Welcome to Iris Group

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Iris Polymers

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Bio-compostable Plastic

In Agriculture & Horticulture

Business Segments

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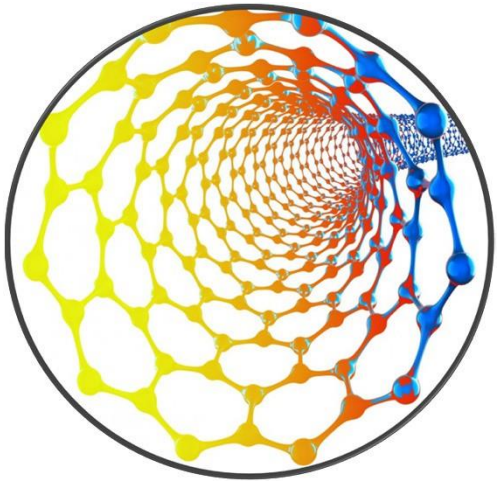
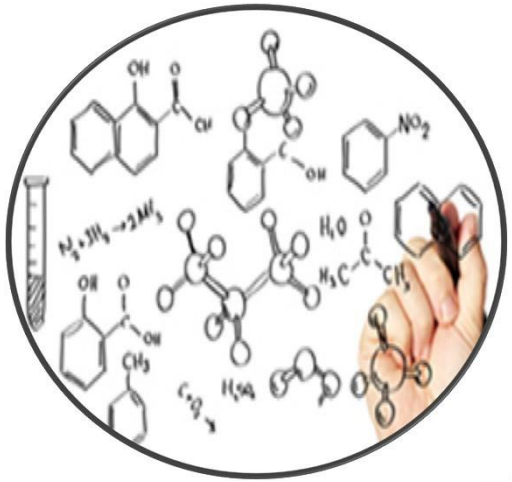
Biopolymers



Functional Polymers



Basic Research

What is Compostability?

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- Bio-Compostable polymer
- Undergoes degradation by biological processes during composting.
- Yield CO_2, water, mineral salts & new biomass.
- Leave no visible, distinguishable or toxic residue.

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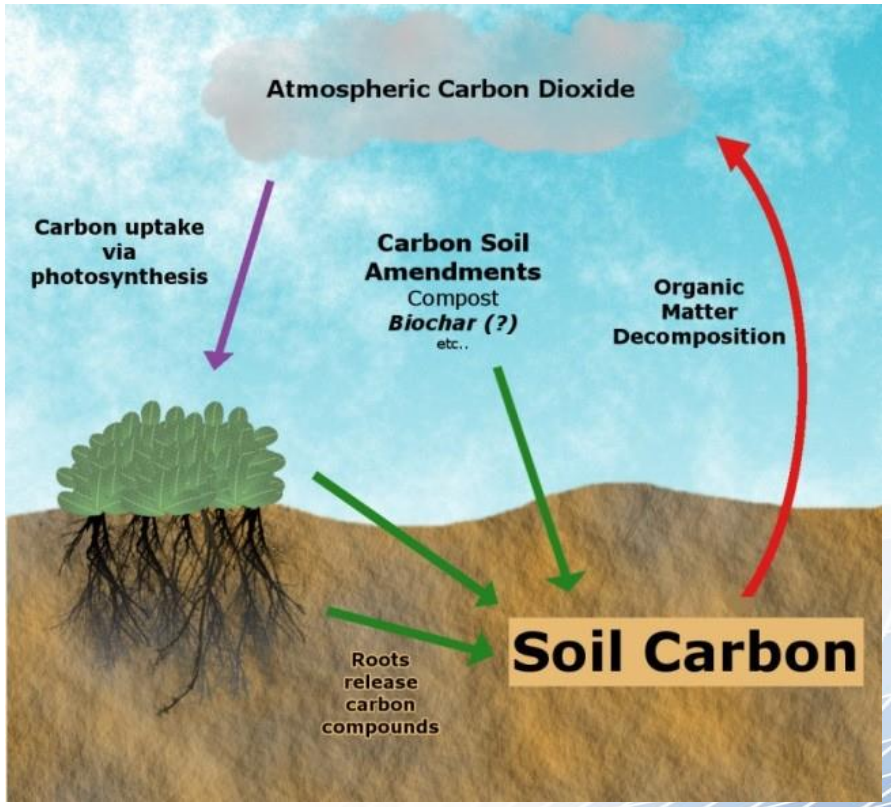
Agricultural Applications using Biopolymers

- Mulching
- Nursery bags
- Safety covers
- Poly house Film / Cover Film / Silage Film
- Clamps & Fasteners in Horticulture



Biodegradability - Enriches the organic matter

Plastic Mulch Film: Risk of Air/ Land Pollution & Infertile Land

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- Increased accumulation in rural areas.
- Too thin and usually heavily contaminated by soil and foreign materials hence difficult to recycle.
- Wrong disposal practices- Mostly burying in the soil/ burning/ disposing them at the open fields or in landfills with serious negative consequences for the environment.
- The cost of removing from the soil and cleaning this material is prohibitively high so mostly goes inside the soils & remains as it is for hundreds of years.
- Use as alternative fuel for energy recovery by incineration is very costly practice hence not practical.
- Reduced production, polluted soil: The real price of PE- based mulch films…..

Conventional Plastic V/s Compostable Plastic Mulch

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Air Pollution & Environmental Damage

Burnt

Biodegrades | Composts in Biomass

Conventional Plastic V/s Compostable Plastic Mulch

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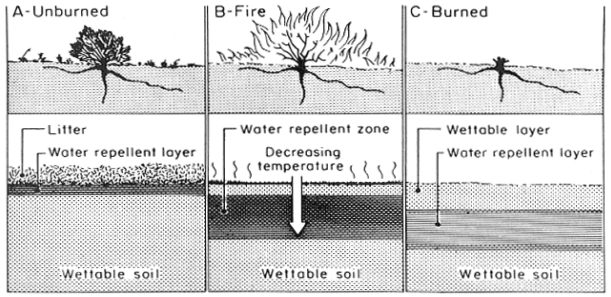
Land Pollution & Impact on Fertility



Effect on soil:
Increase in water repellent layer

Gradual reduction of soil fertility over the period

Doesn't need to be removed after the crop cycle.

In Soil, fully converted by microorganisms in water, CO_2 and biomass, without leaving any harmful plastic residues.

Conventional Plastic V/s Compostable Plastic Mulch

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Labour

Labour intensive

Manual Removal

No Labour Required

Ploughing

Reduced production, polluted soil: The real price of PE-based mulch films

Compostable mulch film

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- Easily processable on conventional Blown Film Extrusion plants without anymodification.
- Do not biodegrade too quickly as Mulch film during their protective life on the surface of the field.
- However, they do biodegrade steadily once ploughed into the soil after use.
- Do not affect fertility of soil. In fact bio-composts & increases the fertility of soil.
- Less sensitive to humidity in turn variation of weather, making it therefore more durable

Highlights -Biodegradable & Compostable Mulch film

- Stable while use, good disintegration in soil afterploughing under.
- Cost-efficiency: No recollection and disposal of the film, reductionof thickness.
- Superior water resistance.
- High strength and tear resistance.
- High weed suppression.
- Earliness of fruits due to increased soil temperature.
- Wide range of applications for various crops and climate conditions.

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Compostable mulch film

Mulch is used in commercial crop production

Planting

After 11 days

After 80 days

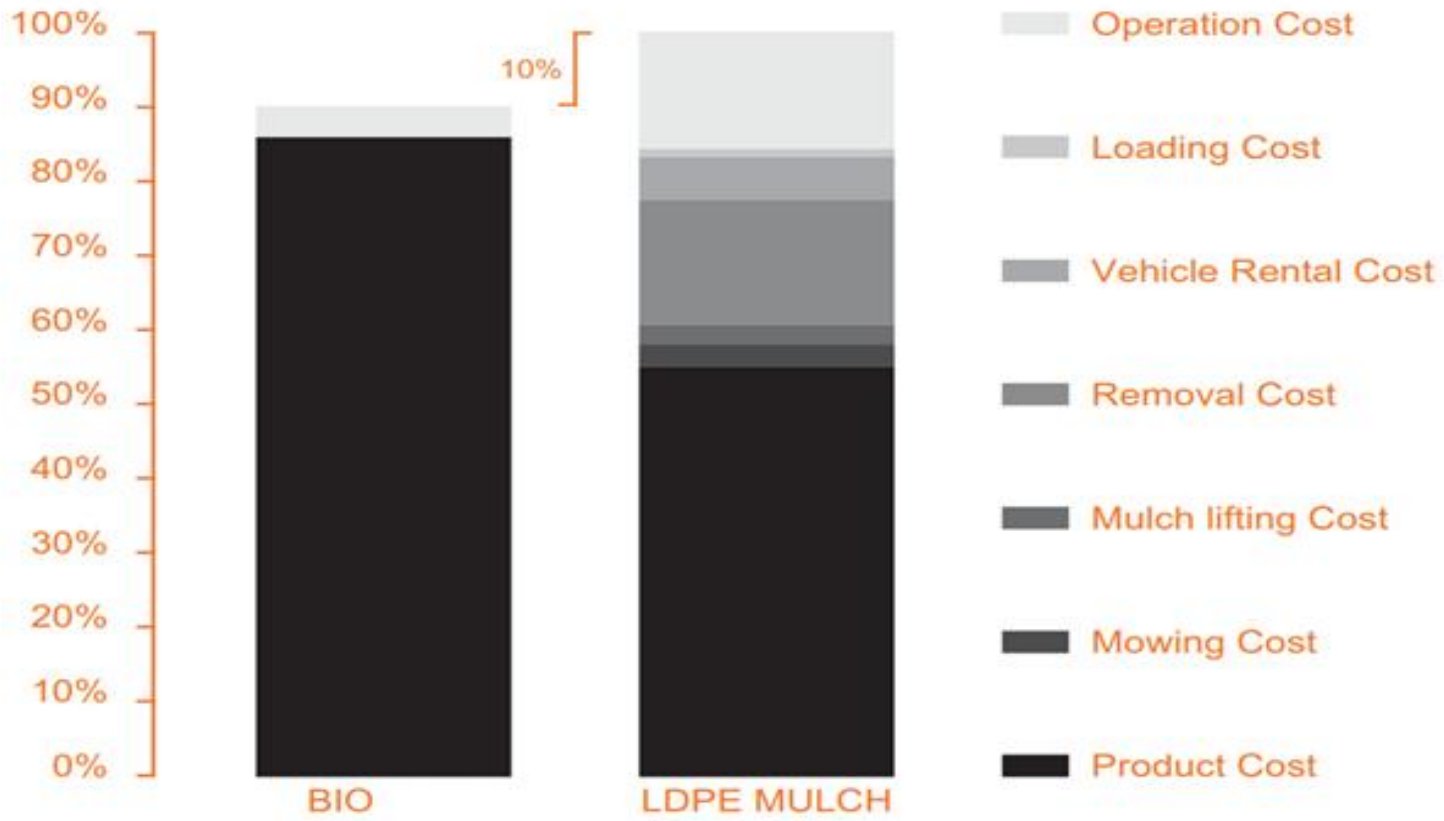
After 90 days

Advantages of using **Iris Bio mulch film**

- Improved agricultural production.
- Increased financial return to farmers.
- Improved environmental management.

All the Facts

COST COMPARISON: BIO MULCH VS. LDPE MULCH



Horticulture

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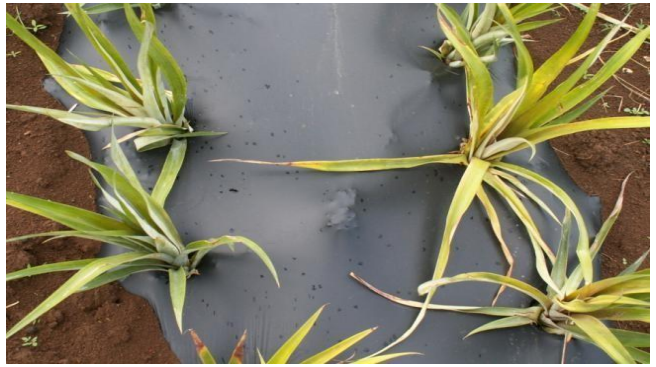

- Clamps and fasteners support plant shoots on a bar.
- Stiff and Elastic **Bio** -polymer offers a practical alternative to plastic clamps

Nursery bags

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Banana

Tree Species

- Biodegradable and 100% Compostable.
- No need to discard bag during transplantation
- Good breathability gives proper air and moisture for root development.

Safety Covers

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Covers open for
Aeration/
With Holes

Biodegradable
(Breathable)

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Summary

Conventional plastic mulch film

- Accumulation in the soil affects the fertility.
- Reduction in crop yield.
- Environmental and Land pollution.

Biodegradable mulch film

✓Sustainable & Eco-friendly alternative.

✓Retain the fertility of soil.

✓Cost and time effective solution – No recollection & Disposal of the film.

- Conventional Plastic mulch films cause a considerable waste disposal problem. Perhaps a major limitation to commercial uses of plastic mulches is the disposal of the plastic film after use, which causes an environmental pollution problem.
- Thus, Bio compostable mulch films supports a sustainable agriculture in a world of growing food demands by conserving soils and increasing crop yields.

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