How CRISPR gene editing is emerging as powerful tool to counteract climate change

CRISPR technology could be deployed in a wide array of food and agriculture applications. One major issue that CRISPR could fight is climate change, which threatens food security and biodiversity around the world.

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One of the main contributors to climate change is increased emission of carbon dioxide. One of the factors that leads to higher carbon dioxide emission is the transportation and logistics of food all around the world in order to meet rapidly increasing demand.CRISPR-Cas gene editing technology could contribute to resolving this problem since it can be used to enhance the yield and protein content of plants that are used for food, in addition to increasing their resistance to environmental conditions. These resistant, nutritious and more adaptive plants could then be produced closer to consumers. Locally grown production would minimize the need of food transportation.

Another big contributor to increased carbon dioxide emission is food waste, as up to 45% of food is wasted. CRISPR-Cas technology could replace current methods of food preservation based on chemicals and high-energy processes. CRISPR gene editing technology could be used to extend the shelf life of fruits and vegetables by enhancing their natural defense mechanisms against various pathogens. With a prolonged shelf life, food waste would be reduced.