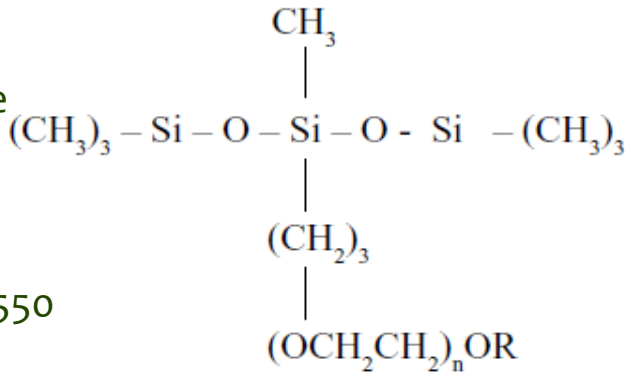

EcoBee
New generation super spreading agent

EcoBee

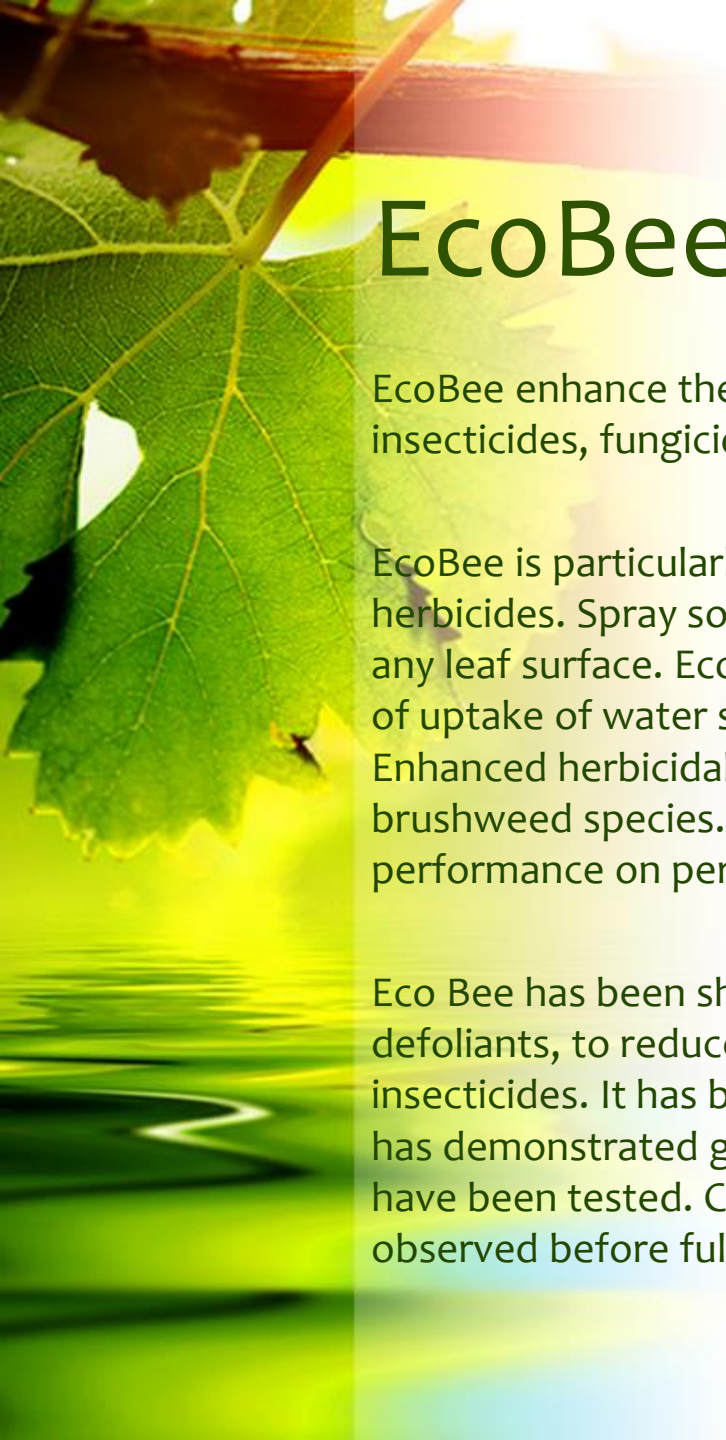
Surface-active agents are chemicals that reduce the surface energy of a material to which they are added by absorption at the air/liquid interface.

Surface tension can be considered in various ways, but perhaps best as a result of the forces of attraction existing between the molecules of a liquid. It is measured by the force per unit length acting in the surface at right angles to an element of any line drawn in the surface (mN/m).

Of the various surface-active chemistries currently available, we mainly concentrate on a class of materials called silicone polyethers. The three most common molecular structures for silicone surfactants are rake-type copolymers, ABA copolymers and trisiloxane surfactants.



EcoBee is a silicone polyether copolymer with 550 molecular weight, all EO polyether type, H end group trisiloxane molecular architecture.



EcoBee

EcoBee enhance the effectiveness of agricultural chemicals including herbicides, insecticides, fungicides and plant growth regulators.

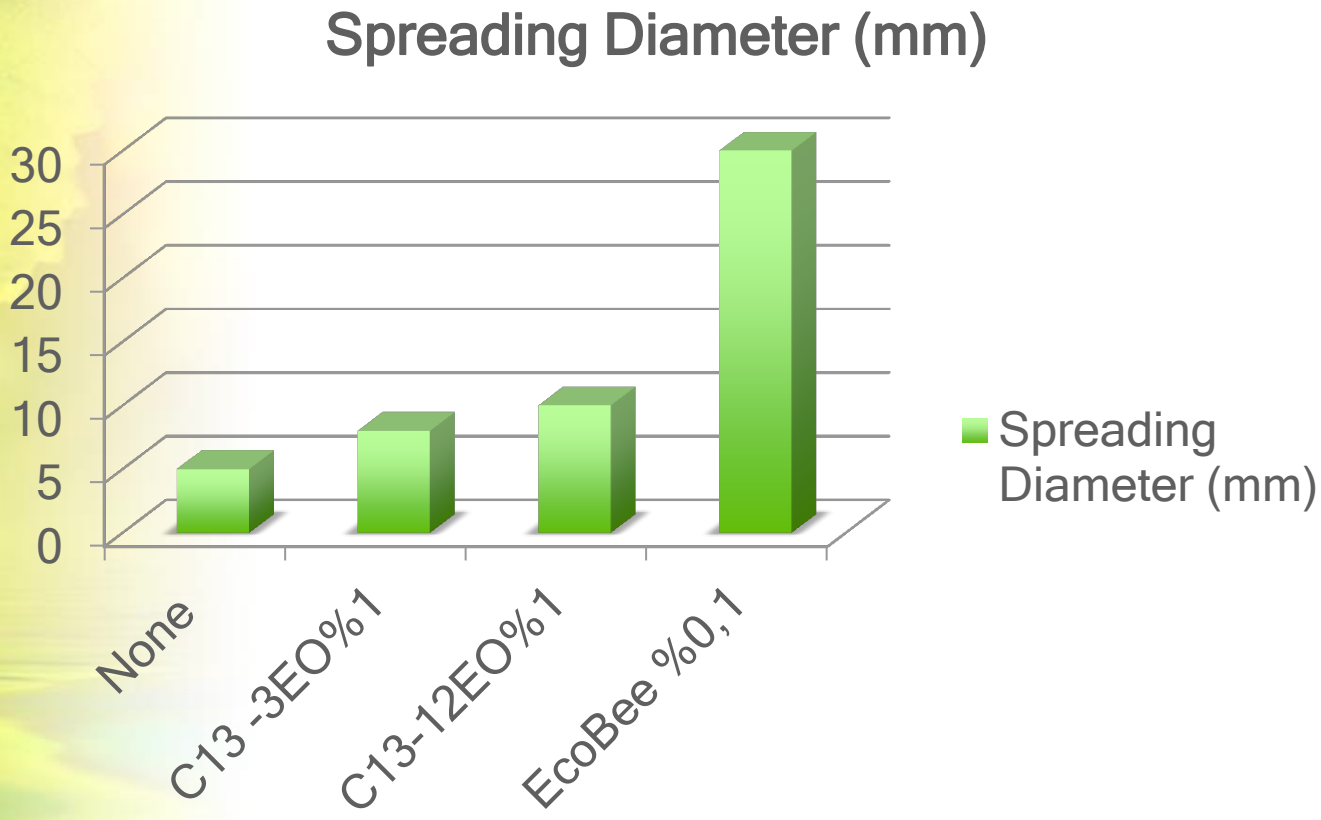
EcoBee is particularly effective when used with water soluble and post- emergent herbicides. Spray solutions formulated with EcoBee will complately wet virtually any leaf surface. Eco bee has also been shown to increase the amount and the rate of uptake of water soluble herbicides. This results in more consistent weed control. Enhanced herbicidal efficacy has been most evident on broadleaf and woody brushweed species. Eco bee has been shown to be less effective in enhancing performance on perennial grass weed species.

Eco Bee has been shown to enhance the performance of cotton and potato defoliants, to reduce the surface tension and improve wetting of fungicides and insecticides. It has been shown to enhance the uptake of foliar nutrients. Eco Bee has demonstrated good plant safety. However, not all species and various rates have been tested. Caution should be used and only a small area treated and observed before full- scale applications are made.

Typical Physical Properties;

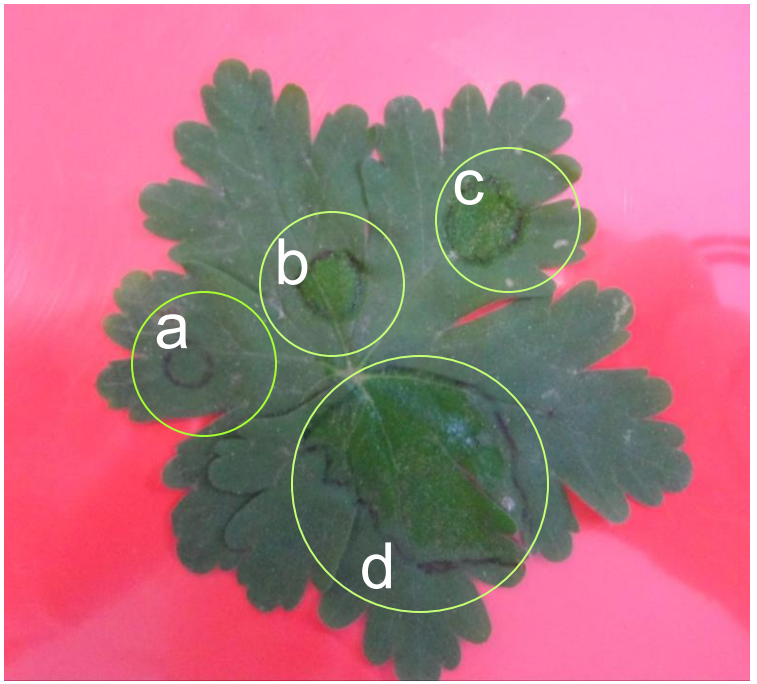
EcoBee Physical Properties	
Surface Tension (0,1wt% , nM/m)	20
Cloud Point(0,1wt % °C)	<10°C
Viscosity(cPs@25°C)	20 mpa
Specific Gravity(25°C)	0,986
Ionic Character	Nonionic

Comparison with conventional adjuvants;



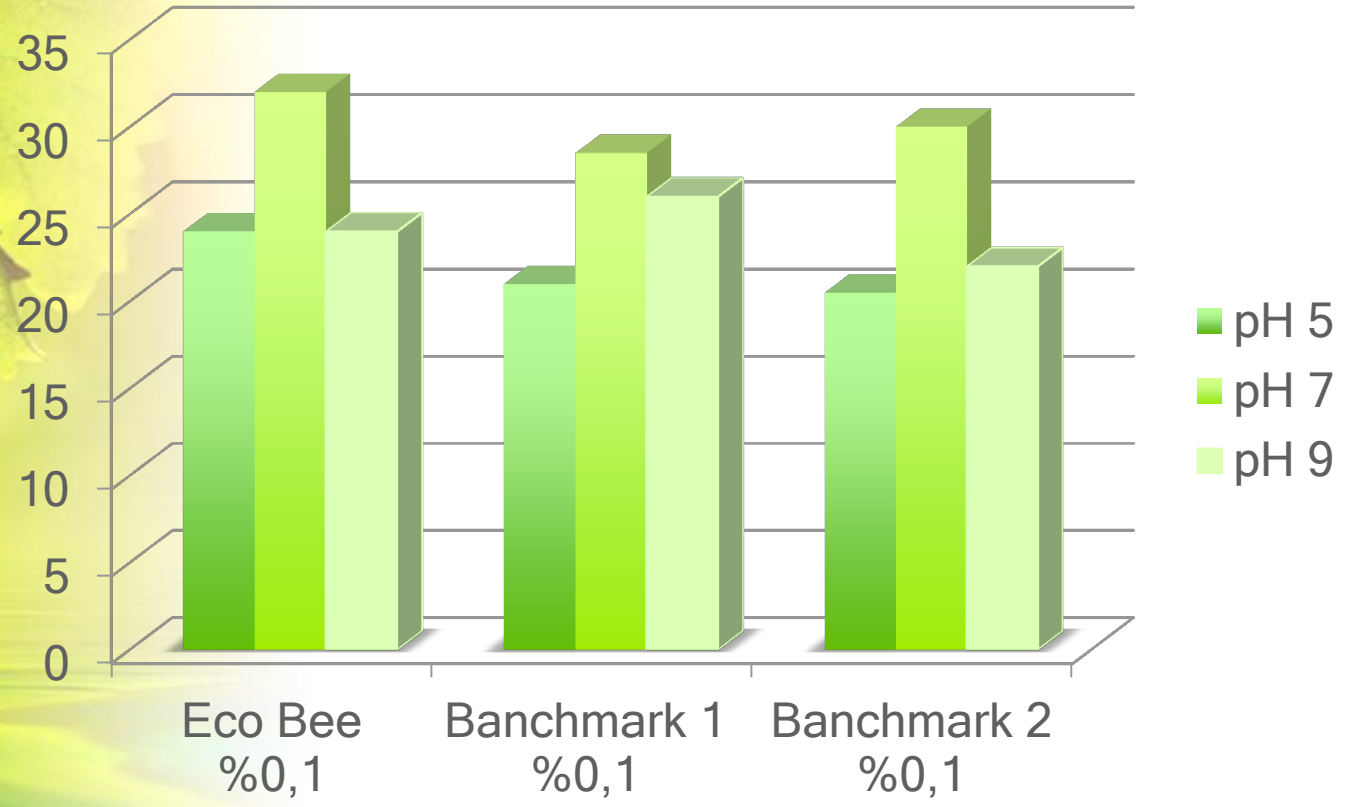
Comparison with conventional adjuvants;

- EcoBee spray adjuvant lowers the surface tension of spray solutions, beyond that which is achievable with conventional adjuvants. EcoBee (0,1 %) gives an aqueous surface tension of 20nM/m, on the other hand a tridecylalcohol containing 12EO units nonionic surfactant at 1,0% gives a surface tension of only 30nM/m. Because EcoBee spray adjuvant is a superspreading agent, the contact angle of spray solutions on leaf surface is reduced, leading to an increase in spray coverage.



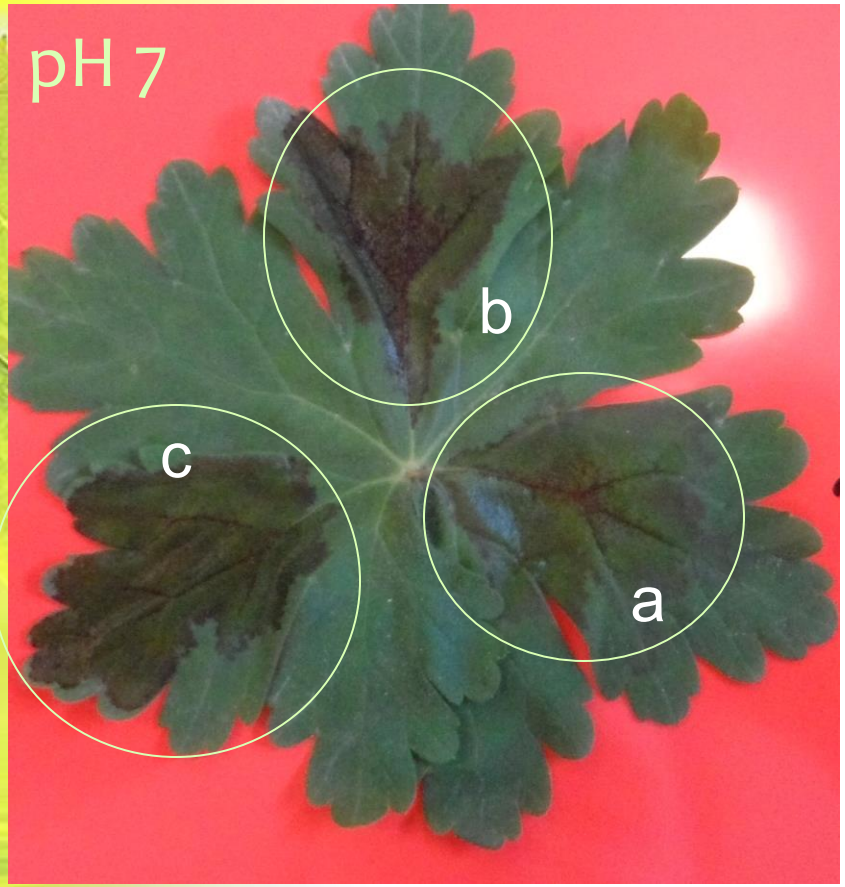
a:None
b:C13-3EO
c:C13-12EO
d: Eco Bee

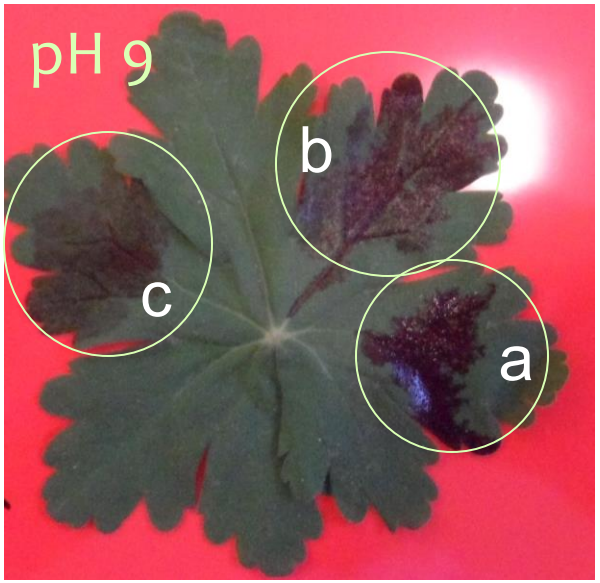
Comparision with competitor companies

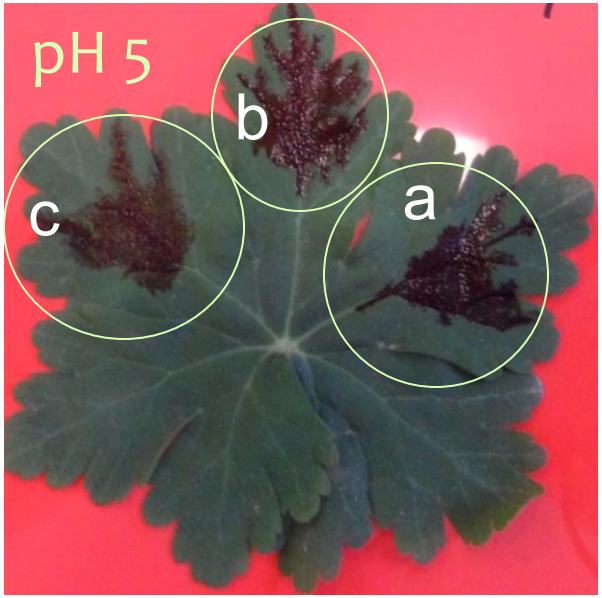


One minute after treatment on geranium leaf

Comparision with compatitor companies;







a: Banchmark 1
b: Banchmark 2
c: Eco bee

Uptake

- Additionally, under specific conditions, Eco Bee promotes rapid uptake of agrochemical into plants via stomatal infiltration. Spray solutions taken into plants in this way become rainfast, thereby improving application reliability.

Potential Applications

- Eco Bee spray adjuvant has been used successfully in spray applications globally.

Application	Use rate*
Herbicide, defoliants and desiccants	0,025% to 0,15%
Insecticide, miticides	0,025% to 0,1%
Fungicide	0,015% to 0,05%
Nutrients	0,015% to 0,025%
Plant growth regulators	0,025% to 0,05%
Fertilizers	0,015% to 0,1%

**Do not use this product at a rate which exceeds 0,25%*

Key Features & Typical Benefits

- Super spreader and wetting
- Lower surface tension than conventional surfactants
- Promotes spray volume reduction
- Promotes rapid uptake of agrochemicals (rainfastness)
- Improves spray coverage
- Increased fungicide and herbicide effectiveness
- Crop safe
- Nonionic
- Meets requirements of EPA 40CFR 180.9104 ****
- Many registered uses