

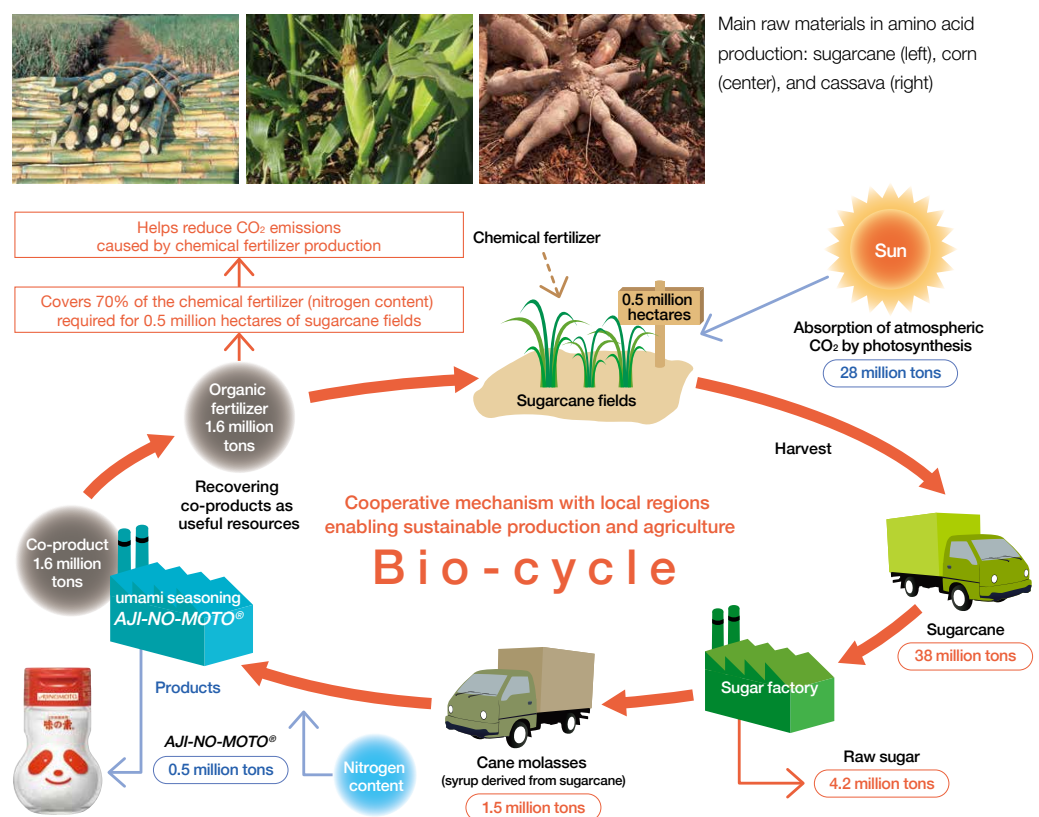
Sustainable Materials Sourcing

Reduction of impact in amino acid fermentation production

Approach
 GRI301-DMA

Bio-cycles contribute to sustainable agriculture

The Ajinomoto Group produces the amino acids through fermentation processes from crops that are easily available in each region. We use nearly 100% of the nutritionally rich by-products (co-products) that remain after extracting amino acids in the fermentation process as fertilizer and feed. We call this type of recycling-based amino acid fermentation process that enriches local agriculture and contributes to sustainable procurement a *bio-cycle*. Bio-cycles contribute to reliable supplies of food resources and sustainable agriculture, which is why we are introducing these cycles in our fermentation factories worldwide.



The chart assumes worldwide annual Group production of approximately 0.5 million tons of the umami seasoning AJI-NO-MOTO® using only sugarcane. The figures for sugarcane grown and sugar production are commonly used global figures. The figures related to resources used for producing AJI-NO-MOTO® are based on actual statistics from the Group.

If fermentation were not used to produce amino acids...



[1] Based on an average extraction of glutamate of 2.24 grams per 100 grams of *kombu* kelp
 [2] Based on an average extraction of glutamate of 0.14 grams per 100 grams of ripe tomatoes

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Approach

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Performance

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Resource-saving fermentation technologies

Leveraging our proprietary leading-edge bioscience and fine chemical technologies, the Ajinomoto Group has been working diligently over the years to develop efficient, resource-saving fermentation technologies.

One example of a resource-saving fermentation technology is a technology that reduces raw material input and energy use to enhance fermentation productivity. Another example is a technology that employs rice husks, wood chips, and other unused locally available biomass as energy sources. These technologies help secure food resources while reducing the use of raw materials, water, and carbon emissions in production.

Adoption of resource-saving fermentation technologies

As of fiscal 2019, we have adopted raw material and energy reduction technologies at 79% of our plants using resource-saving fermentation technologies to produce amino acids. We will continue to develop and adopt this technology as one measure to achieve a 24% reduction in Scope 3 greenhouse gas emissions by fiscal 2030 (based on fiscal 2018 levels), a target approved in April 2020 by the Science Based Targets Initiative.