



Commercial Opportunity

New Generation 'Green' Agrochemical

Researchers at Aston University have invented a new class of fungicide with strong antifungal activity against *Botrytis cinerea* and *Cladosporium herbarum*, and marked activity against *Fusarium oxysporum* and *Alternaria brassicicola*. Aston's Business Partnership Unit is now actively seeking partners to commercialize this highly promising new generation 'green' agrochemical.

Highlights

- New class of fungicides with no comparable products available
- Strong activity against major crop pathogens
- Synthesized in a 2-step process, so economically viable
- Non-toxic and biodegradable

Background

Fungal pathogens cause major losses of agricultural and horticultural crops worldwide. Without the use of crop protection products, overall crop yields would be around half their current levels. However, of some 1,000 pesticides recently evaluated by the EU, just 26% were re-registered, with many withdrawn due to health and environmental concerns. There is therefore an urgent need for a new generation of 'green' agrochemicals that are non-toxic, biodegradable, and highly selective in their modes of action.

Previous research at Aston identified just such a fungicide, a natural compound called 12-oxo-phytodienoic acid (12-oxo-PDA), which shows strong antifungal activity. However, it is only present in very low amounts in plants, and its synthesis in the laboratory involves a time-consuming and complex 14-step synthesis, making it economically unviable.

The Compounds

Researchers at Aston have now developed a simpler molecular mimic of 12-oxo-PDA with enhanced antifungal activity. This compound can be synthesized in a 2-step process, making it economically viable as a 'green' agrochemical. Significantly, the compound is non-toxic, biodegradable, and highly selective.

The compound shows strong antifungal activity towards two major pathogens which cause extensive damage: grey mould (*Botrytis cinerea*), and *Cladosporium herbarum*, one of the most common airborne pathogens found on herbaceous plants, textiles, rubber, paper and foodstuffs. The compound also exhibits marked antifungal activity against *Fusarium oxysporum* and *Alternaria brassicicola*, both major crop pathogens.

Intellectual Property Protection

These compounds are the subject of a UK patent application:

<i>Title</i>	<i>Application Number</i>	<i>Priority Claimed</i>	<i>Our Ref</i>
Antimicrobial agent	GB 0910856.4	June 23, 2009	PAT-2009-002

Further Information

Further information can be made available and commercial discussions commenced on entering into a non-disclosure agreement.

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