

# Bioplastics



**GROW**  
**NEXT GEN**

# What are bioplastics?

- Made from renewable resources: agricultural feedstocks such as corn, soybeans, or sugarcane
- Extracted, modified, and used as the chemical building blocks called polymers
- Valuable sources of “new” carbon because renewable

# Bioplastic

- Components include a **biopolymer** (starch/sugar/protein), a **plasticizer** (glycerin) and a **solvent** (water)
- **Biopolymers**, such as gelatin, act as a binding material for bioplastic mixtures and hardening components.
- **Plasticizers**, such as glycerin, improve flexibility, allowing the bioplastic mixture to shape/mold easier, and reduce friction on the surface. Plasticizers work themselves into the polymer chains, acting like a buffer between the segments of molecules.



# Potential benefits of bioplastics and bioproducts

- **Reduced waste:** Designed to break down more easily, reducing the accumulation of plastic waste in landfills, oceans, and ecosystems.
- **Reduced carbon footprint:** Production emits fewer greenhouse gases compared to traditional plastics
- **Renewability:**
  - Traditional plastics rely heavily on fossil fuels while biobased materials use renewable resources.
  - More sustainable and reduces dependence on finite resources
- **Diverse applications:** Used in a wide range of applications, including packaging, textiles, construction, and even automotive components

# Bioplastics at Home



Bioplastics are all around us. Learn more about bioplastics at [biopREFERRED.gov](http://biopREFERRED.gov)

