



Armigard: Eco-Friendly Biopesticide Formulation for Agriculture Insect Pest Management

PATENT NO. PI2019000063

ISSUE

10 DALAM NEGERI

Guna pelbagai taktik jual kepada petani

Racun perosak haram penuh pasaran gelap

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Eksklusif

Ada pihak yang masih membawa masuk produk berkekenan dari luar negara sebelum dipasarkan segelintir pengusaha dan pedagang alat pertanian tertentu di seluruh negara.

Hasil maklumat diterima Utusan Malaysia, ada pihak yang masih membawa masuk produk berkekenan dari luar negara sebelum dipasarkan segelintir pengusaha dan pedagang

Sumber

berani menjualnya menerusi media sosial," ujarnya.

Sementara itu, Menurut Pengurus Suara Tani Malaysia, Mohd. Sharwan Soban, 31, racun sedemikian termasuk yang dibawa masuk dari China dan Thailand seperti racun Siput Gondang dan racun cap tengkorak begitu popular dalam kalangan petani di Perlis kerana harga murah serendah RM4 sepoket malah berkesan.

"Tauke-tauke kedai selalunya menjual racun tersebut secara sembunyi, produk terlarang ini tidak disimpan di premis mereka. Letak di tempat lain dan apabila ada pelanggan ingin membelinya, barulah barangan tersebut diambil.

"Ini antara sebab pihak pe-



BEFORE Armigard



AFTER Armigard

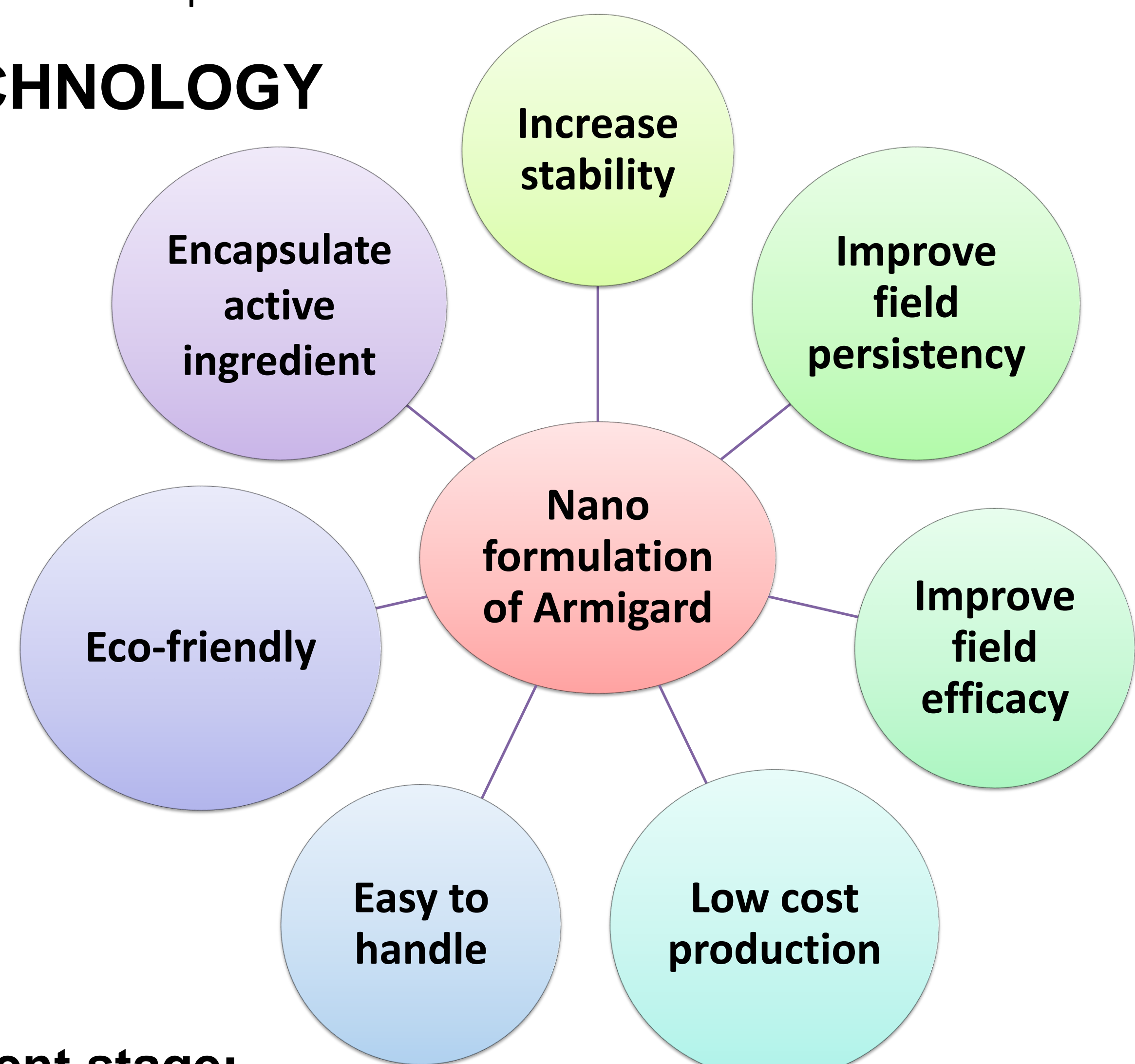
CURRENT ISSUES

1. Chronic use of illegal pesticide in Cameron Highlands, Hulu Langat and Sungai Besar (Utusan Malaysia, 5th December 2018)
2. Illegal pesticide use rampant in Cameron Highlands, toxins entering water supply. (The Stars, 4th April 2018)
3. Insecticide use in cabbage pest managements in the Cameron Highlands, Malaysia- (Crop Protection, June 2004)
4. AVA banned high pesticide vegetables from Cameron Highland and JB <http://www.zaobo.com.sg/news/singapore/story/20160924-669882>

PROBLEMS WITH SYNTHETIC INSECTICIDES USE

1. Killing of non-target
2. Non bio-degradable
3. Environmental pollution
4. Chemical residual effects on harvested food
5. Resistance in pests

TECHNOLOGY



Current stage: TRL 7 (Demonstration of Prototype)

ADVANTAGES

- Environmental friendly
- Simple preparation
- Commercial viable
- Low cost production
- Target specific chewing pests
- Produce organic products
- Efficient crop protection
- Integrated Pest Management defence

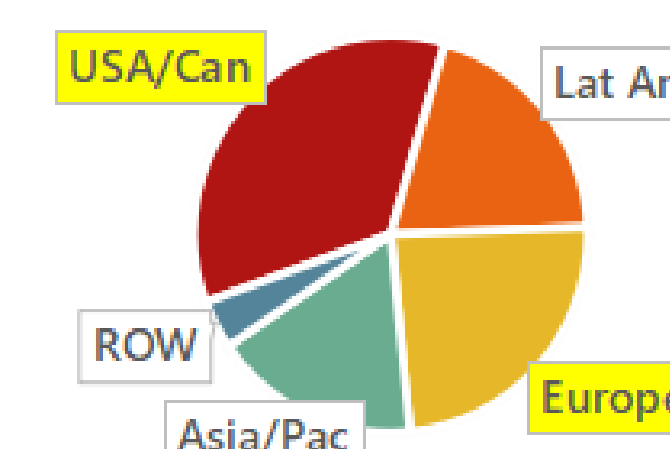
Properties	Armigard	Chemical Pesticide X	Biopesticide Y
Larvacidal (Immediate effect)	✓	✓	✓
Anti-feedant	✓	✓	✓
Non-toxic	✓	✓	✓
Environmental friendly	✓	✓	✓
Local product	✓	X	X
Plant-based (edible plant)	✓	X	✓
Low cost production	✓	X	X
Effect per one application	Two weeks	< 1 week	< 1 week

MARKET POTENTIAL

Market Size and Commercial Potential
Pesticide Sales in Malaysia (RM Million)

Product	2005	2006	2007	2008	2009	2010	2011	2012
Herbicides	223	331	361	358	344	352	363	388
Insecticides	65	99	100	101	119	120	123	129
Fungicides	25	27	27	26	27	26	25	26
Rodenticides	15	16	16	17	17	19	19	20
TOTAL	328	473	504	502	507	517	530	563

2015 Biopesticide Market



Biopesticides market in Malaysia is projected to reach USD 5.95 million by 2021, at a CAGR of 13.2% from 2016 to 2021

Globally, the use of biopesticides is increasing steadily by 10% every year.



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