

Production and Distribution of Potatoes in the Kagoshima Island Areas

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Abstract

Potato production is important in Japan, especially in island areas. Potato production and price have increased in the Kagoshima island area. The red soil on the islands allows the production of healthy looking potatoes. Potatoes grown in island areas are produced during the mainland non-growing season and are sold as fresh potatoes.

Broadly, there are two types of potato collectors in the islands, Japan Agricultural Cooperatives and purchase brokers, who compete with each other in terms of prices and services. Each collector plays a role in the potato market.

Keywords: distribution, JA, Nagashima Island, Okinoerabujima Island, potato, purchase broker, Tanegashima Island, Tokunoshima Island

Introduction

Potato varieties such as sweet potato, potato and taro are important crops in Japanese agriculture and are grown in remote areas and island areas. Potato farmers face many challenges in regards to potato cultivation and marketing. However, there are only a few previous studies on potato production and distribution in island areas (IMURA *et al.* 2015, SAKAI 2016, SAKAI and NAITOH 2016).

In the current paper, I describe the current state of potato production and distribution in the island area of Kagoshima Prefecture.

Potato Production and the Preferences of Consumers Pertaining to Potatoes in Japan

Main potato production areas in Japan

Potato production is the highest among vegetable crops in Japan and is important not

only for Japanese agriculture but also for Japanese consumers. The main prefectures that produce potatoes are Hokkaido, Nagasaki and Kagoshima (Fig. 1, 2). These prefectures are geographically distant from the main markets such as Tokyo and Osaka.

Hokkaido Prefecture

Hokkaido Prefecture accounted for 82.5% of potato production in Japan during 2014. In Hokkaido, 44%, 24%, 14% and 18% of potatoes are grown for starch, food processing, food applications and seeds and other uses, respectively. Potatoes for use in food products are harvested from summer to fall and are sold until April.

Nagasaki and Kagoshima prefectures

Nagasaki and Kagoshima prefectures produce potatoes for food applications and market an image of fresh produce. Nagasaki Prefecture accounts for 4.4% of potato production in Japan, with potatoes shipped from May to June. Kagoshima Prefecture yields 4.1% of total potato production, and potatoes are shipped from January to May. Both prefectures ship fresh potatoes during the period in which Hokkaido cannot ship fresh potatoes.

Preferences of consumers for potatoes in Japan

Japanese consumers value esthetically pleasing produce and show preference to potatoes grown in red soil. Consequently, potatoes grown in red soil are the most expensive of all the potato varieties.

In addition, different types of potatoes are used for different purposes. The round type of potato is used for potato salad and croquettes due to its soft texture. The ellipse type potatoes are used for boiled dishes and soup because this type does not disintegrate during cooking.

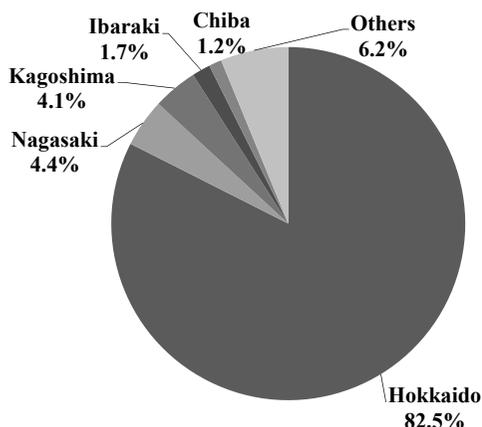


Fig. 1. Potato production in Japan.



Fig. 2. Map of Japan.

Potato Production in the Kagoshima Island Areas

Potato producing area in Kagoshima Prefecture has been increasing since the 1980s (Fig. 3). In Kagoshima Prefecture, potatoes are mainly grown in island areas (Fig. 4, Table 1). The potatoes produced on islands are generally shipped to the mainland.

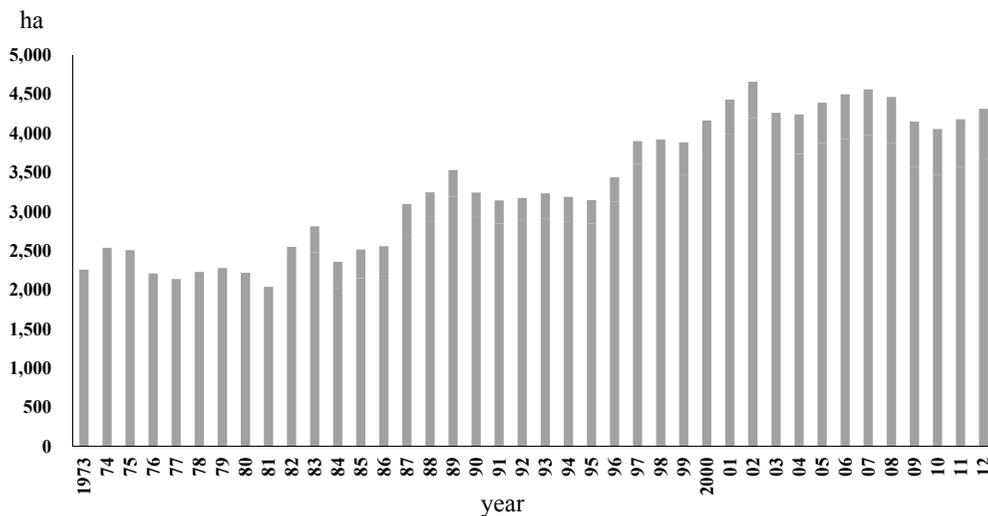


Fig. 3. Potato planted area in Kagoshima Prefecture.

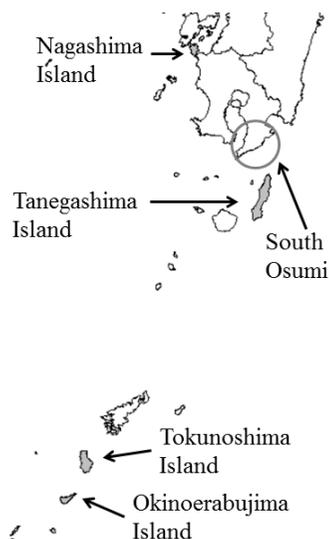


Fig. 4. Map of potato producing regions in Kagoshima Prefecture.

Table 1. Potato producing regions in Kagoshima Prefecture.

	Planted area (ha)	Yield (t)	Harvesting season
Tokunoshima Island	338	6,820	Feb.-Apr.
Okinoerabujima Island	1,052	14,780	Feb.-Apr.
Tanegashima Island	193	4,063	Feb.-Apr.
South Osumi	253	5,450	Mar.-Apr.
Nagashima Island	1,130	27,100	Apr.-May.
Others	1,444	33,487	—
Kagoshima Prefecture	4,410	91,700	—

During summer, it is difficult to grow vegetables in island areas because of strong typhoons and drought. In addition, the remoteness of island potato production areas poses an economic disadvantage because it is expensive and time-consuming to transport products off the islands. Therefore, farmers grow sugarcane and rear beef cattle in summer.

In winter and spring, it is too cold to grow vegetables and flowers on the mainland in Japan. However, because the island areas remain warm, farmers grow vegetables and flowers for the mainland. Because the soil type on islands is mainly red derived from coral limestone, farmers can produce fresh red soil potatoes during winter and spring. Therefore, the price of potatoes produced on the islands of Kagoshima Prefecture is more than the average price of potatoes in Japan (Table 2). Consequently, potato sales constitute approximately 70% of the vegetable crop sales in the Amami Islands.

Table 2. The price of potatoes in Tokyo Central Market.

	Japan		Produced in Kagoshima	
	Shipment quantity (t)	Price (JPY/kg)	Shipment quantity (t)	Price (JPY/kg)
2008	37,950	98	10,312	141
2009	41,662	119	8,629	160
2010	42,014	140	9,941	205
2011	44,276	168	12,589	233
2012	45,750	169	14,424	157
2013	48,889	112	14,281	110
2014	48,829	109	15,055	144
2015	49,797	124	11,339	211

Potato Distribution in the Kagoshima Island Areas

Potato distribution in the island areas is complex. Broadly, there are two types of potato collectors in the island areas: Japan Agricultural Cooperatives (JAs) and purchase brokers, who compete intensively with each other to collect potatoes.

JAs

JAs are large agricultural cooperatives, and almost every farmer in Japan is a member of a JA. JA branches are widely distributed throughout Japan. In the island areas, JAs collect almost half of the potatoes produced. Because every island contains a JA automatic potato sorting facility, the potatoes collected by JAs are shipped to the mainland after being sorted on

each island. JAs do not buy potatoes from farmers; they instead send the potatoes to market and receive sales commission from farmers.

So as to avoid competition among the islands, JAs coordinate the varieties of potatoes and shipping destinations. For example, on Tokunoshima Island, farmers mainly produce the round type of potatoes that are shipped to Nagoya, whereas Okinoerabujima Island produces the non-round type of potatoes, which are shipped to the south of Osaka.

Because JAs collectively constitute a large organization, they are responsible for a stable supply of potatoes to the wholesale markets. Therefore, JAs ships potatoes to markets as soon as they are received. However, continuous rain can delay the shipping of potatoes to the mainland. Because red soil is a hard clay type soil, farmers cannot harvest potatoes for a few days after a rainfall event. The option of JAs constructing a potato storage facility on the mainland is uneconomical because the facility would need to be huge and would only be used during monsoon.

Purchase brokers

There are approximately 5–20 brokers on each island. The brokers buy potatoes from farmers, which are then transported to the mainland. Brokers generally deal with relatively small numbers of potatoes. Because brokers have no sorting facilities on the islands, they sort the potatoes on the mainland. After sorting, brokers sell the potatoes to wholesalers or retailers.

Brokers engage in price competition while buying potatoes from farmers. If one broker buys at a high price, others have to raise their prices. However, there is no competition between JAs and brokers regarding price, whereas they do compete with each other to provide services to the farmers. Because JAs do not buy potatoes, competition with brokers relates to services such as potato collecting, supplying harvesting labor, speedy payment to farmers and technical advice.

As mentioned above, because the business scale of brokers is relatively small compared to JAs and that they are a private business, they can react rapidly to situations and behave opportunistically. If the market price is too low, some brokers refuse to buy potatoes from farmers, which consequently place farmers in a difficult situation. Other brokers adopt a strategy of buying potatoes at a low price and storing them in mainland facilities. Subsequently, during periods of continuous rain when JAs cannot supply potatoes, the brokers sell the stored potatoes to the markets at a high price. For wholesalers and retailers, brokers are useful when there is a shortage of potatoes. However, the behavior of brokers can sometimes lead to price volatility.

Future Problems

In the island areas of Kagoshima Prefecture, potato production and price have experienced continual increases. However, some problems that require solutions exist within potato production. First, there is a shortage of potato harvesting labor on the islands; therefore, securing laborers or the development of harvesting technology is an important issue for the continuation of potato production.

Second, potato consumption in Japan has been declining because of the decreasing and aging population and the greater participation of women in the workforce. The price of potatoes will decrease in future. To prevent price decline, efforts will be required to differentiate the products and increase their added value.

Acknowledgement

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