United States
Department of
Agriculture

Agricultural
Marketing
Service

Fruit and
Vegetable
Division

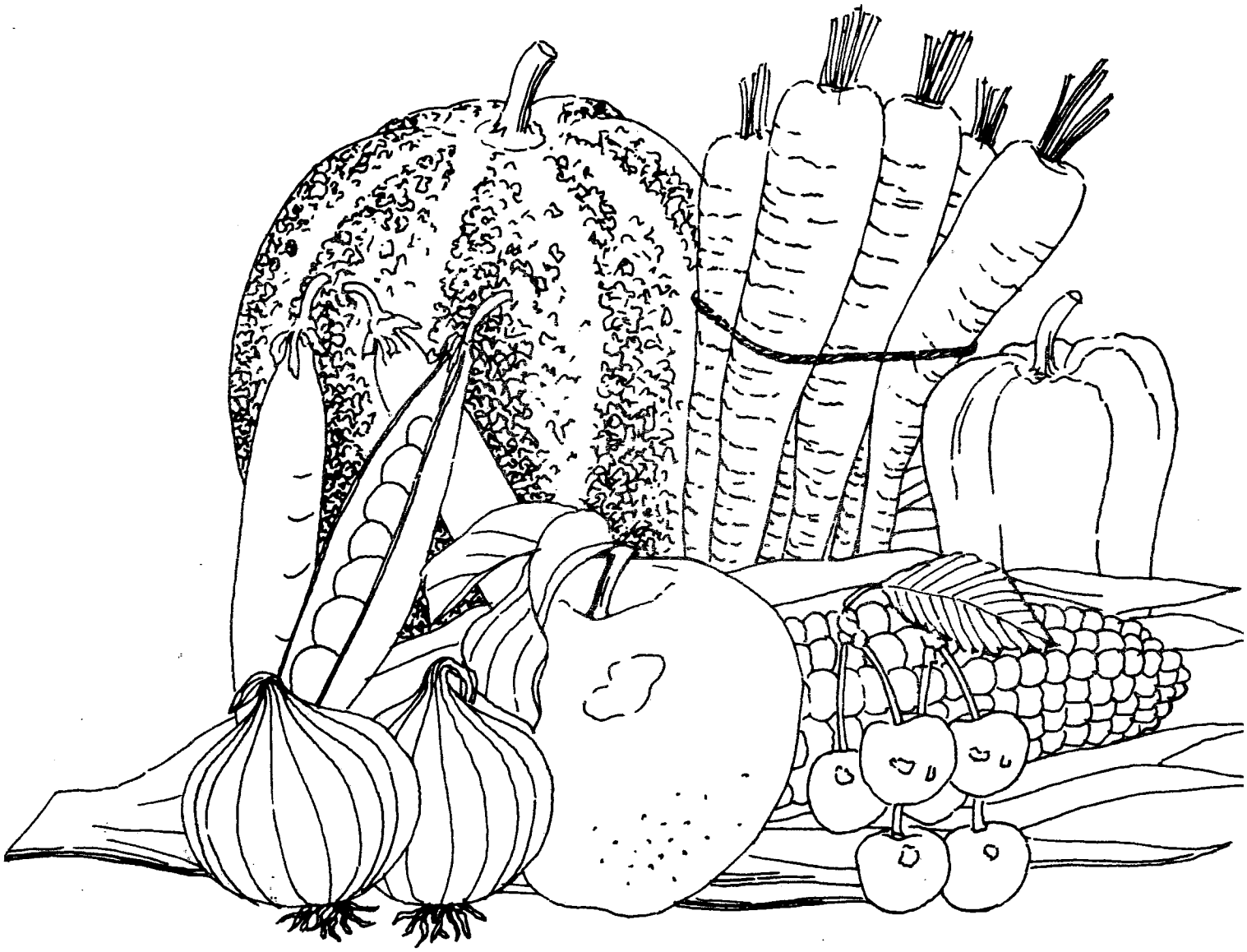
Fresh Products
Branch

Washington, DC

June 1973

Brazil Nuts in the Shell

Inspection Instructions



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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
FRESH PRODUCTS BRANCH

INSPECTION INSTRUCTIONS

FOR

BRAZIL NUTS IN THE SHELL 1/

GENERAL

Brazil nuts ("Castanha do Brazil") are grown exclusively in South America throughout the entire Amazon Basin. Brazil nut trees are not cultivated, they grow wild. The trees blossom from October to March and it takes about 14 months for fruit to develop from a blossom stage. (1)

The Brazil nut is really a seed of the fruit of the castanha tree. The fruit is similar in appearance, shape, and size to a coconut. It ranges from three to eight inches in diameter and has a tough, hard, and thick outer shell (pod). Each pod may contain from 12 to 30 nuts inside of it which are arranged much like segments of an orange - this accounts for a triangular shape of a shell. (2)

When the pods ripen they fall to the ground and are gathered by hand and are opened by natives using machetes. The nuts are collected in open rattan baskets and then washed to remove extraneous material. (3)

1/ These instructions do not establish a new or revised substantive rule. (United States Standards for Grades of Brazil Nuts in the Shell CFR §§ 51.3500- 51.3511.)

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(4) The nuts are then carried by boat to a central gathering point located along a stream accessible to motor boats or river steamers. These boats transport the nuts to one of two shipping ports (Belem or Manaos) where they are graded and dried in dehydrating ovens. When moisture content is lowered to near 10 percent the nuts are removed from an oven and bagged in burlap sacks for export (these sacks usually hold about 112 pounds of nuts). Shipments of Brazil nuts arrive in U.S. ports throughout the year with the biggest volume arriving during May through October.

(5) It is important that each inspector become familiar with these instructions and the U. S. Standards for Grades of Brazil Nuts in the Shell. He should also be aware of changes in inspection policy.

(6) Detailed instructions pertaining to Date, Inspection Point, Kind of Car (truck or trailer), Loading, and other certificate headings not covered by these instructions may be found in the General Market or Shipping Point Inspection Instructions.

SAMPLING

(7) Representative sampling is just as important as actual grade determination. If the samples are not representative of a lot, the grading results are incorrect regardless of how accurately the grade factors have been interpretated.

2 Composite Sample. The standards provide for inspection on the basis of a composite sample. Nuts from all containers sampled are combined into one large sample instead of being graded separately. This procedure is based on the assumption that nuts in all containers in a lot are similar in outward appearance and the containers bear identical markings. (8)

2 Mixed Quality Lots. When drawing a sample, the inspector should observe the general appearance of nuts in each container sampled. If the nuts in any container or number of containers appear distinctly different in quality or size from those in the majority of containers, those different containers should be considered a separate lot. The sample taken from them should be graded separately and reported separately on the certificate. If the number of such containers, with different quality or size nuts, can be determined indicate it on the certificate, otherwise report in general terms, i.e., "many sacks" or "some sacks", etc. (9)

* 2 Sampling Packed Lots Other than Consumer Size Packages. The inspector should draw a sample of nuts from at least 10 percent of the containers selected at random. In extremely small lots -- five containers or less -- the inspector shall sample all the containers. (When sampling for aflatoxin analysis, refer to current "Inspection Instructions for sampling of in-shell Brazil nuts and pistachio nuts for aflatoxin analysis.") * (10)

* 2 Consumer Size Packages. Brazil nuts are frequently packed in small * (11)

* transparent film bags which are packed in large shipping containers. *
* These lots shall be sampled as follows: *
* 2. Carlot or Truck Load. Select master containers at random at *
* the rate of 1 out 25. Take 1 consumer package out of each master con- *
* tainer selected. *
* 2. Less than Carlot. Regardless of size of lot, select 20 *
* master containers at random when consumer packages are 1-pound units; *
* select 15 master containers when consumer packages are 2-pound units. *
* Take 1 consumer package out of each master container selected. When *
* lots contain 20 or less master containers with 1-pound units or 15 or *
* less master containers with 2-pound units, a consumer package shall be *
* taken from each master container in the lot. *
(11a)* Take the consumer size package from various areas within the master *
* containers, i.e., top, middle or bottom. Each package that is removed *
* shall be replaced with one from another master container selected for *
* plugging the empty spaces. Open every consumer package drawn from the *
* lot and empty entire contents into a large carton or box. Mix thoroughly *
* Then select at random the number of nuts required in paragraph 13 to *
* determine the size and grade. *

(12) 2. Other Containers. When sampling containers which are not consumer size packages, select the containers for sampling, at random, from all

parts of the load or stack (s). Then open the top of the container being careful to avoid unnecessary damage to it, and draw a sample from the central portion of some containers, bottom portion of some, and from the top portion of others. In order to obtain a sample from the bottom portion of a large container it may be necessary to dump the entire contents into an empty container, making the bottom readily accessible.

Size of Sample. The inspector should take a large handful (or cupful) of nuts from each container sampled. A sufficient quantity should be taken from each to provide a sample for grading, a check sample, and a small additional amount for grade in borderline cases. These samples should be collected in one container to form a composite sample for the lot. (13)

* Return Excess Sample. After the check sample has been set aside, all nuts in excess of those cracked for inspection shall be returned to the applicant immediately after the grading has been completed. * (13a)

****

The composite sample should be thoroughly mixed and from 2,000 to 3,000 grams should be used to determine the percentage, by weight, of pieces of shell, chaff, and foreign material. From this sample the minimum number of nuts to be used in determining the grade and size shall be as follows: (14)

Pounds in Lot	Sample Graded
Up to 15,000	100 nuts
15,001 to 30,000	200 nuts
30,001 to 60,000	300 nuts
60,001 to 80,000	400 nuts
80,001 to 100,000	500 nuts
100,001 to 120,000	600 nuts
Over 120,000	700 nuts

****

Remember, the above indicates the minimum number of nuts to be graded in each instance, but an additional 100 or 200 nuts may have to be graded in borderline cases. (15)

Sampling from the Packing Line. When inspections are made in the packing house, the "on-line" method may be used if packing is in progress at time of inspection. Samples may be drawn from the packaging machinery after bags are sealed or from the packing line before containers are closed. (16)

Samples should be taken at frequent intervals from the end of a conveyor belt or from containers being filled. These samples must be composited and thoroughly mixed. Every 20 or 30 minutes a portion of the composite (17)

sample should be analyzed for grade. Then a new sampling routine should be started again. It is better to grade samples immediately after they are obtained than to wait until numerous samples have accumulated. To accomplish this, it will often be necessary to grade a 25 or 50-nut sample rather than the customary 100-nut sample.

(18) Mailing a Sample. Inspection may be requested in markets which have not been furnished with the necessary equipment for grading Brazils, or other circumstances may arise which require that a sample be drawn and sent to another office for grading and certification. An official sample may be drawn by any authorized inspector and delivered or shipped to a designated inspection office for grading and certification.

(19) In order to be sure that the official sample will be large enough for all possible needs, it should consist of about 2-1/4 the amount necessary for sizing and grading. Make sure the shipping container is strong and well padded with crumpled newspaper or other types of padding.

(20) Use "Notice of Sampling" form FV-187. Although designed for peanuts, the form will serve for Brazils by writing the words "BRAZIL NUTS IN THE SHELL" in the space marked "Type". Under "Remarks" indicate that the sample is submitted for grade analysis. This form should be typed if possible, if not, make sure it is written in ink and is clearly legible.

Place the original copy of the sampling certificate in an envelope inside the package of nuts. Distribute a copy to the applicant with the fee bill and retain other copies for office files.

INSPECTION EQUIPMENT

The following equipment is needed when grading Brazil nuts: (21)

1. Scales - gram scales or ounce-pound scales may be used. The capacity of these scales should be at least 2000 grams or 4 pounds (64 ounces).
2. Sample board - this should be a square wooden board (or fiberboard) about 14x14 inches with 10 rows, each row consisting of 10 holes or squares. The holes should be not less than 1 inch in diameter and about 3/4 inch deep. If squares are used they should be not less than 1 inch square.
3. Nut cracker - a hand sheller equipped with sharp jaws which snip off the shell in a few operations is the preferred cracker.

Inspectors stationed at packing houses should be provided with the following: (22)

4. Table or bench - large enough for cracking and grading operations.
5. Adequate lighting - a fluorescent light, or a strong "daylight" bulb is preferable to natural daylight because it will provide about the same intensity of light at all times, permitting more

uniform interpretation of grade factors. The inspector should not proceed with an inspection unless adequate lighting is available.

DATE AND HOUR

(23) The date and time that the sample was drawn and graded should appear on the certificate. If a sample is drawn at one market and graded at a different market, enter the applicable market after "Sample Drawn" and "Sample Graded" on the certificate.

Example:

Sample Drawn: Denver, Colorado October 12, 1973 2:10 pm

Market: (Sample Graded) Chicago, Illinois Date: October 16, 1973

Hour: 1:30 pm

PRODUCTS INSPECTED

(24) Under this heading on the certificate report the product, type of container, identifying marks and number of containers in the lot.

(25) *Product*. Report as "BRAZIL NUTS in the Shell." There are many varieties of Brazil nuts and it is extremely difficult to accurately identify them. Therefore, the inspector should not attempt to name the variety.

(26) *Type of Container*. Brazil nuts are frequently shipped to nut processors in burlap sacks or other bulk containers. They are usually shipped to retail stores in consumer size film bags packed in (master) cartons.

Identifying Marks. Any identifying marks, i.e., packer's name and address, lot number, etc., should be reported as they appear on the container. Always show a size marking; it may be used as a basis for size determination when the sample is being graded. (27)

Quantity Inspected. The number of containers covered by the certificate must always be stated. Usually it is stated as an "applicant's count" or "manifested as", unless the inspector has counted all containers in which case an "inspector's count" is reported. Equivalent pounds may be mentioned in paranthesis following the number of containers. (28)

Examples of "PRODUCT" statements: (29)

1. BRAZIL NUTS in the shell in film bags printed "Brazil Nuts, Packed by Robert L. Berner Co., Foley, Alabama, Net. wt. 16 oz." in cartons printed "24 Cello Bags" and stamped"16 oz., Medium Polished." Inspector's count 200 cartons.

2. BRAZIL NUTS IN THE SHELL in burlap sacks stenciled "Pazul, PTC, Mobile Products Deo Brasil, Abraham J. Pazuello, Manaus, S.E.R. Inspecionado Manuw, Brasil, Classificado TIPO 1, 112 lbs. Applicant's count 200 sacks (equivalent 22,400 pounds).

3. IN-SHELL BRAZIL NUTS in burlap sacks stenciled "Brazil Nuts, Fairkist Brand, Schermer Pecan Co., Fairhope, Ala. 50 lbs. Net" and tagged "Large Artifically Dyed and Polished Nuts." Manifested as 500 sacks (equivalent 25,000 pounds).

PACK

(30) The Pack heading, as a general rule, should be blocked out on all Brazil nut inspection certificates.

TEMPERATURE

(31) The Temperature heading, as a general rule, should be blocked out on all Brazil nut inspection certificates.

SIZE

(32) Size must be determined on diameter of nuts or by count per pound. No matter which method is used, size must be reported under the Size heading and stated in connection with the grade statement. Remember, Brazil nuts must meet a size classification in order to grade U. S. No. 1. The inspector shall determine the size and report it as part of the Grade statement in terms of one of the following classifications:

(33) (a) *Extra Large:* Not more than 15 percent, by count, of the Brazil nuts pass through a round opening 78/64 inch in diameter, including not more than 2 percent which pass through a round opening, 74/64 inch in diameter; or count does not exceed 45 nuts per pound (see (d) and (e)):

(b) *Large*: Not more than 15 percent, by count, of the Brazil nuts pass through a round opening 73/64 inch in diameter, including not more than 2 percent which pass through a round opening 60/64 inch in diameter; or count does not exceed 50 nuts per pound (see (d) and (e)). (34)

(c) *Medium*: Not more than 15 percent, by count, of the Brazil nuts pass through a round opening 59/64 inch in diameter including not more than 2 percent which pass through a round opening 50/64 inch in diameter; or count is not less than 51 nuts per pound but not more than 65 nuts per pound (see (d) and (e)). (35)

(d) *Count Per Pound*. Weigh out an even pound of Brazil nuts from the composite sample. If gram scales are used, the one-pound equivalent weight is 453.6 grams. Count the nuts and record the count. Weigh and count a second pound. Average the two counts, and if the average is clearly within the count range specified for one of the size classifications, report it as the count for the lot. However, if the average of the two is borderline between two size classifications, make one or two more counts and average all of them. This should help the inspector decide which size classification should be assigned to the lot. (36)

(37) (e) *Percentage Weight of 10 Smallest Nuts per 100.* Count out 100 nuts at random from the composite sample. Weigh the 100 nuts on gram scales or ounce-pound scales. (Gram scales should be used to attain the greatest accuracy.) Record the weight to the nearest gram, or to the nearest one-half of an ounce. (Example: "843 grams" or "30 ounces.") Spread the 100 nuts in a single layer, so that all may be seen. Then carefully select 10 which appear to be the smallest among the 100. Weigh the 10 smallest nuts to the nearest gram or nearest one-fourth of an ounce and record the weight. (Example: "51 grams" or "1.75 ounces".) Then divide the weight of the 10 smallest nuts by the weight of the 100 nut sample to obtain the percentage weight of the 10 smallest. (Example: 1.75 ounces divided by 29.00 ounces gives 6.03-round to 6%.) If the average is less than 6.00%, do not round it up to 6%, because the 10 nuts per 100 must weigh at least 6 percent of the total weight of the 100 nut sample, in order to meet a size classification.

(38) Examples of "SIZE" statements:

1. Average 50 nuts per pound. 10 smallest nuts in 100-nut sample weigh 8% of total weight.

2. Generally 73/64 to 60/64 inch in diameter. 5% smaller than 73/64 and 1% smaller than 60/64 inch in diameter.

3. Average 46 nuts per pound. 10 smallest nuts in 100 weigh 6% of total weight.

QUALITY

The factors affecting quality are determined from the same counted sample used for size determination. The sample is graded in two separate steps. First the nuts are graded on the basis of shell or external quality factors. Then every nut in the sample is cracked and graded on the basis of kernel or internal quality factors. It is possible that an individual nut may be scored against the tolerance for both external and internal defects. (39)

The factors to consider under the Quality heading are:

1. *External (Shell) Quality Factors:*
   - Curing and Moisture.
   - Cleanness.
   - Split, broken or punctured.
   - Oil stains.
   - Mold.

2. *Internal (Kernel) Quality Factors:*

- Development.
- Curing.
- Discoloration.
- Decay.
- Rancidity.
- Insect injury.
- Mold.

External (Shell) Quality Factors

(41) Curing and Moisture Content. The standards require Brazil nuts to be well cured. This means the shell is free from surface moisture and the kernel is firm and crisp, not pliable or leathery. Nuts which do not meet this requirement must be considered damaged and reported as "not well cured".

(42) Moisture content is an important factor in the keeping quality for all nuts in the shell. Although there is no specific moisture requirement in the Brazil nut standards, as a service to the applicant, the inspector may, upon request, draw a sample for moisture determination. This sample should be taken at random from the composite sample. Approximately one pound (453.6 grams) of nuts should be placed in an airtight container (sample bottle, can, or in a polyethylene bag which is

hermetically sealed). The sample should be shipped or taken to the nearest F&V Processed Products lab for moisture determination.

Use "Notice of Sampling" form FV-187. Write the words "BRAZIL NUTS" in the space marked "Type". Under "Remarks" state: "Sample is submitted for determination of moisture content." Place the original copy of the sampling certificate in an envelope inside the package containing the sample; distribute one copy to the applicant with the fee bill, and retain a copy for the office files. (43)

The applicant should be charged on the hourly basis including the time required for packaging and delivery to the shipping carrier or Processed Products lab. The charge for sampling and the prepaid shipping charge shall be shown at the bottom of each sampling certificate and also on the billing form. (44)

The percentage of moisture obtained from Processed Products should be reported under "Quality". (45)

Example: "Average moisture content 6.5%." Then make this statement under "Remarks": "Moisture content was determined by Processed Products Branch at applicant's request."

Cleanness. The U.S. No. 1 grade requires that Brazil nuts be clean. This means that the shell is practically free from dirt or other adhering substance. Consider the individual nut as clean unless there is sufficient dirt or other foreign material adhering to its surface which materially affects the appearance. (46)

(47) Split, broken or punctured. A shell which is split or broken to any degree shall be scored as damage. Score as serious damage any split, broken or punctured shell when the kernel is plainly visible through the shell without applying pressure.

(48) Oil stains. If more than 20 percent in the aggregate of the shell surface is affected by oil stain, the nut shall be scored as damage. If the affected area exceeds 50 percent in the aggregate, score as serious damage. CAUTION: Some Brazil nuts are normally dark in color and should not be confused with nuts which are affected by oil stains.

(49) Mold. A nut is scored as damage when more than 20 percent of the shell surface is affected by a slight mold growth or when any mold growth materially detracts from the appearance of the shell. Score as serious damage when more than 50 percent of the shell surface is affected by a slight mold growth or when any mold growth seriously detracts from the appearance of the shell. Mold on the interior of a shell, which may come in contact with the kernel, shall be scored the same as "Mold" on page 19.

Internal (Kernel) Quality Factors

(50) Development. The standards require that kernels be reasonably well developed. This means that a kernel must fill at least one-half of the capacity of the shell which surrounds it. Any kernel which fills

less than one-half of the capacity of the shell is considered poorly developed and should be scored as damage.

Blank. A blank is defined as a whole shell which does not contain a kernel or a whole shell containing a kernel which fills less than one-fourth its capacity. A blank is always scored as serious damage. Pieces of shell (not a whole shell) shall be classed as foreign material. (51)

Discoloration. All kernels in the sample should first be examined for discoloration affecting the outer skin (pellicle). Each kernel should then be cut lengthwise to determine if discoloration or other factors are present. (52)

A kernel is considered damaged by discoloration when any noticeable discoloration penetrates more than one-sixteenth inch into the kernel; seriously damaged when the discoloration affects more than 50 percent of the flesh of the kernel. If a kernel is seriously damaged by discoloration and also decayed, rancid or moldy, always score the most serious defect. Decay is considered the most serious of these defects, with rancidity, mold and discoloration following in that order. (53)

It is common for some varieties of Brazil nuts -- especially larger size nuts-- to have a hollow cavity inside the kernel. The cavity alone should not be scored as a defect. Often discoloration, decay, (54)

mold or rancidity may be found in or around the cavity; so the inspector is reminded to carefully check for these factors.

(55) Decay. There are two types of decay which affect kernels. One is a dry powdery rot, the other a wet rot. Both are often accompanied by mold growth. Decay, regardless of the type, must be scored as serious damage against the 7 percent tolerance.

(56) Rancidity. This defect is usually associated with age, but it may be found in freshly harvested nuts. In many cases a shell which is oil stained will contain a rancid kernel. In other cases the inspector will have to be alert to detect this defect. A rancid kernel usually is darker in color than a normal kernel and it may have an oily appearance. When in doubt about whether a kernel is rancid, the unmistakable rancid flavor will be the deciding factor. All rancid kernels must be scored as serious damage.

(57) Insect injury. Any dead insect, insect fragment, web or frass inside the shell, or any kernel showing distinct evidence of insect feeding must be scored against the 5 percent serious damage tolerance.

(58) If any live insect is found inside the shell it must be scored as serious damage against the restricted tolerance of 1/2 of 1 percent.

Mold. Any kernel which contains attached mold that is noticeable (59)
is scorable as serious damage. Inspectors should not use a magnifying glass to look for mold, but should carefully examine kernels with the naked eye.

CONDITION

Brazil nuts are normally a stable commodity after they have been cured (60)
and fully dried. They are rarely subject to change in quality due to condition factors common in perishable commodities. Only in cases where a lot has become wet or otherwise affected in some unusual way should a condition heading be used. Otherwise it should be blocked out on all Brazil nut certificates.

GRADE

Under this heading a definite statement must be made stating whether (61)
or not the lot grades U. S. No. 1. In cases where a lot fails to grade the applicant may request the percentage of U. S. No. 1 quality.

When the applicant requests certification of the percentage of U. S. (62)
No. 1 quality, it shall be assumed that he wants to know the percentage of kernels free from grade defects. Determine the percentage of U. S. No. 1 quality by substracting from 100, the percentage of kernels, not shells, that were scored against the grade.

(63) Following the customary grade statement, make an added statement showing the percent of U. S. No. 1 kernel quality.

Example: "Lot contains 88% U. S. No. 1 kernel quality."

REMARKS

(64) Under this heading report any special circumstances applying to the inspection. If the lot is unloaded, it may be possible to show a steamship name or a trailer or car number from which the applicant said it was unloaded. If the sample was drawn at one location and mailed to another location for grading, the facts should be reported here.

(65) Examples:

1. Applicant states that above described lot was unloaded from trailer bearing Alabama license T-7643.

2. (Sample mailed to another office for grading and certification.) The sample described above was drawn by Federal Inspector John Knut at Fargo, North Dakota on Oct. 20, 1973 from a lot of 100 sacks stenciled "Large Colored Brazil Nuts, 50 lbs. net wt." printed "Anton-Argires Bros. & Co. AA Quality, Chicago, Illinois."

GENERAL EXAMPLES

Instructions for writing the certificate are provided in the General Inspection Instructions. Only those certificate headings which require special instructions are shown in the following examples: (66)

1. PRODUCTS: BRAZIL NUTS in the Shell in burlap sacks stenciled "Product of Brazil Class TIPO 2, Brazil Nuts in Shell, SPC Inspectionada Para-Brazil." Manifested as 2,000 sacks (equivalent 224,000 pounds).

   SIZE: Average 48 nuts per pound. 10 smallest nuts per 100 weigh 5% of weight of 100.

   QUALITY: Shells are clean and natural. 4% shell defects, damage by oil stains. Kernels are reasonably well developed and well cured. 10% kernel defects, including 8% serious damage by rancidity and 2% damage by discoloration.

   GRADE: Fails to grade U. S. No. 1 Large account of kernel defects and insufficient weight of 10 smallest nuts per 100 nuts.

2. PRODUCTS: BRAZIL NUTS in the Shell in film bags printed "Gay Pak, Deluxe Brazil Nuts, One Full Pound, by American Nut Co., Chicago, Ill." in cartons stenciled "Packed under Continuous Inspection of the USDA, 24-1 pound packages." Applicant states 1000 cartons - 24,000 pounds.

SIZE: Generally range from 74/64 to 86/64 inches in diameter. 5% under 78/64 and 1% under 74/64 inches in diameter.

QUALITY: Shells clean, bleached and colored. 12% shell defects, consisting of 8% serious damage by split shells and 4% damage by split or broken shells. Kernels well cured and generally reasonably well developed. 12% kernel defects consisting of 6% serious damage by rancidity, 2% serious damage by mold and 4% damage by discoloration.

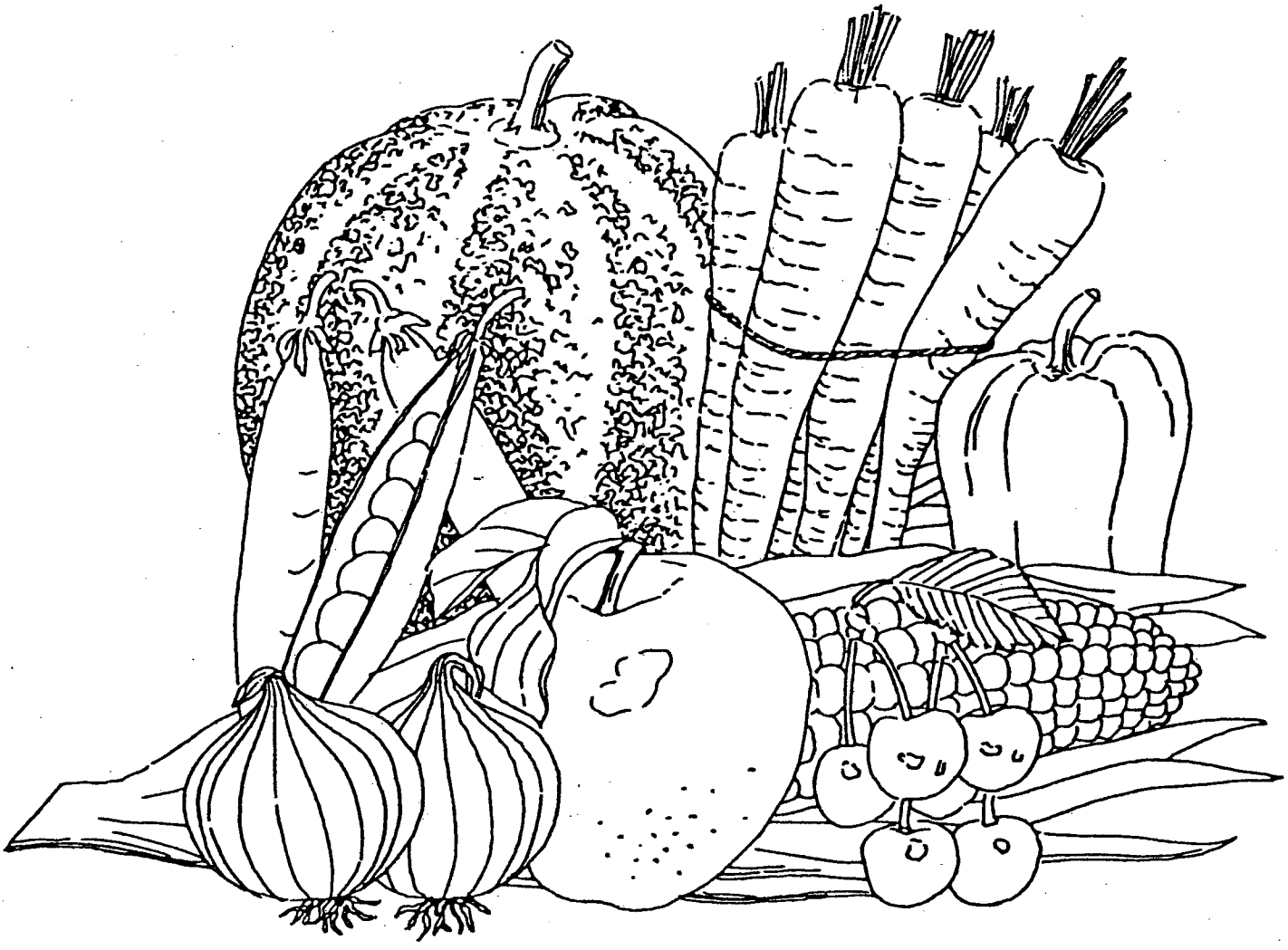
GRADE: Fails to grade U. S. No. 1 Extra Large, account of shell and kernel defects. Lot contains 88% U. S. No. 1 kernel quality.

REMARKS: Above stock manifested as B-L 3-4. Percentage of U. S. No. 1 kernel quality determined and shown at applicant's request.

* * * * * * * * * * * *

Appendix I

United States Standards



UNITED STATES STANDARDS FOR GRADES OF BRAZIL NUTS IN THE SHELL [1]

(31 F. R. 10069)

Effective August 25, 1966

AUTHORITY: The provisions of this subpart issued under secs. 203, 205, 60 Stat. 1087, as amended, 1090 as amended; 7 U.S.C. 1622, 1624.

GRADE

§ 51.3500 U.S. No. 1.

"U.S. No. 1" consists of well cured whole Brazil nuts in the shell which are free from loose extraneous and foreign material and meet one of the size classifications in § 51.3501. The shells are clean and free from damage caused by splits, breaks, punctures, oil stain, mold or other means, and contain kernels which are reasonably well developed, free from rancidity, mold, decay, and from damage caused by insects, discoloration, or other means.

(a) In order to allow for variations incident to proper grading and handling, the following tolerances are provided:

(1) *For defects of the shell.* Ten percent, by count, may fail to meet the requirements of the grade, including therein not more than 5 percent for serious damage by split, broken or punctured shells, oil stains, mold or other means.

(2) *For defects of the kernel.* Ten percent, by count, may fail to meet the requirements of the grade, including therein not more than 7 percent for serious damage by any cause: *Provided,* That not more than five-sevenths of the latter amount, or 5 percent, shall be allowed for damage by insects: *Provided further,* That included in this 5 percent tolerance not more than one-half of 1 percent shall be allowed for Brazil nuts with live insects inside the shell.

(3) *For loose extraneous and foreign material.* One percent, by weight: *Provided,* That such material is practically free from insect infestation.

SIZE CLASSIFICATIONS

§ 51.3501 Size classifications.

(a) Extra large: Not more than 15 percent, by count, of the Brazil nuts pass through a round opening $^{78}/_{64}$ inch in diameter, including not more than 2 percent which pass through a round opening $^{74}/_{64}$ inch in diameter; or count does not exceed 45 nuts per pound (see paragraph (d) of this section);

(b) Large: Not more than 15 percent, by count, of the Brazil nuts pass through a round opening $^{73}/_{64}$ inch in diameter, including not more than 2 percent which pass through a round opening $^{69}/_{64}$ inch in diameter; or count does not exceed 50 nuts per pound (see paragraph (d) of this section);

(c) Medium: Not more than 15 percent, by count, of the Brazil nuts pass through a round opening $^{59}/_{64}$ inch in diameter, including not more than 2 percent which pass through a round opening $^{50}/_{64}$ inch in diameter; or count is not less than 51 nuts per pound but not more than 65 nuts per pound (see paragraph (d) of this section) and;

(d) When size is based on count per pound, the 10 smallest nuts per 100 weigh at least 6 percent of the total weight of the 100 nut sample.

[1] Packing of the product in conformity with the requirements of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable State laws and regulations.

UNCLASSIFIED

§ 51.3502 Unclassified.

"Unclassified" consists of Brazil nuts in the shell which have not been classified in accordance with the foregoing grade. The term "unclassified" is not a grade within the meaning of these standards but is provided as a designation to show that no definite grade has been applied to the lot.

APPLICATION OF STANDARDS

§ 51.3503 Application of standards.

The grade of a lot of Brazil nuts shall be determined on the basis of a composite sample drawn at random from containers in various locations in the lot. However, any identifiable portion of the lot in which the Brazil nuts are obviously of a quality or size materially different from that in the majority of containers shall be considered as a separate lot, and shall be sampled and graded separately.

DEFINITIONS

§ 51.3504 Well cured.

"Well cured" means that the shell is free from surface moisture, and that the kernel is firm and crisp, not pliable or leathery.[2]

§ 51.3505 Loose extraneous and foreign material.

"Loose extraneous and foreign material" means pieces of pod, pieces of shell, dirt, external insect infestation, or any substance other than Brazil nuts in the shell or Brazil nut kernels.

§ 51.3506 Clean.

"Clean" means that the shell is practically free from dirt or other adhering substance.

§ 51.3507 Damage.

"Damage" means any specific defect described in this section; or an equally objectionable variation of any one of these defects, or any other defect, or any combination of defects, which materially detracts from the appearance or the edible or marketing quality of the individual Brazil nut or of the lot. The following defects shall be considered as damage:

(a) Insects when an insect or insect fragment, web, or frass is present inside the shell, or the kernel shows distinct evidence of insect feeding;

(b) Split or broken shells;

(c) Oil stains when affecting an aggregate area of more than 20 percent of the surface of the shell;

(d) Mold when more than 20 percent of the surface of the shell is affected by a slight mold growth or when any mold growth materially detracts from the appearance of the shell, or when any mold growth noticeably affects the kernel; and,

(e) Discoloration when the affected area penetrates more than one-sixteenth inch into the kernel.

§ 51.3508 Reasonably well developed.

"Reasonably well developed" means that the kernel fills at least one-half of the capacity of the shell.

§ 51.3509 Rancidity.

"Rancidity" means that state of deterioration in which any portion of the kernel has developed a rancid taste.

§ 51.3510 Decay.

"Decay" means that any portion of the kernel is decomposed.

§ 51.3511 Serious damage.

"Serious damage" means any specific defect described in this section; or an equally objectionable variation of any one of these defects, or any other defect, or any combination of defects, which seriously detracts from the appearance or the edible or marketing quality of the individual Brazil nut. The following defects shall be considered serious damage:

(a) Split, broken, or punctured shells when the kernel is plainly visible through a split, cracked, or punctured shell without application of pressure;

(b) Oil stains when affecting an aggregate area of more than 50 percent of the shell;

(c) Mold when more than 50 percent of the surface of the shell is affected by a slight mold growth or when any mold growth seriously detracts from the appearance of the shell, or when any mold growth noticeably affects the kernel;

[2] The average moisture content of whole nuts or of kernels may be determined by moisture meter, subject to verification by oven drying.

(d) Discoloration when affecting more than 50 percent of the flesh of the kernel; and,

(e) Rancidity or decay.

The amended U.S. Standards for Grades of Brazil Nuts In The Shell contained in this subpart shall become effective August 25, 1966, and will thereupon supersede the U.S. Standards for Grades of Brazil Nuts In The Shell which have been in effect since October 1, 1964 (7 CFR 51.3500–51.3511).

Dated: July 22, 1966.

G. R. GRANGE,
Deputy Administrator,
Marketing Services.

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