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GOVERNMENT STANDARDS FOR SPICES.

COMPILED BY EARL B. PUTT AND HARVEY A. SEIL.*

CONTENTS.

Standards of the United States Pharmacopœia, National Formulary and the United States Department of Agriculture for the following Spices and related products:

Allspice, N. F.	Ginger (Jamaica, African,	paprika, Rozsapaprika
Anise, U. S. P.	Calicut, Cochin, Japanese,	Rose Paprika).
Capsicum, U. S. P.	U. S. P.)	Koenigspaprika, King's Pa-
Caraway Seed, U. S. P.	Mace, N. F.	prika.
Cardamom Seed, U. S. P.	Marjoram.	Spanish Paprika.
Celery Seed, N. F.	Black Mustard, U. S. P.	Black Pepper, U. S. P.
Chillies (Bombay, African,	Mustard Flour.	Cayenne Pepper, U. S. P.
Indian, Talay, Cherries).	French Mustard.	Red Pepper.
Cinnamon (Cassia, Ground	German Mustard.	White Pepper.
Cassia, Ceylon and Saigon,	Ground Mustard.	Pimenton (Pimiento, Span-
U. S. P.)	Mustard Paste.	ish Paprika).
Cloves, U. S. P.	Prepared Mustard.	Poppy Seed.
Coriander Seed, U. S. P.	White Mustard, U. S. P.	Saffron, N. F.
Cumin Seed.	Nutmeg, U. S. P.	Sage.
Dill Seed.	Paprika.	Star Anise.
Fennel Seed, U. S. P.	Hungarian Paprika (Rosen-	Thyme, N. F.

ALLSPICE, Pimenta, N. F.†—N. F. Requirements: Not more than 5% stems or other foreign matter, crude fiber not over 25%, ash not more than 6%.

Department of Agriculture requirements: Not less than 8% of quercitannic acid, not more than 25% crude fiber, not over 6% total ash, not more than 0.4% of ash insoluble in hydrochloric acid. (*Circular* 136.)

ANISE, Aniseed, U. S. P.†—U. S. P. Requirements: Not more than 3% of foreign seeds or other vegetable matter. Not more than 9% ash.

Department of Agriculture requirements: Not more than 9% ash, not more than 1.5% ash insoluble in hydrochloric acid, not more than 3% foreign matter. (*Circular* 136.)

CAPSICUMS, U. S. P., Cayenne Peppers, African Chillies.—U. S. P. requirements: Not more than 2% of stems, calyxes or other foreign matter, not less than 15% of non-volatile ether extract, not more than 7% ash, not more than 1% ash insoluble in hydrochloric acid.

* Formerly Experts, U. S. Dept. of Agriculture.

† NOTE.—The initials "N. F." following a name indicate that the article is official in the National Formulary, one of the official standards of the Food & Drugs Act.

Articles marked "U. S. P." are official drugs of the United States Pharmacopœia, Ninth Revision, which is also a legal standard under the Food and Drugs Act.

Where no qualifying mark thus identifies a spice in the above list, it is not official either in the National Formulary or the United States Pharmacopœia and the standard given is only that established by the Department of Agriculture. It should be noted, however, that standards established by the Department of Agriculture, when authorized as they usually are by the Secretary of Agriculture, have the same legal basis as the more formal requirements of the United States Pharmacopœia and National Formulary.

Department of Agriculture requirements: Not less than 15% of non-volatile ether extract, not more than 1.5% starch, not more than 28% crude fiber, not more than 8% ash, not more than 1.25% ash insoluble in hydrochloric acid. (*Circular 136.*) Not more than 2% stems, not more than 10% of moldy or wormy pods.

CARAWAY SEED, U. S. P.—U. S. P. requirements: Not more than 3% foreign matter, not more than 8% total ash.

Department of Agriculture requirements: Not more than 8% total ash, not more than 1.5% of ash insoluble in hydrochloric acid. (*Circular 136.*)

CARDAMOM SEED, U. S. P.—U. S. P. requirement: not more than 8% ash.

Department of Agriculture requirements: Not over 8% total ash, not more than 3% ash insoluble in hydrochloric acid. (*Circular 136.*)

CELERY SEED, N. F.—N. F. requirements: Not more than 10% foreign matter, not more than 8% ash.

Department of Agriculture requirements: Not more than 10% total ash nor more than 2% ash insoluble in hydrochloric acid. (*Circular 136.*)

CHILLIES: The large varieties, *i. e.*, Bombay, Indian, Talay, Cherries.

Department of Agriculture requirements: Not more than 5% stems, nor more than 10% by weight of moldy or wormy pods.

CHILLIES, African (see CAPSICUMS).

CINNAMON: Cassia, classed by Department of Agriculture *Circular 136*, as same as Saigon Cinnamon.

CINNAMON, Ground; Ground Cassia: The powder made from cinnamon and contains not more than 5% of total ash, nor more than 2% ash insoluble in hydrochloric acid.

CINNAMON CEYLON, U. S. P.—U. S. P. requirements: Not more than 3% of the outer bark or other foreign matter, not more than 6% ash, not more than 2% of ash insoluble in hydrochloric acid, not less than 0.5% of volatile extractive, soluble in ether.

CINNAMON SAIGON, U. S. P.—U. S. P. requirements: Not less than 2% of volatile extractive soluble in ether, not more than 6% ash, nor more than 2% of ash insoluble in hydrochloric acid.

CLOVES, U. S. P.—U. S. P. requirements: Not more than 5% of peduncles, stems or other foreign matter, not less than 10% of volatile ether extract, not more than 8% ash, nor more than 0.5% of ash insoluble in hydrochloric acid.

Department of Agriculture requirements: Not more than 5% clove stems, not less than 15% volatile ether extract, not less than 12% of quercitannic acid, not more than 10% crude fiber, not more than 7% total ash, not more than 0.5% of ash insoluble in hydrochloric acid. (*Circular 136.*)

CORIANDER SEED, U. S. P.—U. S. P. requirements: Not more than 5% of other fruits, seeds or foreign matter, not less than 0.5% of ether-soluble volatile extractive, not more than 7% ash.

Department of Agricultural requirements: Not more than 7% total ash, not more than 1.5% of ash insoluble in hydrochloric acid, not less than 95% sound seeds. (Bored or wormy seeds are considered as foreign matter.) (*Circular 136.*)

CUMIN SEED.—Department of Agriculture requirements: Dried fruit of *Cuminum cyminum*. Contains not more than 8.5% total ash, not over 1.5% of ash insoluble in hydrochloric acid, nor more than 4% foreign matter. (*Circular 136, S. R. A. 19.*)

DILL SEED.—Department of Agriculture requirements: Dried fruit of *Anethum graveolens* containing not more than 10% total ash nor more than 3% of ash insoluble in hydrochloric acid.

FENNEL SEED, U. S. P.—U. S. P. requirements: Not more than 4% foreign matter, nor more than 9% ash.

Department of Agriculture requirements: Not more than 9% total ash, not more than 2% of ash insoluble in hydrochloric acid, not more than 4% foreign matter. (*Circular 136.*)

GINGER, U. S. P.—Jamaica, African, Calicut, Cochin and Japanese gingers are all included in the U. S. P. definitions of GINGER.

U. S. P. requirements: Not less than 8% of cold water extract, not less than 2% of ether-soluble, non-volatile extract, not less than 4% of alcohol-soluble extractive and not more than 8% of ash.

Department of Agriculture requirements: Contains not less than 42% starch, not more than 8% crude fiber, not more than 1% lime, not less than 12% of cold water extract, not more than 7% of total ash, not more than 2% of ash insoluble in hydrochloric acid, not less than 2% of ash soluble in cold water. Jamaica Ginger is ginger grown in Jamaica. It contains not less than 15% of cold water extract, and conforms in other respects to the standards for Ginger. (*Circular 136.*)

MACE, N. F.—N. F. requirements: Free from adulteration with Bombay Mace. Contains not less than 8% of volatile ether extract, not less than 20% and not more than 30% of non-volatile ether extract, not more than 3% of ash which is almost completely soluble in hydrochloric acid.

Department of Agriculture requirements: Not less than 20% nor more than 30% of non-volatile ether extract, not more than 10% crude fiber, not more than 3% total ash, not more than 0.5% ash insoluble in hydrochloric acid. (*Circular 136.*)

MARJORAM.—Department of Agriculture requirements: Ash not more than 16%, not more than 4.5% of ash insoluble in hydrochloric acid, stems including petioles and foreign material not more than 10%, ethereal oil not less than 0.6%. (*S. R. A. 14.*)

MUSTARD, BLACK, U. S. P.—U. S. P. requirements: The ripe seeds of *Brassica nigra* containing not more than 5% of foreign matter. Yields allyl isothiocyanate on distillation with steam. Ash not more than 9%.

Department of Agriculture requirements: Yields 0.6% of volatile mustard oil (as in *S. R. A. 20*). Total ash not over 5%, not more than 1.5% of ash insoluble in hydrochloric acid. (*Circular 136.*)

MUSTARD CAKE: "is ground mustard seed, mustard meal, from which a portion of the fixed oil has been removed." (*F. I. D. 192.*)

MUSTARD FLOUR, GROUND MUSTARD, "MUSTARD:" "is the powder made from mustard seed with the hulls largely removed and with or without the removal of a portion of the fixed oil. It contains not more than 1.5% of starch, nor more than 6% total ash." (*F. I. D. 192.*)

MUSTARD FRENCH (see MUSTARD, PREPARED).

MUSTARD, GERMAN (see MUSTARD, PREPARED).

MUSTARD, GROUND, MUSTARD MEAL: "is the unbolted, ground mustard seed and conforms to the standards for mustard seed." (*F. I. D. 192.*)

MUSTARD PASTE (see MUSTARD PREPARED).

MUSTARD PREPARED: "is a paste composed of a mixture of ground mustard seed and, or mustard flour and, or mustard cake, with salt, a vinegar, and with or without sugar (sucrose), spices, or other condiments. In the fat-, salt-, and sugar-free solids it contains not more than 24% of carbohydrates, not more than 12% of crude fiber, nor less than 5.6% of nitrogen, the carbohydrates being calculated as starch." (*F. I. D. 192.*)

MUSTARD, WHITE, U. S. P.—U. S. P. requirements: The ripe seeds of *Sinapis alba*, containing not more than 5% foreign matter. Ash not over 9%. Does not yield allyl isothiocyanate on distillation with steam.

Department of Agriculture requirements: Contains no appreciable amount of volatile oil. Not more than 5% total ash, nor more than 1.5% of ash insoluble in hydrochloric acid. (*Circular 136.*)

NUTMEGS, U. S. P.—U. S. P. requirements: Reject broken or wormy kernels. Ash not more than 5%.

Department of Agriculture requirements: Not less than 25% of non-volatile ether extract, not more than 10% crude fiber, not more than 5% ash, nor more than 0.5% ash insoluble in hydrochloric acid. Not more than 20% of the nutmegs should show distinct evidence of mold.

PAPRIKA.—Department of Agriculture requirements: Dried ripe fruit of *Capsicum annuum*. It contains not more than 8.5% total ash, nor more than 1% of ash insoluble in hydrochloric acid. The iodine number of its extracted oil is not less than 125 nor more than 136. (*Circular 136.*)

PAPRIKA, HUNGARIAN: Department of Agriculture requirements: "Is Paprika having the pungency and flavor characteristic of that grown in Hungary."

"(a) *Rosenpaprika*, *Rozsapatrika*, *rose Paprika* is Hungarian Paprika prepared by grinding specially selected pods of paprika from which the placenta, stalks and stems have been removed.

It contains no more seeds than the normal pods, not more than 18% of non-volatile ether extract, not more than 23% of crude fiber, not more than 6% of total ash, nor more than 0.4% of ash insoluble in hydrochloric acid."

"(b) *Koenigspaprika*, *King's Paprika* is Hungarian Paprika prepared by grinding whole pods of paprika without selection, and includes the seeds and stems naturally occurring with the pods. It contains not more than 18% of non-volatile ether extract, not more than 23% of crude fiber, not more than 6.5% total ash, nor more than 0.5% of ash insoluble in hydrochloric acid." (*Circular 136.*)

PAPRIKA SPANISH (see PIMENTON).

PEPPER, BLACK, U. S. P.—U. S. P. requirements: Not more than 2% stems or other foreign matter, not less than 6% of non-volatile ether extract, not less than 25% of starch, not over 7% of ash, not more than 2% of ash insoluble in hydrochloric acid.

Department of Agriculture requirements: Not less than 6.75% of non-volatile ether extract, not less than 30% starch, not over 7% total ash, nor more than 1.5% ash insoluble in hydrochloric acid. (*Circular 136.*)

PEPPER, CAYENNE (see CAPSICUMS, U. S. P.).

PEPPER, RED.—Department of Agriculture requirements: The red, dried ripe fruit of any species of Capsicum. It contains not more than 8% of total ash, not more than 1% ash insoluble in hydrochloric acid, stems, not more than 5%, and not over 10% of moldy or wormy pods. (*Circular 136* and unofficial standard.)

PEPPER, WHITE.—Department of Agriculture requirements: Not less than 7% non-volatile ether extract, not less than 52% starch, not over 5% crude fiber, not more than 3.5% total ash, nor over 0.3% ash insoluble in hydrochloric acid. (*Circular 136.*)

PIMENTA (see ALLSPICE).

PIMENTON, Pimiento, Spanish Paprika.—Department of Agriculture requirements: is paprika having the characteristics of that grown in Spain. It contains not more than 18% of non-volatile ether extract, not more than 8.5% of total ash nor more than 1% of ash insoluble in hydrochloric acid. (*Circular 136.*) Not more than 21% crude fiber.

POPPY SEED.—Department of Agriculture requirements: The seed of *Papaver somniferum*. Contains not more than 3% of harmless foreign material, not more than 8% total ash and not more than 1.5% of ash insoluble in hydrochloric acid. (*S. R. A. 19.*)

SAFFRON, N. F.—N. F. requirements: Not more than 10% of yellow styles or other foreign matter, not more than 14% volatile matter at 100° C., not more than 7.5% ash and the ash is not fusible.

Department of Agriculture requirements: Not more than 10% yellow styles, and other foreign matter, not more than 14% of volatile matter when dried at 100° C., not more than 6% ash, not more than 1% ash insoluble in hydrochloric acid. (*Circular 136.*)

SAGE.—Department of Agriculture requirements: Leaves of *Salvia officinalis*. Not less than 1% volatile ether extract, not more than 25% crude fiber, not more than 10% total ash, not more than 1% ash insoluble in hydrochloric acid. (*Circular 136.*) Stems (excluding petioles) and other harmless foreign material not more than 12%. (*Circular 19.*)

STAR ANISE: Department of Agriculture requirements: The dried fruit of *Illicium verum*. It contains not more than 5% total ash. (*Circular 136.*)

THYME, N. F.—N. F. requirements: Tops of *Thymus vulgaris* collected when in flower, not more than 14% ash.

Department of Agriculture requirements: Total ash not more than 14%, not more than 4% ash insoluble in hydrochloric acid. Stems, including petioles, and foreign material not more than 15%. Etheral oil not less than 1%. (*Circular 136* and *S. R. A. 14.*)

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