



**Divine®**

Soil wetting agents

# What's holding the paddock back?

Identifying and understanding  
non-wetting soils

 **BASF**

We create chemistry

# A widespread limit to productivity



Non-wetting soils make up a surprisingly high percentage of the land under crops in Australia.

It's estimated that over 12 million hectares are affected by water repellence: more than half of grain-growing area in WA and large areas of south-eastern SA and western Victoria.

The negative impacts on productivity include:

- Uneven germination, with gaps in the crop row.
- Delayed and staggered emergence.
- Poor crop vigour because the dry soil limits the plants' access to nutrients.
- Poor weed control because the weeds' emergence is also staggered.

**Yet millions of the affected hectares remain untreated.**

# A growing problem



Soil particles become water-repellent when they are coated in organic matter. So the incidence and severity of non-wetting soils are affected by the volume and nature of organic matter – including crop residues – left on or near the surface.

Crops in southern and western Australia have always been grown in sandy soils. Recent reports that the symptoms are becoming more severe have been linked to a number of recent climatic and agronomic changes:

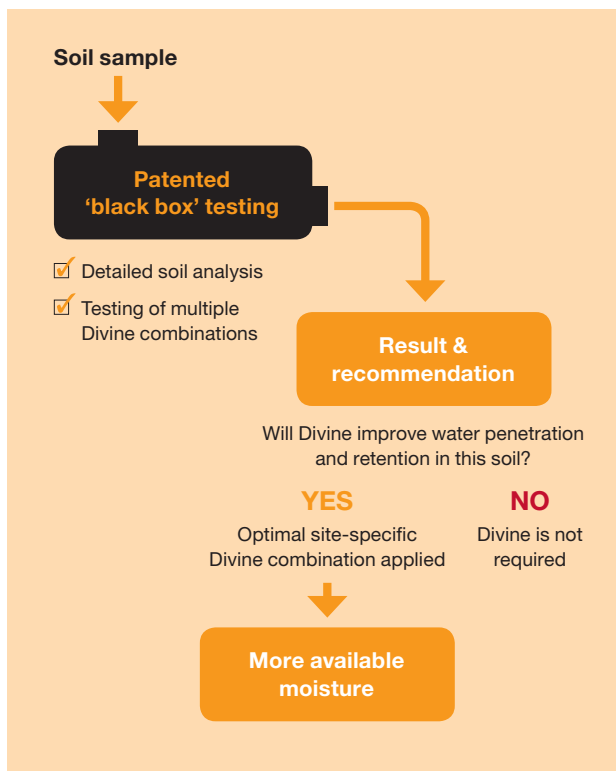
- Less cultivation is leaving higher amounts of organic matter on the soil surface.
- Some crop residues such as the wax from lupin leaves and canola roots cause spikes in water repellence.
- A trend towards drier autumns gives the soil less chance to build up moisture before sowing.

# The Divine<sup>®</sup> difference

BASF's new test-and-treatment process adds extra precision and certainty to both the testing and treatment of non-wetting soils.

The two new products – **Divine Agri** and **Divine Integrate** – can be used standalone or in blends, so site-specific recommendations can be made from a choice of 7 possible formulations.

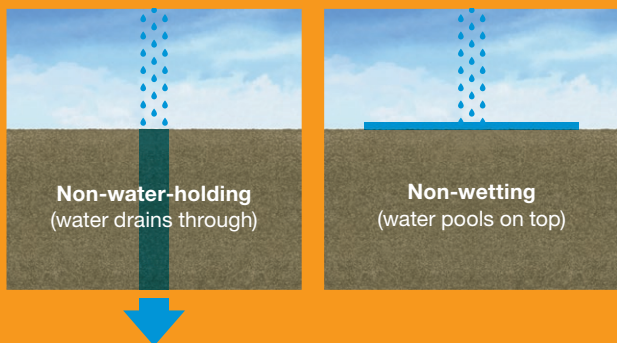
A patented new testing process developed by BASF identifies the optimal Divine treatment for each site and pre-tests it to quantify its positive impact.



# Identifying the problem

Non-wetting or water repellency is not the only issue holding back the productivity of soils – and it's common for soils to be affected by multiple issues.

One key issue is distinguishing non-wetting soils from soils that won't hold water. Both issues are more common in sandy soils and the effect on productivity can be similar, but the causes are almost the opposite of each other.



In-field observations and testing can be deceptive, so laboratory testing is recommended to confirm water repellence and measure the severity of the problem.



# Divine®

## Soil wetting agents

Non-wetting soils are:

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A very widespread problem.

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Varied in type and severity.

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Often misdiagnosed.

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Significantly undertreated.

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**The new Divine process adds a new level of precision and certainty to both testing and treatment.**

For more information on Divine testing and treatment, visit **[crop-solutions.basf.com.au](http://crop-solutions.basf.com.au)** or call **1800 558 399**

**SOURCES:**

DPIRD & GRDC information online at [agric.wa.gov.au/water-repellence](http://agric.wa.gov.au/water-repellence)

Roper M, Davies S. "New initiative investigates non-wetting solutions" *Ground Cover* Suppl. no 118, 2015

**ALWAYS READ AND FOLLOW LABEL DIRECTIONS**

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