

CROPS AND VEGETABLES

About 8,000 years ago, the first cereal grains such as Emmer wheat, Einkorn wheat and barley were domesticated by ancient farming communities in the Fertile Crescent region. Three starchy cereal grains such as rice, maize, and wheat provide nearly 60 percent of total plant calories that humans consume. Vegetables may include foods derived from some plants that are fruits, flowers, nuts, and cereal grains, but exclude starchy fruits such as tomatoes and courgettes, flowers such as broccoli, and seeds as pulses.



The current scientific consensus, based on archaeological and linguistic evidence, is that rice was first domesticated in the Yangtze River basin in China.

Rice is the seed of the grass species *Oryza sativa* (Asian rice) or *Oryza glaberrima* (African rice, dry rice species). Rice, a monocot, is normally grown as an annual plant, although in tropical areas it can survive as a perennial and can produce a ratoon crop for up to 30 years.

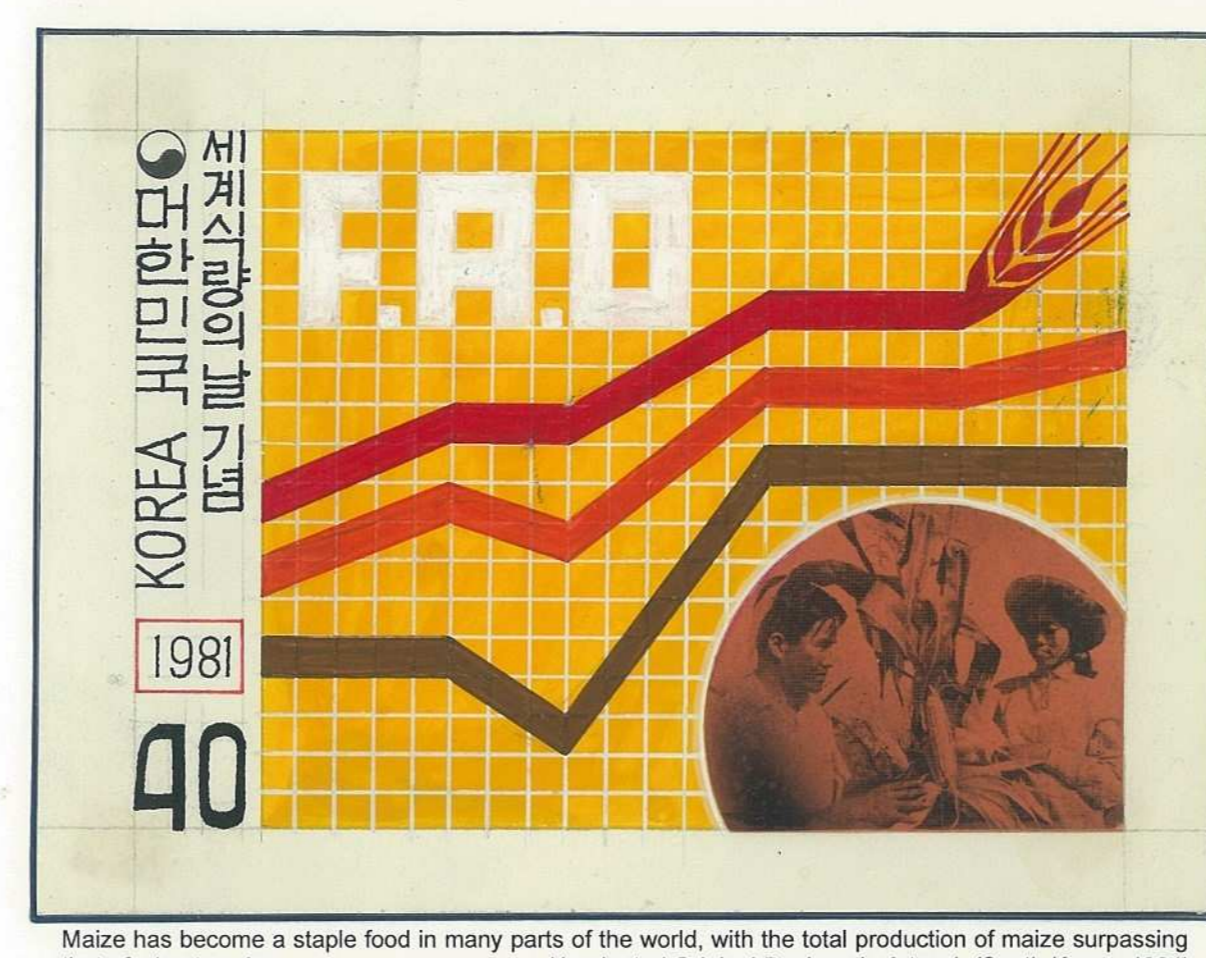
EXHIBIT PLAN

Title and Plan	1
1. Major Starchy Crops	5
2. Non-starchy Vegetables and Fruits	2
Total	8

As a cereal grain, rice is the most widely consumed staple food for a large part of the world's human population, especially in Asia.

Rice is the most important grain with regard to human nutrition and caloric intake, providing more than one-fifth of the calories consumed worldwide by humans.

1. Major Starchy Crops



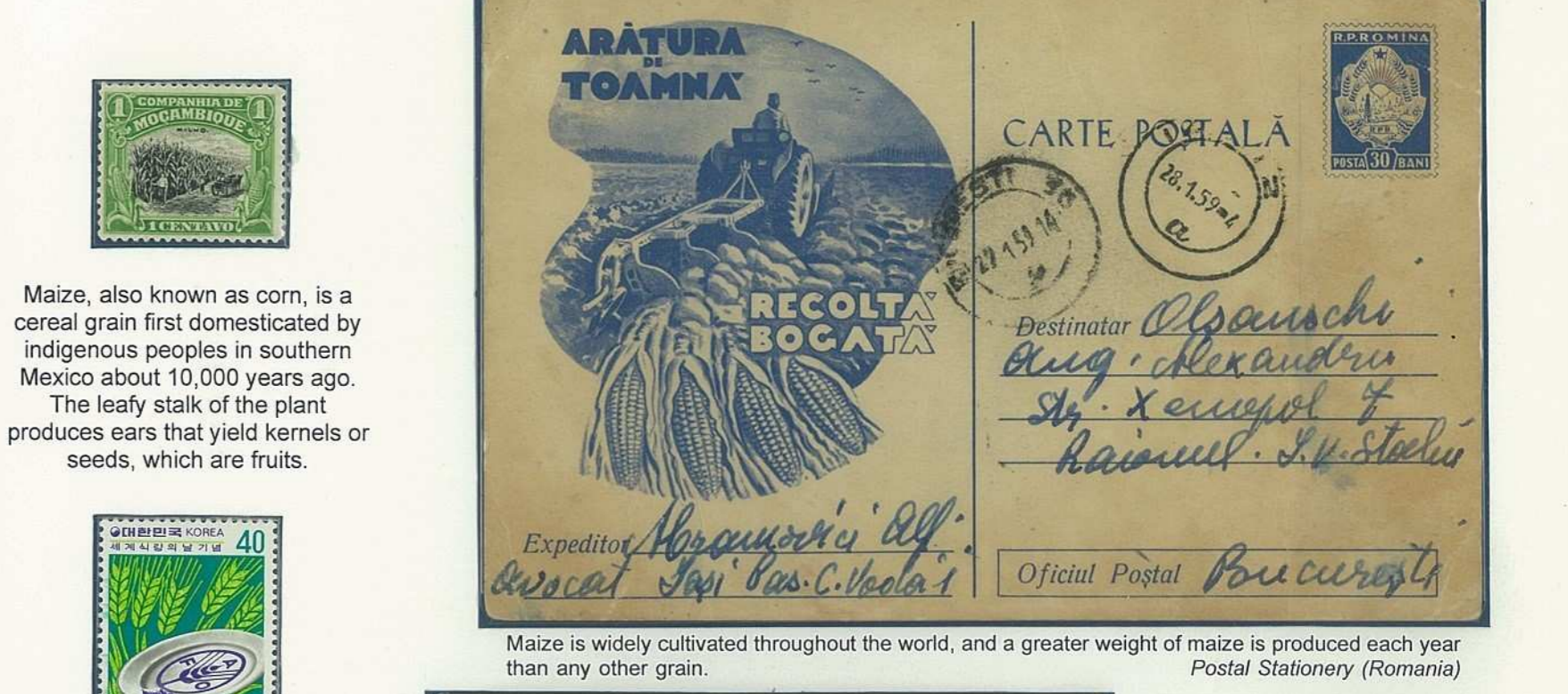
Maize has become a staple food in many parts of the world, with the total production of maize surpassing that of wheat or rice.

Maize is also used in making ethanol and other biofuels. The bioethanol is made by fermentation, mostly from carbohydrates produced in sugar or starch crops such as corn, sugarcane, or sweet sorghum.



The most maize is used for corn ethanol, animal feed and other maize products, such as corn starch and corn syrup.

The six major types of maize are dent corn, flint corn, pod corn, popcorn, flour corn, and sweet corn. Sugar-ripened varieties called sweet corn are usually grown for human consumption as kernels, while field corn varieties are used for animal feed.



Maize, also known as corn, is a cereal grain first domesticated by indigenous peoples in southern Mexico about 10,000 years ago. The leafy stalk of the plant produces ears that yield kernels or seeds, which are fruits.

Maize is widely cultivated throughout the world, and a greater weight of maize is produced each year than any other grain.

Maize is a major source of starch. Corn starch is a major ingredient in home cooking and in many industrialized food products. Maize is also a major source of cooking oil and maize gluten.

Before the 20th century, all maize harvesting was by manual labor, by grazing, or by some combination of those.

Maize is one of a number of species that grow wild in central and eastern Turkey and in adjacent areas.

Rye is a member of the wheat tribe and is closely related to barley and wheat.

While oats are suitable for human consumption as oatmeal and rolled oats, one of the most common uses is as livestock feed. Oats are a nutrient-rich food associated with lower blood cholesterol when consumed regularly.

Barley has been used as animal fodder, as a source of fermentable material for beer and certain distilled beverages, and as a component of various health foods.

Barley is not as cold-tolerant as the winter wheat, fall rye, or winter triticale, but may be sown as a winter crop in warmer areas of Australia and Great Britain. Barley has a short growing season and is relatively drought-tolerant.

Two-row barley has lower protein content than six-row barley, thus more fermentable sugar content. High-protein barley is best suited for animal feed. Mating barley is usually lower protein which allows more uniform germination, needs short steeping, and has less protein in extract that can make beer cloudy.

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1. Major Starchy Crops

Winter cereals are biennial cereal crops sown in the autumn. They germinate before winter comes, may partially grow during mild winters or simply persevere under a sufficiently thick snow cover to continue their life cycle in spring. Winter cereals are available for wheat, barley, rye, oats, and etc.



Wheat, Rye, Barley, and Oats



Winter cereals are harvested earlier than grains of the same type sown in springtime. In general, they have a much higher yield than spring cereals because they can use snow as moisture for growth.

Common bread wheat is commonly classified as hard or soft, red or white and winter or spring. As with all crops, the quality of the final product is heavily influenced by the genetics and the environment responsible for a given harvest.

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1. Major Starchy Crops

Barley is a major cereal grain grown in temperate climates globally. It was one of the first cultivated grains, particularly in Eurasia as early as 10,000 years ago. Barley is a highly resilient crop, able to be grown in varied and marginal environments, such as in regions of high altitude and latitude.



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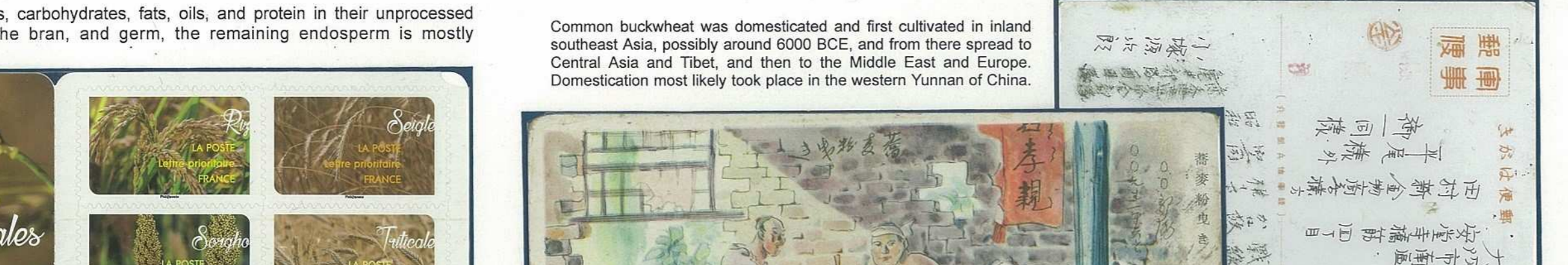
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1. Major Starchy Crops

Cereals are a rich source of vitamins, minerals, carbohydrates, fats, oils, and protein in their unprocessed form. When processed by the removal of the bran, and germ, the remaining endosperm is mostly



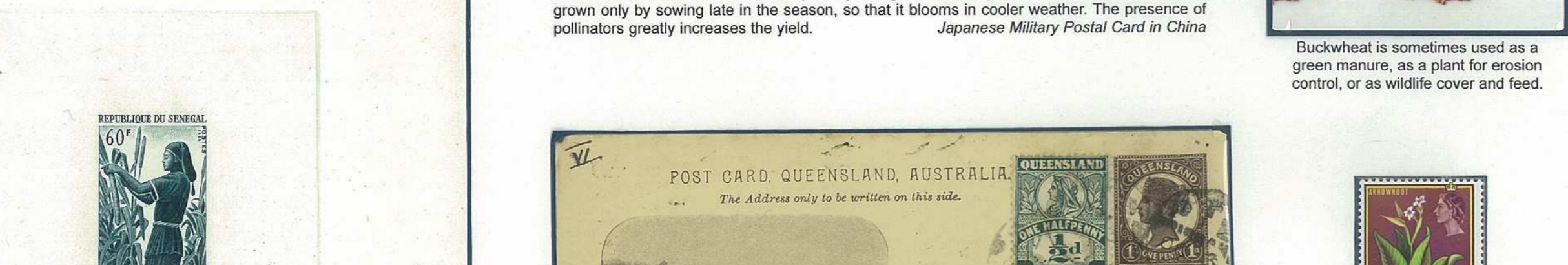
Rice, Rye, Sorghum, Triticale

Sorghum is a genus of flowering plants in the grass family Poaceae. Seventeen of the 25 species are native to Australia, with the range of some extending to Africa, Asia, Mesoamerica, and certain islands in the Indian and Pacific Oceans.



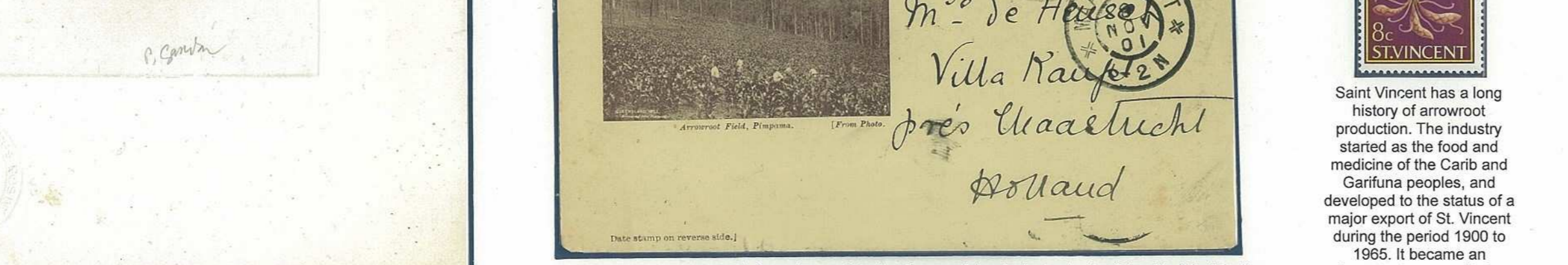
Buckwheat

Buckwheat, a short-season crop, does well on low-fertility or acidic soils, but the soil must be well drained. Too much fertilizer, especially nitrogen, reduces yields. In hot climates it can be grown only by sowing late in the season, so that it blooms in cooler weather. The presence of pollinators greatly increases the yield.



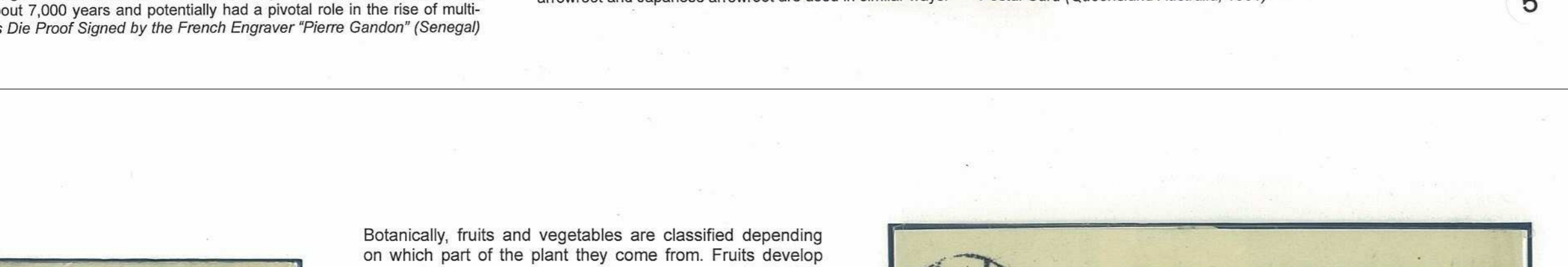
Millet

Millet is a group of variable small-seeded grasses, grown around the world as cereal crops for fodder and human food. Millets may have been consumed by humans for about 7,000 years and potentially had a pivotal role in the rise of multi-crop agriculture and settled farming societies. Archaic Die Proof signed by the French Engineer 'Théophile Candor' (Singapore)



Arrowroot

Arrowroot is starch obtained from the rootstock of several tropical plants, traditionally West Indian arrowroot, but also Florida arrowroot and tapioca from cassava, which is labeled as arrowroot. Polynesian arrowroot and Japanese arrowroot are used in similar ways.



Sweet Potato

Sweet potato has a long history of arrowroot production. The industry started as the food and medicine of the Caribbean and developed to the status of a major export of St. Vincent during the period 1900 to 1960. It became an important commodity in colonial trade in the 1930s.



Macadamia

Macadamias are native to New South Wales and Queensland, Australia. Compared with other common edible nuts, such as almonds and cashews, macadamias are high in total fat and relatively low in protein.



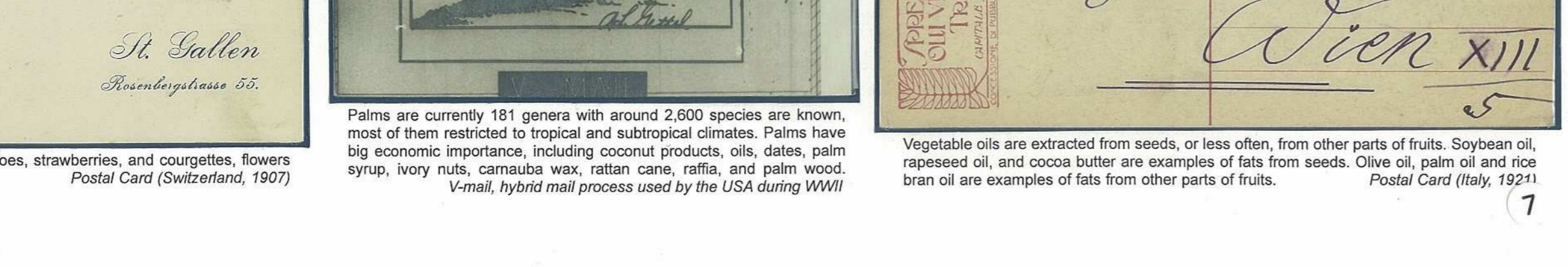
Beans

Beans are one of the longest-cultivated plants. Beans were an important source of protein throughout Old and New World history, and still are today. Beans can be cooked in many different ways, including boiling, frying, and baking, and are used in several traditional dishes throughout the world.



Peas

Peas and ractaries are the same species.



Apples

Apples have been grown for thousands of years in Asia and Europe and were brought to North America by European colonists.

1. Major Starchy Crops

Tubers are enlarged structures in some plant species used as storage organs for nutrients. Stem tubers form thickened underground stems or horizontal connections between organisms. Common plant species with stem tubers include potato and yam. Some

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Issued Stamp

The current scientific consensus, based on archaeological and linguistic evidence, is that rice was first domesticated in the Yangtze River basin in China.



Transplant Rice Seedlings
Variety (Misperforated Stamps, India)

Rice is the seed of the grass species *Oryza sativa* (Asian rice) or *Oryza glaberrima* (African rice, dry rice species). Rice, a monocot, is normally grown as an annual plant, although in tropical areas it can survive as a perennial and can produce a ratoon crop for up to 30 years.

Designer's Original Artwork (North Korea)



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As a cereal grain, rice is the most widely consumed staple food for a large part of the world's human population, especially in Asia.
Postal Card (Japanese Occupation of the Philippines, 1943)



Harvesting



Rice is the most important grain with regard to human nutrition and caloric intake, providing more than one-fifth of the calories consumed worldwide by humans.
Postal Savings Account (Japan, 1899)

1. Major Starchy Crops



Maize has become a staple food in many parts of the world, with the total production of maize surpassing that of wheat or rice.

Unadopted Original Designer's Artwork (South Korea, 1981)

Maize is also used in making ethanol and other biofuels.

The bioethanol is made by fermentation, mostly from carbohydrates produced in sugar or starch crops as corn, sugarcane, or sweet sorghum



The most maize is used for corn ethanol, animal feed and other maize products, such as corn starch and corn syrup.



The six major types of maize are dent corn, flint corn, pod corn, popcorn, flour corn, and sweet corn. Sugar-rich varieties called sweet corn are usually grown for human consumption as kernels, while field corn varieties are used for animal feed.

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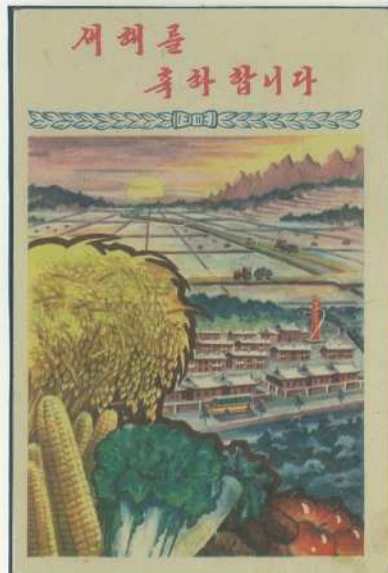


Registered Fancy Cover (USA)



Maize is widely cultivated throughout the world, and a greater weight of maize is produced each year than any other grain.

Postal Stationery (Romania)



Before the 20th century, all maize harvesting was by manual labor, by grazing, or by some combination of those.

Postal Card (North Korea)

Maize is a major source of starch. Corn starch is a major ingredient in home cooking and in many industrialized food products. Maize is also a major source of cooking oil and maize gluten.

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Wheat, Rye, Barley, and Oats

Booklet (Sweden)



Plate Proof (France)



Postal Card (Switzerland, 1918)

About 95% of wheat produced worldwide is common wheat, also known as bread wheat.



The archaeological record suggests that wheat was first cultivated in the regions of the Fertile Crescent around 9600 BCE.

Globally, wheat is the leading source of vegetable protein in human food, having a protein content of about 13%, which is relatively high compared to other major cereals but relatively low in protein quality for supplying essential amino acids.



Winter cereals are harvested earlier than grains of the same type sown in springtime. In general, they have a much higher yield than spring cereals because they can use snow as moisture for growth.

Telegram (Austria, 1908)



Common bread wheat is commonly classified as hard or soft, red or white and winter or spring/As with all crops, the quality of the final product is heavily influenced by the genetics and the environment responsible for a given harvest.

Postal Card (Queensland Australia, 1902)

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Barley was one of the first domesticated grains in the Fertile Crescent, an area of relatively abundant water in Western Asia, and near the Nile River of northeast Africa.

Wild barley ranges from North Africa and Crete in the west, to Tibet in the east. The remains were dated to about 8500 BCE.



Two-row barley has lower protein content than six-row barley, thus more fermentable sugar content. High-protein barley is best suited for animal feed. Maltng barley is usually lower protein which shows more uniform germination, needs short steeping, and has less protein in extract that can make beer cloudy.



Barley has been used as animal fodder, as a source of fermentable material for beer and certain distilled beverage, and as a component of various health foods. *Echo Advertising Postal Card (Japan)*



Since the Middle Ages people have cultivated rye widely in Central and Eastern Europe. It serves as the main bread cereal in most areas east of the French-German border and north of Hungary. *Postal Card (Portugal)*



Rye is a one of a number of species that grow wild in central and eastern Turkey and in adjacent areas.



Barley is not as cold tolerant as the winter wheat, fall rye, or winter triticale, but may be sown as a winter crop in warmer area of Australia and Great Britain. Barley has a short growing season and is relatively drought tolerant. *Postal Card (Switzerland)*



Rye is a member of the wheat tribe and is closely related to barley and wheat.



Oats are best grown in temperate regions. They have a lower summer heat requirement and greater tolerance of rain than other cereals such as wheat, rye, or barley.



White oats are suitable for human consumption as oatmeal and rolled oats, one of the most common uses is as livestock feed. Oats are a nutrient-rich food associated with lower blood cholesterol when consumed regularly. *Postal Card (Canada)*



1. Major Starchy Crops

Cereals are a rich source of vitamins, minerals, carbohydrates, fats, oils, and protein in their unprocessed form. When processed by the removal of the bran, and germ, the remaining endosperm is mostly



Rice, Rye, Sorghum, Triticale

Booklet (France)

Sorghum is a genus of flowering plants in the grass family Poaceae. Seventeen of the 25 species are native to Australia, with the range of some extending to Africa, Asia, Mesoamerica, and certain islands in the Indian and Pacific Oceans.



One species is grown for grain, while many others are used as fodder plants, either cultivated in warm climates worldwide or naturalized, in pasture lands.



Millet is a group of variable small-seeded grasses, grown around the world as cereal crops for fodder and human food. Millets may have been consumed by humans for about 7,000 years and potentially had a pivotal role in the rise of multi-crop agriculture and settled farming societies. Artist's Die Proof Signed by the French Engraver "Pierre Gandon" (Senegal)



Common buckwheat was domesticated and first cultivated in inland southeast Asia, possibly around 6000 BCE, and from there spread to Central Asia and Tibet, and then to the Middle East and Europe. Domestication most likely took place in the western Yunnan of China.



Buckwheat, a short-season crop, does well on low-fertility or acidic soils, but the soil must be well drained. Too much fertilizer, especially nitrogen, reduces yields. In hot climates it can be grown only by sowing late in the season, so that it blooms in cooler weather. The presence of pollinators greatly increases the yield.

Japanese Military Postal Card in China



Buckwheat is sometimes used as a green manure, as a plant for erosion control, or as wildlife cover and feed.



Arrowroot is starch obtained from the rootstock of several tropical plants, traditionally West Indian arrowroot, but also Florida arrowroot and tapioca from cassava, which is labeled as arrowroot. Polynesian arrowroot and Japanese arrowroot are used in similar ways. Postal Card (Queensland Australia, 1901)



Saint Vincent has a long history of arrowroot production. The industry started as the food and medicine of the Carib and Garifuna peoples, and developed to the status of a major export of St. Vincent during the period 1900 to 1965. It became an important commodity in colonial trade in the 1930s.

1. Major Starchy Crops

Tubers are enlarged structures in some plant species used as storage organs for nutrients. Stem tubers form thickened underground stems or horizontal connections between organisms. Common plant species with stem tubers include potato and yam. Some sources also treat root tubers such as sweet potato and cassava.

Booklet (Australia)
Imperforate Stamps (Russia)



Wild potato species can be found throughout the Americas, from the USA to southern Chile. Potatoes were domesticated approximately 7,000–10,000 years ago. Potatoes were introduced to Europe from the Americas in the second half of the 16th century by the Spanish. Today they are a staple food in many parts of the world and an integral part of much of the world's food supply. As of 2014, potatoes were the world's fourth-largest food crop after maize, wheat, and rice.



The origin and domestication of sweet potato occurred in either Central or South America. In Central America, domesticated sweet potatoes were present at least 5,000 years ago. The plant does not tolerate frost. It grows best at an average temperature of 24°C, abundant sunshine and warm nights. Annual rainfalls of 750–1,000mm are considered most suitable in growing season.



Sweet potatoes have few natural enemies; pesticides are rarely needed.



Postal Card (Belgium Congo)



The two main types of commercial grain crops are cereals and legumes. Well-known legumes, also called pulse, include alfalfa, clover, beans, peas, chickpeas, lentils, lupins, mesquite, carob, soybeans, peanuts, and tamarind.

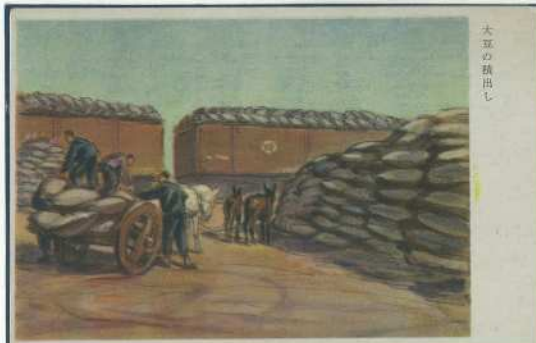
Newspaper Wrapper (Switzerland, 1917)



The peanut, groundnut, is a legume crop grown mainly for its edible seeds. It is widely grown in the tropics and subtropics, being important to both small and large commercial producers. It is classified as both a grain legume and, due to its high oil content, an oil crop.



Macadamias are native to New South Wales and Queensland, Australia. Compared with other common edible nuts, such as almonds and cashews, macadamias are high in total fat and relatively low in protein.



Beans are one of the longest-cultivated plants. Beans were an important source of protein throughout Old and new World history, and still are today. Beans can be cooked in many different ways, including boiling, frying, and baking, and are used in several traditional dishes throughout the world.

Japanese Military Postal Card in China

2. Non-starchy Vegetables and Fruits



Horticulture is the agriculture of plants, mainly for food, materials, comfort and beauty for decoration. In contrast to agriculture, horticulture does not include large-scale crop production or animal husbandry. Newspaper Wrapper (Switzerland)



Vegetables may include savory fruits such as tomatoes, strawberries, and courgettes, flowers such as broccoli and seeds such as pulses. Postal Card (Switzerland, 1907)

Botanically, fruits and vegetables are classified depending on which part of the plant they come from. Fruits develop from flowers of the plant, while the other parts of the plant are categorized as vegetables. And, fruits contain seeds, while vegetables can consist of roots, stems and leaves.



Overprinted 50C

Nearly one thousand species of plants with edible leaves are known. Leaf vegetables most often come from short-lived herbaceous plants, such as lettuce and spinach.



Palms are currently 181 genera with around 2,600 species are known, most of them restricted to tropical and subtropical climates. Palms have big economic importance, including coconut products, oils, dates, palm syrup, ivory nuts, carnauba wax, rattan cane, raffia, and palm wood. V-mail, hybrid mail process used by the USA during WWI



Root vegetables include both true roots such as carrots, tuberous roots and taproots, as well as non-roots such as tubers, rhizomes, corms, bulbs, and hypocotyls. Newspaper Wrapper (Switzerland)



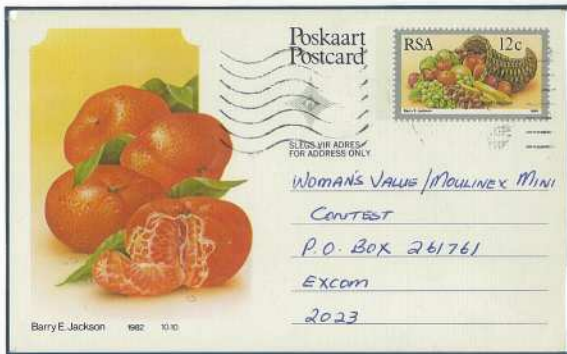
Vegetable oils are extracted from seeds, or less often, from other parts of fruits. Soybean oil, rapeseed oil, and cocoa butter are examples of fats from seeds. Olive oil, palm oil and rice bran oil are examples of fats from other parts of fruits. Postal Card (Italy, 1921)

2. Non-starchy Vegetables and Fruits



Oranges

Fruits normally mean the fleshy seed-associated structures of plants that are sweet or sour, and edible in the raw states, such as apples, bananas, grapes, lemons, oranges, pears, and strawberries.



The tangerine is a group of orange-colored citrus fruit consisting of hybrids of mandarin orange. Postal Card (South Africa)



The pineapple is indigenous to South America where it has been cultivated for many centuries. The introduction of the pineapple cultivation to Europe in the 17th century made it a significant cultural icon of luxury. Postal Card (Queensland Australia, 1900)



Many hundreds of fruits are commercially valuable as human food, eaten both fresh and as jams, marmalade and other preserves. Telegram (UK, 1952)



Apples have been grown for thousands of years in Asia and Europe and were brought to North America by European colonists. National Day Postal Card (Switzerland)



Peaches and nectarines are the same species.