

Photo selective Visible Light of Linear Low Density Polyethylene/ Titanium Dioxide Films using for Green House



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SUN LIGHTS



- ✓ The process of creating food for the subsistence of plants



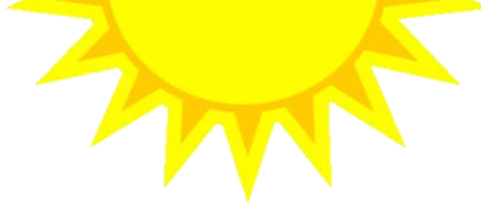
- ✓ Provide oxygen to the atmosphere



- ✓ Reduce carbon dioxide



- ✓ Required for plant growth

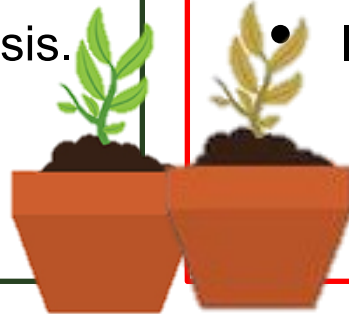


**Visible light
(390-800 nm)**

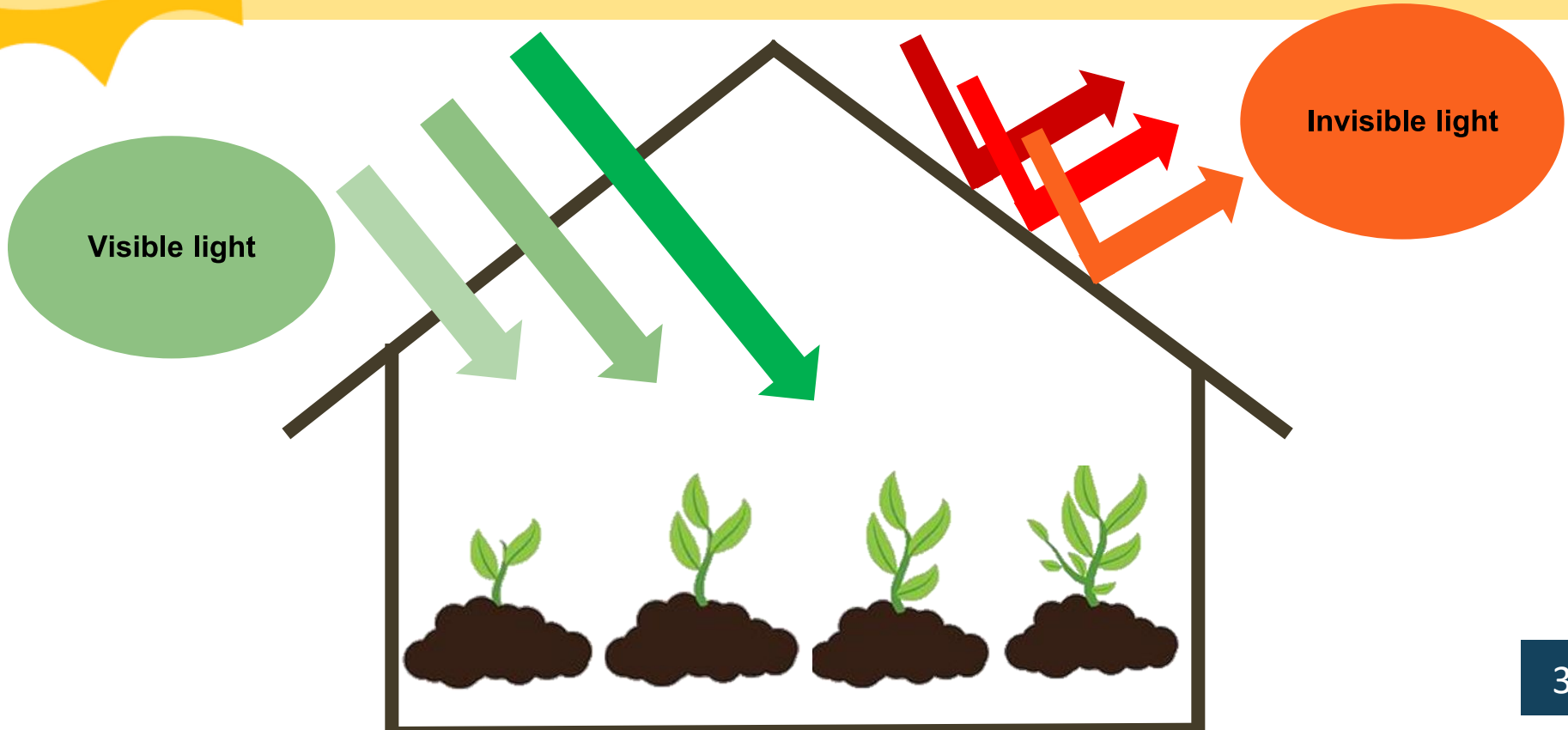
- It involves the response of plants to light called phototropism
- Promotes germination of seeds.
- It is important for photosynthesis.

**Invisible light
(190-390 nm)**

- It is a plant to inhibit the growth of plants
- Brunt area
- Insect problem



PHOTOSELECTIVE FILMS FOR GREEN HOUSE



OBJECTIVE

To study the effects of TiO_2 in LLDPE on the Photo-selective properties



MATERIALS



Titanium Dioxide (TiO₂)

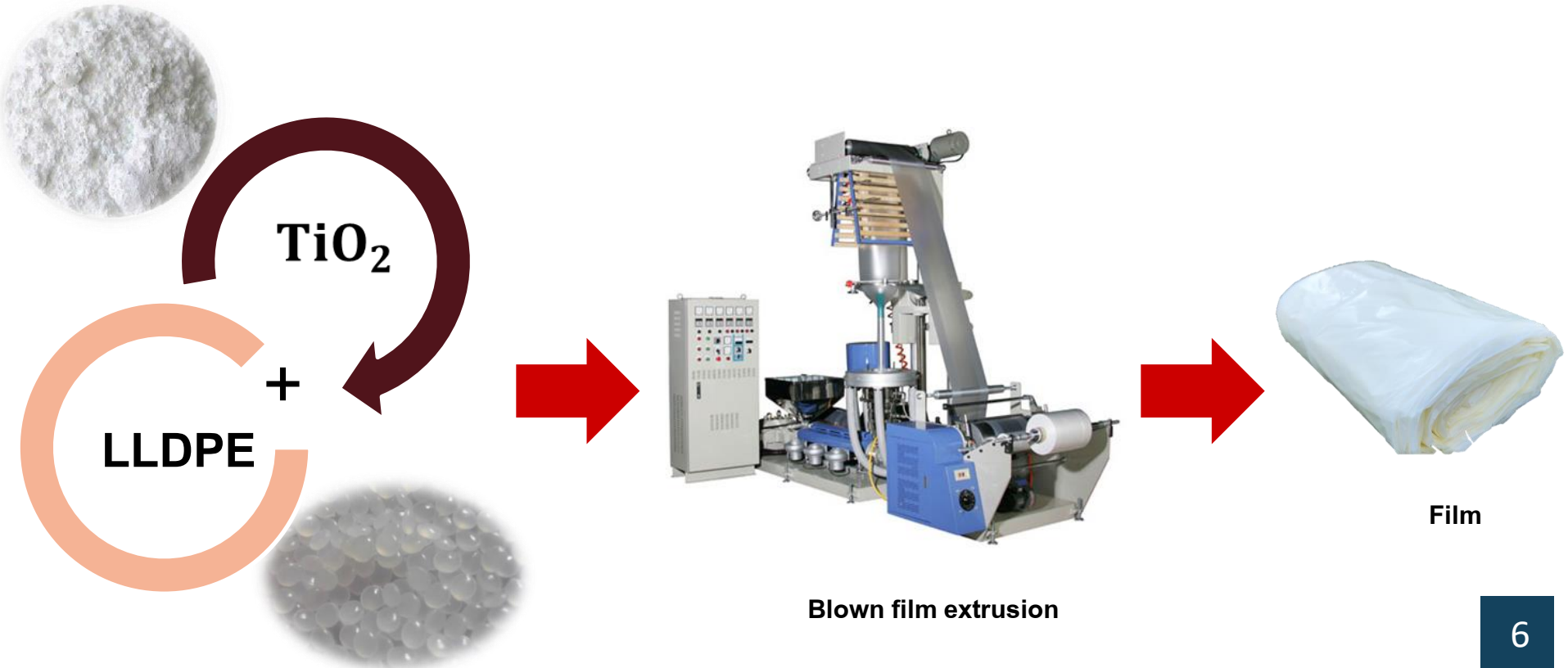
- ✓ **Whiteness**
- ✓ **Photo-selective**
- ✓ **Inexpensive**



LLDPE

- ✓ **Can produce thin film without tearing.**
- ✓ **Resistant to high penetration.**

METHOD



TESTING

1.

Optical transmission
characteristic

2.

Growth greenhouse
experiments

RESULTS

Optical transmission characteristic

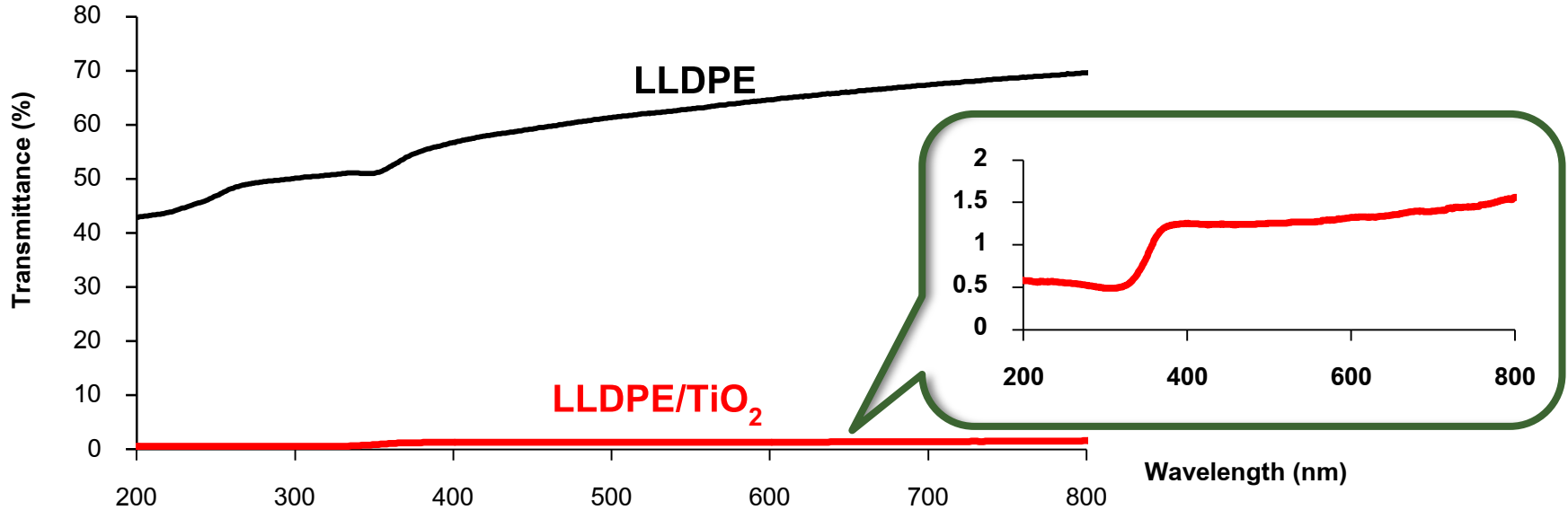


Fig 1. LLDPE film and LLDPE TiO₂ with of UV-vis spectra.

RESULTS

Growth greenhouse experiments

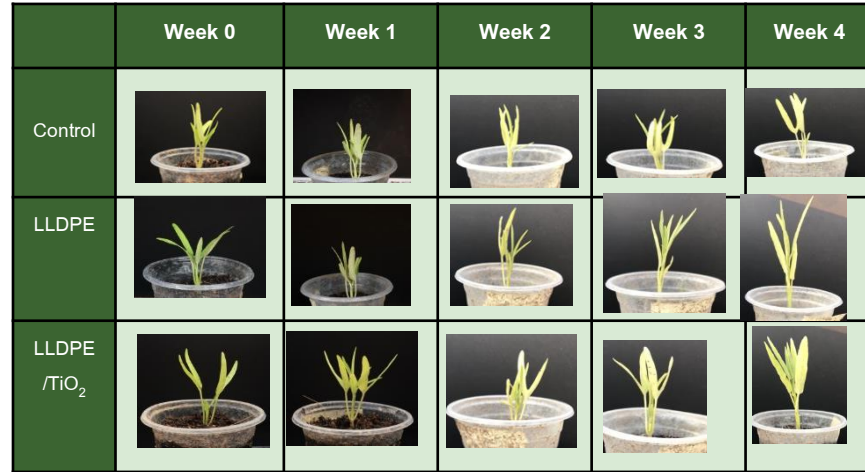
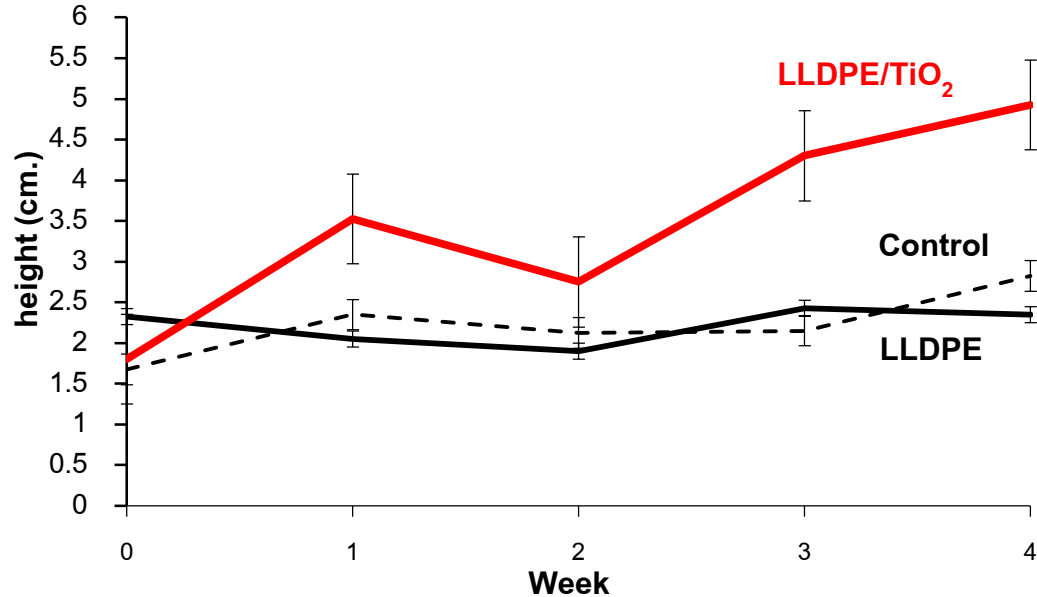


Fig 2. The relationship between plant height and duration.

CONCLUSION



The film can selective visible light transmission to use photosynthesis.

References

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- [2] Fa W., Wang J., Yang F., Wang F., Yue B., Gao Y., Li D., Zheng Z.(2015). TiO₂-Kaolin-PE Composite Film. A Study Based on Photocatalytic Degradation and Biodegradation
- [3] Liu G., Li Y. F., Yan F. Y., Zhao Z., Zhou L. C., Xue Q. J.(2005). Effect of Nanoscale SiO₂ and TiO₂ as the Fillers on the Mechanical Properties and Aging Behavior of Linear Low-Density Polyethylene/Low-Density Polyethylene Blends. Raven, Peter H., et.al., 2008, P. 152.

Thank You

