

# INDUSTRIAL FABRICS AND POLLINATORS

When growing fruits, vegetables, and flowers, it is no secret that the good bugs, the pollinators, are a welcome part of our greenhouses, high tunnels and open fields. We were recently asked how to balance shade fabrics and pollinator activity to optimize crop growth and production. Here are two articles and a study that helped us answer the question.



*Improving Pollination Outcomes Under Netting*



*Sun Or Shade? Which Is Best For The Bees?*

## Where Pollinator Needs and Shade Cloth Come Together:

- Temperature Regulation: Extreme heat can reduce pollinator activity
- Protection from harsh weather: Heavy rains or winds can make it hard for pollinators to access plants
- Controlling Seasonal Changes: Extended blooming season provides pollinators sustenance over longer periods of time
- Habitat: Shade cloth hung correctly can be a place for pollinators to nest
- Pest Management: Netting can keep bees close to crops needing pollination while keeping other pests away.

## Some things to consider when deciding what shade cloth or other covering to use:

- Does the covering provide the right light so bees can find their way?
  - Clear film: Needs to allow UV transmission. Bees need the UV part of the light spectrum to locate plants
  - Insect netting: Allows PAR Transmission. Higher PAR values mean more of the full light spectrum is available for pollinators to “see”
- Are pollinators protected from birds or other predators?
  - Apparent Opening Size or Pore size: Keeps bees in vicinity of flowers or fruit needing pollination while keeping pests away
- Is there enough air flow for plants and bees to prevent excess humidity and provide bees ease of movement?
  - Air permeability/air porosity: Prevents high humidity and helps regulate temperatures for plants and bees

## Measuring Different Fabrics for Utility with Pollinators

Some Key Fabric Measurements For Pollinators		Knitted or Woven Shade Fabrics	Insect/Bird/Hail Netting	PolyFilm	Greenhouse/Vent Curtains
Air Permeability	ASTM D 737	X	X		
Apparent Opening Size	ASTM D 4751	X	X		
Shade Factor	AATCC TM 148	X	X	X	X
Transmission of Visible Light UV Transmission	ASTM D 1003		X	X	X