

# A Novel Insecticidal Soap for the Control of Soft Bodied Insect Pests

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Naturiol LTD – a new spinout company at Bangor University,  
North Wales

High value platform chemicals from  
indigenous plants.

Extracting plant saponins and unusual fatty  
acids.

Research into new products with agricultural  
applications.

Innovate UK biotech plant cell culture  
project.

Another Innovate UK project on modified  
saponins for anthelmintic applications.



Naturiol LTD – a new spinout company at Bangor University,  
North Wales

**Prof Mark Baird** – Retired Professor in organic chemistry with experience in organic synthesis and bioactive materials from plants.



**Dr Owen Jones** – 10 Years of experience in academic research and nearly 30 years of industrial experience in the field of biopesticides.

**Dr Mark Long** – Recently completed a PhD in synthetic carbohydrate chemistry, with experience in horticulture.



## Control of Soft-Bodied Insect Pests

### – Current Insecticidal Soap Solutions

Available as a concentrate for professional use and as a ready to use product for home and garden.

Effective against aphids, mealybugs, spider mites, thrips and whiteflies.

Sprayed directly onto insects, quickly killing on contact by destroying the cuticle.

No known effect on bees, pollinators, and predatory insects.

Low mammalian toxicity.

Compatible with biological controls, such as predators and parasites, microbial pesticides, and semiochemicals, certified for organic use.



## Control of Soft-Bodied Insect Pests

### – Drawbacks to current products

Concentrations above 2% can have phytotoxic effects, especially with multiple applications. Some plants very susceptible to scorching by insecticidal soaps such as *Brassicas*, cucumbers and certain ornamentals.

At 6% can cause severe phytotoxicity in ornamental plants such as *Gardenia*, *Lantana*, poinsettia, *Begonia* and *Impatiens*.

**Soaps are widely used in home and garden, but commercial growers are reluctant to use them at concentrations that give good control of pests fearing some cosmetic damage to their produce from phytotoxicity.**





Mealy bug before and after treatment with Naturiol Soap

Shows the wax stripping ability on these difficult to control insects



Before treatment



After treatment

Underside of aubergine leaf treated with Naturiol at 4% (2% FAs)



Mark Baird, Owen Jones and Mark Long

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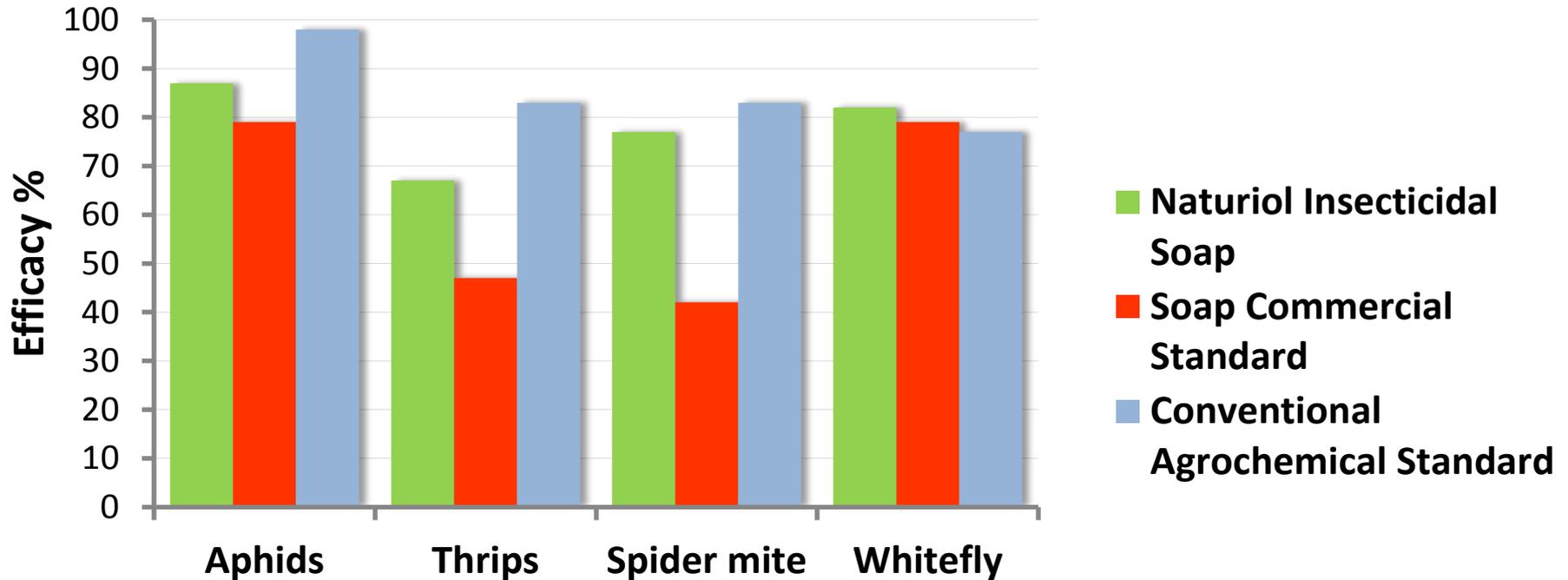
## Underside of aubergine leaf - untreated control



Floor covered with black plastic below aubergine plants treated with Naturiol at 4% (2% Fas) and control



## Independent Efficacy tests



## Our product:

At 4%, 6% or 10% concentration the new soap product was **not** phytotoxic to the following vegetables and fruits:

Bananas, beans, broccoli, Brussels sprouts, cabbage, cauliflower, carrots, courgettes, lettuce, melon, Swiss chard, spinach, sweet peppers or tomatoes.

Nor was it phytotoxic at these concentrations to the following ornamentals:

*Lantana*, *Impatiens* or the orchid *Phalaenopsis amabilis*

banana tests





- A comparison of damage in tomato seedlings sprayed twice with a standard commercial soap and Naturiol Soap at 6%.
- Significant damage to plants treated with the standard and only very small levels of leaf deformation with Naturiol.



Tomato seedlings treated with Commercial Soap Standard 6% (top), Naturiol 6% (bottom left) and a water control (bottom right).



# Naturiol IPR, Patents and Regulatory

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- The IP belongs to Naturiol Bangor Ltd
- Initial search by UK patent office has shown no competing patents and that there is freedom to operate
- Patenting process entered the PCT stage in September 2016
- Regulatory aspects are being addressed in various geographies

We are looking for exploitation **partners** in different **geographies** and **market** sectors

## Professional markets



## Home and garden



Thank you for your kind attention.

