
- Non-toxic to humans and domestic animals³

How it works

When the orange oil covers the surface of the leaves, it disrupts the cuticle, breaking down or dissolving the waxy coating on plant cell walls.

It also contributes to the desiccation or burndown of young tissues⁶. This results in the plant losing its ability to retain water³. The damaged leaf cells leak water and the plants die of dehydration⁸.



SAFE FOR

Swimming, Irrigation, Stock, Fish, Aquatic Plants, Pets, Wildlife, The Environment & is a Natural product.

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Orange oil has been used for the successful control of primary form salvinia¹.

The NSW Department of Primary Industries (DPI) has listed orange oil as a method to control salvinia¹.

HOW CAN I CONTROL FREE-FLOATING AQUATIC MATTER ON MY WATER'S SURFACE?

Free-floating aquatic matter can be hard to get rid of. Depending on how serious your coverage of aquatic surface matter is, the recommended treatment will vary.

When the amount of aquatic matter is not great, it's best to use just this spray treatment. For larger coverage that covers more than 90% of the water's surface, a combination of physical removal and this spray treatment is your best bet.

Our lightweight *Aquatic Weed & Debris Skimmer* for Duckweed, Lemna, Azolla and Salvinia works perfectly in conjunction with this spray treatment for larger coverage problems.



The Aquatic Weed Control Experts

ORANGE OIL Water Surface Cleaner

Application Rates:

Where to Use	How Much to Use	How to Apply	When To Use
Dams, Reservoirs and Ponds	1L per 500m ² of water surface area.	Mix 1-part product with up to 100 parts water and spray using a back pack sprayer directly onto the water's surface.	Best to apply several light applications rather than one heavy application.

For Best Results:

Apply lightly and evenly across the water's surface.

For best results, apply full applications on day 1, 2 and 4.

**Always read the product label for directions.*

When orange oil herbicides were applied to vegetation, "most vegetation showed visible signs of stress (wilting or browning) within 2-24 hours"³. Orange oil binds to proteins at different sites than synthetic herbicides. This allows elimination of herbicide resistant weeds^{6[7]}. Non-persistent, which means it decomposes rapidly, preventing the accumulation of compounds in soil and its subsequent influence on non-target organisms⁵.

SUITABLE FOR



Large Pond

15,000L - 50,000L
0 - 50m²



Small Dam

50,000L - 1ML
50m² - 2,000m²



Large Dam

1ML - 10ML
2,000m² - 10,000m²



Lagoon

References:

[1] NSW DPI, Salvinia Control Manual, Orange, NSW: NSW Department of Primary Industries, 2006. [2] R. Ciriminna, F. Meneguzzo and M. Pagliaro, "Orange Oil," in Green pesticides handbook : Essential oils for pest control, Taylor Francis Group, 2017, pp. 291-301. [3] O. Messerschmidt, J. Janikauskas and F. Smith, "Limonene-containing herbicide compositions, herbicide concentrate formulations and methods for making and using same", United States of America Patent US 8,273,687 B2, 25 September 2012. [4] M. S. Gomes, M. d. G. Cardoso, M. J. Soares, L. R. Batista, S. M. Machado, M. Andrade, C. de Azeredo, J. M. Valerio Resende and L. Rodrigues, "Use of Essential Oils of the Genus Citrus as Biocidal Agents," American Journal of Plant Sciences, vol. 5, pp. 299-305, 2014. [5] R. Ribeiro and M. Lima, "Allelopathic effects of orange (Citrus sinensis L.) peel essential oil," vol. 26, no. 1, pp. 256-259, 2012. [6] D. Soltyś, U. Krasuska, R. Bogatek and A. Gniazdowska, "Allelochemicals as Bioherbicides — Present and Perspectives," in Herbicides - Current Research and Case Studies in Use, IntechOpen, 2013. [7] G. Flaminio, "Natural Herbicides as a Safer and More Environmentally Friendly Approach to Weed Control: A Review of the Literature Since 2000," in Studies in Natural Products Chemistry, vol. 38, Elsevier, 2012, pp. 353-396. [8] E. Koperek, "Organic Herbicides," World Agriculture Solutions, Pennsylvania, 2015.



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