

Meiji Holdings Co., Ltd.

March 29, 2023

Immediate Release

Efforts to Contribute to Sustainable Dairy Farming #2

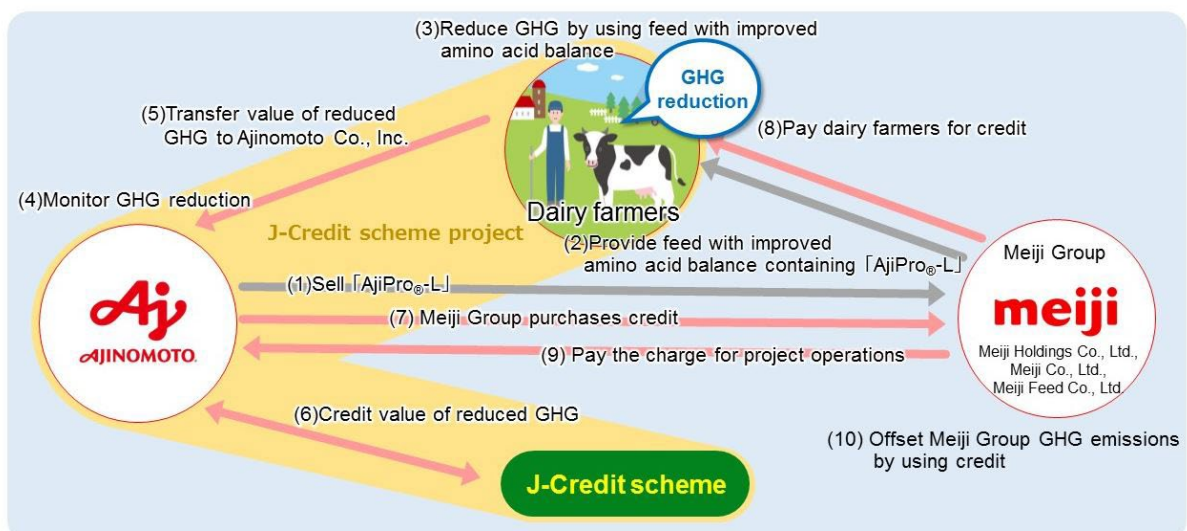
Launched initiatives to reduce greenhouse gas in dairy industry in March 2023

The Meiji Group and Ajinomoto Co., Inc. started a collaboration to realize sustainable dairy farming

Converting greenhouse gas reductions in dairy farming into carbon credits that will be a revenue source for dairy farmers

The Meiji Group, which includes Meiji Co., Ltd. (President and Representative Director: Katsunari Matsuda), and Ajinomoto Co., Inc. (“Ajinomoto Co.”) (President & Chief Executive Officer: Taro Fujie) have started collaborating to create a business model using the J-Credit Scheme\*1 in dairy farming and the dairy business. The J-Credit Scheme will realize to reduce greenhouse gas emissions (GHG)\*2 and to create economic value.

Three participants with different industry perspectives collaborate to form Japan’s first business model based on J-Credit Scheme considering the economic benefit to dairy farmers. Those participants are 1) the Meiji Group, which has a responsibility to ensure the stable provision of dairy products to consumers, 2) Ajinomoto Co., which can supply feed that helps reduce nitrous oxide (N<sub>2</sub>O), a known GHG, and 3) the dairy farmers being required to reduce GHG. On March 15, 2023, this collaborative effort was registered as an official project under the J-Credit Scheme, the GHG emissions trading platform recognized by the Japanese government.



## **Summary of business model based on the J-Credit Scheme**

This business model is the result of a successful collaboration between the Meiji Group and Ajinomoto Co.. The Meiji Group has been supporting dairy farmers over the years. Using the cultivated business support structure, the Meiji Group and Ajinomoto Co. collaborated to promote the use of amino acid balance feed with using *AjiPro*<sup>®</sup>-L.

Providing amino acid balance feed with *AjiPro*<sup>®</sup>-L can reduce N<sub>2</sub>O emissions, a GHG derived from cow manure that has nearly 300 times the greenhouse effect of CO<sub>2</sub>. Of the five GHG reduction methodologies\*<sup>3</sup> for agriculture defined by the J-Credit Scheme, this is the first project registered based on a method of providing feed with improved amino acid balance.

GHG emission reductions achieved by dairy farmers adding *AjiPro*<sup>®</sup>-L in feed are converted to credits based on the J-Credit system by Ajinomoto Co., and the Meiji Group then purchases those credits from Ajinomoto Co. Trading credit value equivalent to the volume of GHG reduction is paid to the dairy farmers which will be a new revenue source for dairy farmers. For the Meiji Group, this allows us to appropriate an amount of emissions equivalent to the GHG emissions purchased through the J-Credit Scheme (carbon offset). In January 2023, started working with Hokusho Farm (Representative Director: Yukio Sato) in Nemuro, Hokkaido and began using feed based on this business model.

The Meiji Group will work on increasing the number of farms adopting this business model and would like to help Japan's dairy industry reduce GHG emissions and support dairy farmers.

### **Value for dairy farmers**

- This method improves feed and thus can reduce the upfront costs by eliminating the facility investments for manure treatment or costs to transport manure.
- Feeding improved amino acid balance leads to the conservation of the global environment reducing N<sub>2</sub>O while maintaining milk volume.
- The use of feed with improved amino acid balance helps increase milk productivity and improve feed efficiency. This enables farmers to maintain milk volume while reducing feed costs.
- Credits purchased by the Meiji Group are paid to farmers which will be a new revenue source.

### **Value for the Meiji Group**

- Initiatives that result in supporting dairy farming will promote stable procurement of dairy ingredients in the future.
- Manufacturers collaborated to create a business model using the J-Credit Scheme as global environmental conservation efforts by dairy farmers and the dairy industry. These efforts will promote GHG emission reductions for the entire industry.
- This is the first step in the dairy industry by the Meiji Group and will lead toward achieving carbon neutrality.

### **Value for Ajinomoto Co.**

- By creating a new business model using J-Credits, which reduces GHG emissions based on amino acids and creates economic value, Ajinomoto Co. can contribute to realizing a sustainable dairy industry.
- This will promote an understanding of the importance of amino acid nutrition for dairy cattle and the usefulness of *AjiPro*<sup>®</sup>-L, and lead to increased demand.

### **Outlook**

Decarbonization in response to global warming is a pressing issue.\*<sup>4</sup> GHG emissions produced by dairy farming total some 13.86 million tons in Japan (CO<sub>2</sub> conversion), of which roughly 44.5% (6.17 million tons [CO<sub>2</sub> conversion]) comes from dairy cattle.\*<sup>5</sup> GHG derived from living organisms is difficult to reduce without technological innovation. Thus, on a global scale, technology development and validation related to GHG reductions are being developed rapidly. Also need to create frameworks for dairy farmers to adopt such technology without any difficulties.

The Meiji Group believes that many dairy farmers participate in this business model and collaborate with corporations and organizations possessing the know-how to help reduce the methane in cow burps. These expanded initiatives will lead to further reductions in GHG emissions. Through these efforts, the Meiji Group aims to increase the sustainability of dairy farming and the entire dairy industry.

### **Comments from the Meiji Group**

In addition to our efforts to reduce GHG emissions through this initiative, the issues of achieving sustainable dairy farming are multifaceted. The Meiji Group believes our mission as a top dairy manufacturer is to challenge ourselves to develop new methods of reducing GHG emissions. As one of those efforts, we began working to create a business model using the J-Credit Scheme. We will validate this project and expand the number of participating dairy farmers. We will take on various challenges along our entire supply chain as we strive to reduce GHG emissions for the whole dairy industry. This includes initiatives related to cow burps, which have a significant impact on the environment.

### **Comments from Ajinomoto Co.**

The Ajinomoto Co. Group hopes to contribute to GHG reduction and sustainable dairy farming through the power of amino acids. As one of our efforts, we have started collaborating with the Meiji Group to create a new business model that combines GHG emission reductions using *AjiPro*<sup>®</sup>-L with the J-Credit system. *AjiPro*<sup>®</sup>-L is the feed additive which can improve amino acid balance in feed for dairy cattle. We will work with various stakeholders to expand our efforts by bringing together our mutual strengths and thus contribute to developing the dairy and livestock industries.

## Meiji Group GHG reduction goals (compared to 2019)

The Meiji Group aims to achieve carbon neutrality by 2050.

Scope 1, Scope 2 (in-house emissions): 50% reduction by 2030, net zero by 2050

Scope 3 (Indirect emissions outside the company such as production, sourcing and transportation of raw materials, and transportation and disposal of products): 30% reduction by 2030, net zero by 2050

See Meiji Group sustainability information for details.

<https://www.meiji.com/global/sustainability/caring-for-the-earth/climate-change.html#position-on-climate-change>

## References

### Ajinomoto Co., Inc.

Location: Chuo-ku, Tokyo

Established: December 1925

Member of the Board, Representative Executive Officer, President & Chief Executive Officer (CEO): Taro Fujie

Businesses: Seasonings, Nutritional and Processed Foods, Solutions & Ingredients, Frozen Foods, Amino Acids for Pharmaceuticals and Foods, Bio-pharma service, Functional Materials, and others

Number of employees (consolidated): 34,198 (as of March 31, 2022)

Ajinomoto Co. Website: <https://www.ajinomoto.com/>

### Feed with improved amino acid balance, *AjiPro®-L* which can improve amino acid balance in feed for dairy cattle.

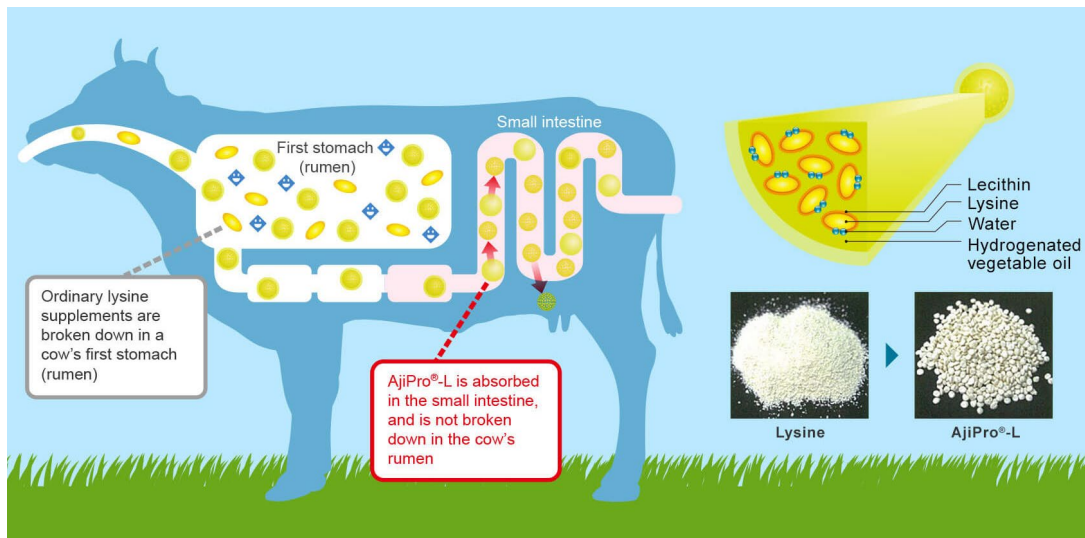
A lysine formulation for dairy cattle feed sold by Ajinomoto Co. since 2011. Normally, lysine is digested in the cow's first stomach, which make it difficult for the amino acid to be used as a nutritional supplement. However, Ajinomoto Co.

succeeded in using its proprietary manufacturing technology to

coat the lysine, allowing it to reach the small intestine where it can be digested and used as nutrition. This product improves milk productivity and feed efficiency backed by solid scientific findings. Accordingly, the product has the largest market share of lysine formulation for dairy cattle (based on Ajinomoto Co. research) and is used worldwide.

[https://www.ajinomoto.com/innovation/action/ajipro\\_l](https://www.ajinomoto.com/innovation/action/ajipro_l)





- \*1 **J-Credit Scheme:** A scheme through which the government certifies as credits the amount of CO<sub>2</sub> emissions reduced through the adoption of energy-saving equipment, the use of renewable energy, and the amount of CO<sub>2</sub> absorbed through appropriate forest management. This scheme integrates the domestic credit scheme and the offset credit scheme in a developmental manner, and is operated by the government. Credits generated through the J-Credit Scheme can be used for various purposes, including achieving the goals outlined in the Keidanren Carbon Neutral Action Plan as well as for carbon offsetting (Reference: J-Credit Scheme website).
- \*2 **Greenhouse Gas (GHG):** An atmospheric gas with heat-absorbing characteristics (infrared rays). Increases in GHG causes surface temperatures to rise, making GHG a main cause of global warming and the resulting extreme weather. The main GHG increasing as a result of human activities are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and CFCs. The magnitude of the greenhouse effect varies depending on the gas. For example, CH<sub>4</sub> is said to have a greenhouse effect 25 times that of CO<sub>2</sub>, and N<sub>2</sub>O about 300 times that of CO<sub>2</sub> (Reference: Ministry of the Environment website).
- \*3 **Five methodologies for GHG reduction in the agriculture sector:** The J-Credit Scheme operated by the Ministry of the Environment and the Ministry of Economy, Trade and Industry allows the registration of five validated methodologies for the agriculture sector. Those methods are 1) Conversion of disposal management system for livestock excreta, 2) Biocarbon addition to mineral soil in cropland/grassland, 3) Abatement of N<sub>2</sub>O emissions from cow, pig and broiler excreta disposal by utilizing low-protein feed, 4) Mitigation of N<sub>2</sub>O emissions from tea land soil by applying chemical fertilizers containing nitrification inhibitor, and 5) Extension of the midsummer drainage period in paddy rice cultivation. This Meiji Group initiative is the first project to put 3) into practice in dairy farming.

\*4 Climate change caused by global warming is causing severe abnormal weather in various places, and is greatly impacting food production. In response, efforts to reduce levels of the GHG emissions that cause global warming and efforts towards a decarbonized society by aiming for net zero emissions by 2050 are urgent issues facing the agriculture, forestry, fishery, and food industries.

\*5 Based on "The Situation of Livestock and Dairy Farming (in Japanese)" by the Ministry of Agriculture, Forestry and Fisheries of Japan.

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