

# SOIL WETTING AGENTS

By Dr Ruth Mann



Soil water repellency (SWR) occurs on many golf courses in the UK and Ireland. There are numerous causes of SWR, such as preferential flow of water, fungal activity, application of top dressing, presence of thatch and compaction, which may contribute to varying degrees.

Further to this, as soil dries, a critical moisture content may be reached below which soils become difficult to rewet. Where soil water repellency occurs, the turfgrass may wilt and eventually die in the most severe case. Playability and the aesthetic appearance of the golf course can be affected. Further to this, the use of water on golf courses is being discouraged throughout Europe as water shortages have occurred in recent years. Wetting agents have been used for many years to improve the wettability of soils on golf courses and so improve the efficacy of any water absorption. In the UK, numerous wetting agents are available. Each product may perform slightly differently depending on its mode of action, dose rate and suggested programme of use.

Soil wetting agents are based on three chemistries – non-ionic surfactants, block copolymers and organosilicones. A natural product – Yucca extract – is also available. Hydrophobic soils are often coated with organic substances, which repel water making them difficult to rewet. Non-ionic surfactants work by binding to the organic coating allowing water to become attracted to the soil again. Block copolymers attach to the soil particles differently and may allow water to disperse or to be held in the rootzone. Organosilicones are very effective at achieving fast spreading of water.

To achieve the best from wetting agents any factors contributing to the dry patch should be addressed. Such as alleviation of compaction, removal of thatch and preventing the rootzone from reaching the critical moisture content by ensuring even and timely irrigation. Best results are achieved by applying wetting agents in a programmed approach starting early in the season before symptoms are observed. Blanket applications are also more effective than spot treatments. The efficacy and longevity of each product depends on the dose rate.

Therefore, subsequent applications should occur after the suggested period of effective control has elapsed for each product. Attention should also be paid to the activity of each product. For example, Breaker Curative does not help water penetration but helps to remove the organic coatings on sand grains and flush them through the rootzone. Therefore, it should be used in a programme with another soil wetting agent that helps water distribution, such as Breaker.



A selection of products with their modes of action and possible distributors is provided on the table below. This is by no means an exhaustive product list but gives the main soil wetting agents available in the UK.

Product	Distributor	Straight / Blend	Chemistry	Advertised Uses
Advantage	Aitkens/Avoncrop/Vitax	Blend	Non-ionic surfactant	b, e
Aqua - zorb	Turftech	Blend	Non-ionic surfactant	a, b, d, g
Award Osprey	Avoncrop	Blend	Block copolymer	a, e, f
Breaker Advance	Rigby Taylor	Blend	Non-ionic surfactant	a, b, e, f
Breaker Curative	Rigby Taylor	Blend	Non-ionic surfactant	b, d
Clearing	Vitax	Blend	Non-ionic surfactant	c, e
Correct OARS	Tower Chemicals	Blend	Non-ionic soil surfactant and organic solvent	d, e, f
Dispatch	Aitkens/Avoncrop/Vitax	Blend	Non-ionic surfactant	e, f, g
Fifty 90	Aitkens/Avoncrop/Vitax	Blend	Non-ionic surfactant	a, b
H <sub>2</sub> Pro	Scotts	Blend	Non-ionic surfactant	a, b, e, f, g
Inflo XL	Headland	Straight	Organosilicone	b, e
Noburn	Novozymes	-	Yucca plant extract	a, e, f
Organiflo	Aitkens	-	Yucca plant extract	a, e
Primer Choice	Aitkens/Avoncrop/Vitax	Straight	Non-ionic surfactant	b, e
Primer 604	Aitkens/Avoncrop/Vitax	Straight	Non-ionic surfactant	a, b, e
Quench	Sherriff Amenity	Blend	Block Copolymer	a, b
Revolution	Aitkens/Avoncrop/Vitax	Straight	Block Copolymer	e, f, g
Tricure	Headland/Sherriff Amenity	Blend	Block Copolymer	a, b, e, f, g
Ultraflo	Aitkens/Avoncrop/Vitax	Straight	Non-ionic surfactant	a, c, e
XL Fairway	Headland	Straight	Organosilicone	c, e

Table 1: Example soil wetting products, modes of action and distributor. Neither the list of products nor the distributors is exhaustive. Other products are available and each product may be available from other distributors.

Please note the information contained in the above table has been taken from the respective product labels. STRI does not accept any responsibility for the accuracy of these claims.

- a – To treat localised dry patch preventatively
- b – To treat localised dry patch curatively
- c – To manage fairy ring
- d – To strip away organic coatings on sand grains
- e – Aid water penetration/dew removal
- f – Help ensure even water distribution in the rootzone
- g – Reduce irrigation requirements

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