

Pine Nuts (*Pinus*) Imported Into the United States

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Abstract — Annual published records of pine nuts (*Pinus*) or pignolias imported into the United States back to 1947 are reviewed here. Most imports, roughly as much as nine-tenths, are shelled. Pignolias imported from southern Europe are Italian stone pine (*Pinus pinea*). In recent years, quantities of shelled pine nuts from eastern Asia have been increasing. The species apparently are Korean pine (*Pinus koraiensis*) and Armand pine (*Pinus armandii*). Now China is the chief source. Competition may become great.

Information on pine nuts of several species (*Pinus* spp.) imported into the United States is important in showing competition with native piñon nuts. For about a century, pine nuts under the Italian name pignolias have been imported into the United States from southern Europe. In recent years, quantities of shelled pine nuts from eastern Asia, mainly China, have been increasing. Competition with piñons in domestic markets may become great. Annual published records by the U.S. Bureau of Census of pine nuts back to 1947 are reviewed here.

The coniferous genus *Pinus* L., pine, one of the world's most valuable timbers, is widespread through north temperate regions and represented by almost 100 species, including about 35 native in the United States and nearly 50 in Mexico. Standard illustrated references for worldwide identification of conifers and their seeds are the revision of Dallimore and Jackson (1967) by Harrison and the new reference by Vidakovic (1991). Geographic distribution of each species has been mapped (Critchfield and Little 1966).

The relatively large seeds or kernels of many pine species have served for human consumption wherever native. Called pine nuts, or pine kernels in England, these seeds mostly with thick shell and a long wing (none innate piñons) that serve in seed disposal, and are borne exposed in cones. Nuts technically are dry hard-shelled fruits of flowering plants. More than 20 species, or one-fifth the total, have been recorded as having edible seeds or nuts. Harrison (1951) cited 18 species (grouping

piñons as 1). Passini (1988) reviewed the classification and geographic distribution of 8 species of nut pines (pinos piñoneros in Spanish) of Europe and Asia.

Pignolias imported in quantities into the United States from southern Europe (Portugal, Spain, and Italy) are Italian stone pine, *Pinus pinea* L., which matures its cones in 3 seasons rather than 2. The shells are too thick for cracking with the teeth, as I confirmed recently in a small plantation in Israel. Shelled nuts are long and narrow, slightly larger than native piñons. The Italian common name pignolia (also pinocchio) has remained in use on tariff records for imports of all pine nuts worldwide. In England the term pine kernels is used. Nuts from Syria and Turkey are the same. Nuts from Switzerland may be the native Swiss stone pine, *Pinus cembra* L. Those from United Kingdom apparently were from another country and shelled there.

Imports of unshelled nuts from Mexico, listed in 1953, probably were Mexican piñon, *Pinus cembroides* Zucc. Incidentally, Harrison (1951) observed that nutmeats (endosperm) of that species could be distinguished by their pink color rather than white when raw, becoming grayish when roasted.

About twenty years ago I was surprised to get a phone call from the Tariff Commission about tariffs on pine nuts from China. It was my first knowledge of imports from that country. The year 1976 was the first with imports of shelled pine nuts from China high enough to be listed. Totals increased until China was highest in 1980, 1989, and 1990. In 1989 the total of shelled nuts imported from China was 1,055,816 kg., more than that of native piñon, or twoleaf piñon, *Pinus edulis* Engelm. Competition may become great.

Pignolias imported from Asia are different and should be studied further. The common species in northeastern China and sometimes imported also from Korea is Korean pine, *Pinus*

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koraiensis Sieb. & Zucc. In western and southwestern China, Armand pine, *Pinus armandii* Franch. is common. Imports from Hong Kong obviously originated in nearby mainland China. Pignolias from Taiwan apparently came from the mainland for shelling too. (I visited Taiwan in 1992, where *Pinus armandii* is local in high mountains. Its seeds are not harvested commercially there.)

Publications with summaries of imports of pignolias into the United States cited here were examined in the International Trade Reference Room in the U.S. Department of Commerce building in downtown Washington, D.C. The term pignolia has been used throughout for all pine nuts imported, and scientific names have not been cited.

First, the tariff schedules for 1992 (U.S. International Trade Commission 1992) are have the following low rates of duty:

- Pignolia, in shell, general, 1.5 cents per kilogram (2.2 pounds); special, free; high rate, 5.5 cents per kilogram
- Pignolia, shelled, 2.2 cents per kilogram; special, free; high rate, 11 cents per kilogram.

Annual published records by calendar years beginning in 1947 and continuing through 1988 list separately pignolia in shell and pignolia shelled, totals by pounds and customs value of imports in thousands of U.S. dollars. (U.S. Bureau of the Census 1947-1988). Records of 3 representative years, 1947, 1960, and 1976, are compiled in Table 1. The latest imports beginning in 1989 and continuing through 1991 with totals to kilograms are cited here in Table 2 (U.S. Bureau of the Census 1989-1991).

Table 1. — Pignolia nuts, in shell and shelled, imported into the United States by representative calendar years, 1947 (first record), 1960, and 1976 (first record from China), by countries, totals in pounds and customs values in thousands of dollars.

Pignolia in shell, weights in lb, customs value in thousands of dollars								
Country	1947 lb	dollars	Country	1960 lb	dollars	Country	1976 lb	dollars
Italy	3,307	.248	Italy	2,646	1	Total	10,313	.015
Pignolia shelled, weights in lb, customs value in thousands of dollars								
Country	1947 lb	dollars	Country	1960 lb	dollars	Country	1976 lb	dollars
Italy	249,755	147	Italy	407,559	365	China	42,491	70
Syria	1,639	1	Korea	2,000	2	Portugal	337,200	768
Total	251,394	148	Portugal	34,719	20	Spain	65,308	152
			Spain	25,725	15	Total	445,499	990
			Total	470,003	401			

Table 2. — Pignolia nuts, in shell and shelled, imported into the United States by calendar years, 1989, 1990, 1991, by countries. Totals in kilograms (1 kg = 2.2 lb.) and customs values in thousands of dollars. Totals from Hong Kong could be combined with China.

Pignolia in shell, weights in kg, customs value in thousands of dollars								
Country	1989 kg	dollars	Country	1990 kg	dollars	Country	1991 kg	dollars
China	22,806	56	Total	68,350	78	Portugal	190,240	254
Other	33,831	77				Other	32,590	88
Total	50,637	133				Total	222,830	303
Pignolia shelled, weights in kg, customs value in thousands of dollars								
Country	1989 kg	dollars	Country	1990 kg	dollars	Country	1991 kg	dollars
China	1,055,806	5,562	China	638,268	3,983	China	205,092	2,135
Hong Kong	259,827	1.407	Hong Kong	113,867	695	Hong Kong	92,394	1,059
Portugal	98,571	987	Portugal	40,716	450	Portugal	335,931	4,955
Spain	21,576	277	Spain	45,916	447	Spain	178,014	2,322
Switzerland	37,624	209	Other	11,958	94	Turkey	198,522	2,939
Taiwan	14,251	70	Total	850,705	5,671	Other	2,778	44
United King.	11,000	68				Total	1,012,731	13,456
Total	1,449,685	8,585						

Several general observations can be made from these import records. First, the nuts were not designated by scientific name. Further identification is desired, followed by chemical analyses and taste tests to determine preference by the public. It is reported that nuts of a few species have a slightly resinous taste. Roasted nuts of the native southwestern piñon or twoleaf piñon (*Pinus edulis*) have an oily flavor lacking in imports.

Unshelled pine nuts are imported in relatively small quantities. Most imported pine nuts, perhaps as many as nine-tenths, are shelled, for obvious reasons in shipment. The heavy shell adds to bulk and weighs about as much as the nutmeat. Also, labor is available to increase the value of processed nuts, possibly by hand shelling. The seeds of most imported species have relatively thick seed coats and are bulky and heavy. They cannot be cracked with the teeth, like seeds of the two common native piñons. Singleleaf piñon, *Pinus monophylla* Torr. & Frém., of the Great Basin region, has thinner shells than twoleaf piñon, *Pinus edulis* Engelm. of the Southwest. Thus, imports of unshelled pine nuts likely will remain low and not competitive with the native thinner-shelled piñon nuts.

In recent years, imports of shelled pine nuts have been increasing in quantities equal to native production. Now the principal source is mainland China, rather than southern Europe. These Chinese nuts produced at lower cost may provide great competition in the future. Other leading countries now are Portugal and Spain. Imports from Italy have decreased.

Shelled nuts are imported in increasing quantities equal to native production. Now the main source is China rather than southern Europe, mostly Portugal and Spain. Imports from Italy have decreased. Competition from China may become great.

Imports certainly are irregular from year to year and from one country to another. Apparently the seed crops of wild trees are irregular, partly because of weather variations. Further comparisons are needed to determine differences in chemical composition of nuts and which taste the consumers

like best. It is reported that nuts of a few species have a slightly resinous or turpentine taste. Roasted nuts of the native twoleaf piñon (*Pinus edulis*) have an oily flavor preferred by most persons.

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