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## Sustainable Production and Ethical Consumption

Learning from Nishi–Awa's Buckwheat Farmers –Lasting 400 Years Practices–

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## **Our Perspective**

Understanding producers to support sustainable production activities



In March 2025, reports emerged in Japan indicating that some rice farmers were earning as little as 10 yen per hour, raising significant social concern. **Objectives and Scope** 

- Understanding the challenges faced by producers.
- Act as a producer and promote understanding
  - Conduct fieldwork and other activities to understand the issues
  - Mutual understanding through actual production support and supply activities

#### Understanding sustainable production and consumption practices

Social Background	<ul> <li>Over 400 years of agricultural culture at risk of survival.</li> <li>Native buckwheat cultivation on "Slope Land Agriculture System" in "GIAHS".</li> <li>Economic imbalance between production activities and consumption</li> </ul>
Producer's point of view	<ul> <li>Communication with producers through farm work</li> <li>Record of 400 years of processing methods for "buckwheat rice".</li> <li>Hearing about Nishiokada's thoughts in buckwheat cultivation and buckwheat rice production, which they have been lasting 68 years.</li> </ul>
Sustainable production	<ul> <li>Buckwheat cultivation, Growth analysis/ Taste evaluation.</li> <li>Nature positive, Classification of symbiotic species</li> <li>Next-generation resource preservation and food processing (buckwheat)</li> </ul>
Consumption activity, evaluation	<ul> <li>Social perspectives (Humanistic element · Social Impact)</li> <li>Economic perspectives (Pofitability)</li> <li>Nature Positive Perspectives</li> <li>Ethical Consumption Perspectives</li> </ul>

GIAHS: Globally Important Agricultural Heritage Systems.

#### Native buckwheat cultivation and the current state of cultivated land



83(Lower fields)

4,734m/25a



Calculate the number based on the number of buckwheat plants

318,593 stock

(All by hand)

438.21kg/25a



Buckwheat cultivation making rows (traversing)

4.7km, all by hand

Sowing buckwheat seeds (handwork)

32×10<sup>4</sup> seed sevenly

Buckwheat cultivation (handwork) 32×10<sup>4</sup> Plants, carrying on

backpacks

 $\blacktriangleright$  Not use machinery, 4.7 km of ridges were created by hand,

> 320,000 seeds were sown, and 400 kg of buckwheat was harvested.

## Characterization of native buckwheat growth and fixed-point observation in Nishiokada's farm

Variation in native buckwheat growth and temperature (2024)





Cultivation period is as 80 days, grows in temperature difference of 20°C or more.

#### Biodiversity in terms of buckwheat characteristics and vector insects in Nishiokada's farm

Anther
 Filament
 Stigma
 Calyx
 Pollen



3 1)Husk 2)Cuticle 3)Albumen 4)Calyx 5)Embryo

Micrograph of starch grains in buckwheat seeds (400x)



CV: Kitawase

Native buckwheat has unevenly sized starch grains



Sakata seed

Processed properly to add originality to flavor and texture



Nishiokada's

Unlike native varieties, starch grains are large, a characteristic of native buckwheat in Nishiokada's (diversity)

Over 400 years of cultivation (Stress tolerance) Rich taste unlike cultivated varieties Resilient to environmental changes

Diversity of insects flying in Natural predators (No pesticides) Coexistence with ecosystem

Rich ecosystem with 20 major insect species and more than 16 other species

	Mating insects (insect pollinators)
Hymenoptera	(1)Apis cerana, (6)Polistes japonicus
Flyformes	(3)Phytomia zonata、(16)Eristalinus quinquestriatus、 (17)Xanthogramma sapporense、(18)Villa limbata
Lepidoptera	<ul> <li>(7) Cyrestis thyodamas, (8) Eurema mandarina, (9)</li> <li>Nymphalidae sp., (15) Neptis philyra, (2) Ypthima argus, (11) Pieris rapae</li> </ul>
Coleoptera	(12)Gametis jucunda
	Predatory insects
Hymenoptera	(14)Vespidae sp.
	Damaging insects
Hymenoptera	(5)Spodoptera litura
Coleoptera	(19)Epilachna vigintioctopunctata



Biodiversity Conservation Promoting sustainable agriculture

## Sustainable processing of native buckwheat in Nishiokada's farm (preservation and food processing)



# Production and processing lossesand the value of the sales price (Ethical Consumption?)

500



### Summary

- Native buckwheat in Nishioka's has a history of over 400 years. It is a valuable surviving document that records the agricultural culture before the "Encyclopedia on Agriculture" compiled in 1697. Its historical and cultural value is extremely high, and the agricultural system is worthy of "Globally Important Agricultural Heritage Systems." We were educated and nurtured by the producers.
- This native buckwheat cultivation and processing method has been inherited as a region-specific technique and continues to be a sustainable production activity. Properly understanding the value of these traditional farming methods and developing them with local communities will promote ethical production and consumption.
- However, under the current production system, there is a remarkable imbalance between costs and selling price. Previously, the area did not receive a reasonable evaluation, but with its recognition as a "Globally Important Agricultural Heritage Systems," prices rose 10 times, and the value of the area was reevaluated through the dissemination of information. While ethical consumption is being promoted, the value differential is still a major issue and cannot be easily resolved through price shifting.
- For almost 70 years, Mr. and Mrs. Nishiokada have continued to farm with uniqueness, which they take as their "pride of life. Sympathizing with their beliefs will help foster "Nature Positive" values that emphasize living in harmony with nature.
- In order to pass on this valuable local resource to the future, it is essential to preserve and pass it on through scientific research and hands-on experience by students. We believe that such efforts will help spread the philosophy of ethical consumption throughout society and lay the foundation for a sustainable future.

Ethical consumption, as we see it, is a consumption activity in which both producers and consumers can benefit. We will engage in activities to promote equal consumption activities based on mutual cooperation.

# Thank you very much for your interest