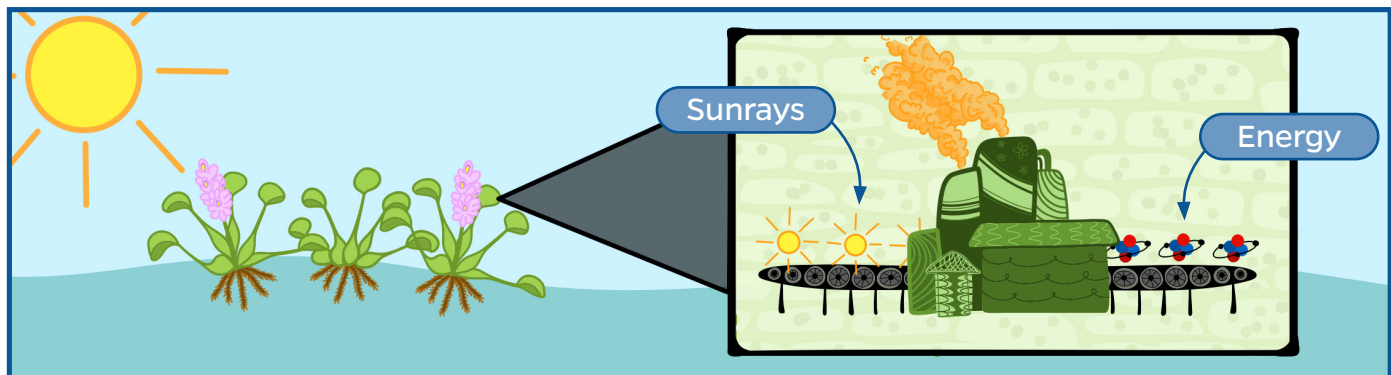


HOW DO AQUATIC HERBICIDES WORK?

FOUR COMMON WAYS AQUATIC HERBICIDES WORK IN PLANTS

Aquatic herbicides are a **helpful tool** when it comes to **controlling problematic plants** in our waterways. They are designed to target a **specific plant part** and prevent it from growing.



All plants are little factories that use sunlight to make their food so they can grow. This process is called photosynthesis. The first step in photosynthesis is to harvest sunlight, and turn it into energy that can be used by the plant. This is done when the green pigments in the leaves (chlorophyll) absorb the sun's rays. This energy is converted to electrons that race through the leaf in a very specific way, creating a lot of chemical energy that powers the plant.

There are currently **17 herbicides** registered by the U.S. Environmental Protection Agency for use in Florida's waters. These aquatic herbicides work in **four common ways**:

PHOTOSYSTEM 1 INHIBITORS

These PS1 herbicides work like a magnet to pull tiny electron particles off their regular path. These electrons get confused and can't do their job. Energy then builds up in the wrong place and the cells explode.

ENZYME INHIBITORS

Enzyme inhibitors work like a lock and key. They attach to enzymes and block them from converting sugar into energy for the plant. When enzymes are blocked, energy is not converted and the plant stops growing.

CAROTENOID INHIBITORS

Carotenoid inhibitors sneak into the plant and stop carotenoids from collecting the extra sunlight. The plant doesn't realize the carotenoids are stopped by the herbicides, so the chlorophyll continues to process the sunlight energy and becomes overwhelmed.

SYNTHETIC AUXINS

Synthetic auxins, also known as plant growth regulators, change the hormone messaging in plants. When these herbicides enter, they overwhelm the plant with different hormone messages until they get confused, which will ultimately stop the plant from growing.

TURNING SCIENCE INTO SOLUTIONS

352-392-9613 | caip@ifas.ufl.edu
plants.ifas.ufl.edu

UF | IFAS
UNIVERSITY of FLORIDA



CENTER FOR AQUATIC
AND INVASIVE PLANTS