## 'Teaching plants new tricks': How synthetic biology is reshaping agriculture

Aug 7-9, San Jose, California – the American Society for Plant Biology (ASPB) showcased the latest research in Plant Synthetic Biology. With topics ranging from modifying plants for desalination to reimagining carbon fixation.

## Tricksters

Plants provide food, fuel and medicinal compounds for society. Cultivation and extraction processes are well established but are under strain from environmental changes and population growth. In a series of visionary presentations leading members of the plant synbio community presented ways of teaching plants new tricks to address societal challenges.

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Several speakers talked about introducing alternatives to the Calvin-Benson-Bassham cycle into plants to improve the efficiency of carbon-fixation. The problem with most plants is the enzyme rubisco, which suffers from competitive inhibition of carboxylation by oxygen, and is often reported to be slow. When rubisco accepts O2 rather than CO2 it produces a toxic byproduct that is recycled through a set of reactions known as photorespiration. Reducing photorespiratory energy losses of <u>only 5% could result in a 500 million dollar annual savings</u> in US agriculture by 'expanding the pie' of carbon available to crops, boosting yields.

Read full, original article: Tricksters, Toolsters, Tinkerers, and Traders