INSTRUCTIONS FOR INSPECTION

of

CANNED FIELD PEAS

and

CANNED BLACK-EYE PEAS

For Use of USDA Processed Products Inspectors

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

PREFACE

These instructions are designed primarily for Processed Fruit and Vegetable Inspectors of the U.S. Department of Agriculture. They are not intended to be a comprehensive treatise on the subject but give background information and guidelines to assist in the uniform application and interpretation of USDA grade standards and other similar specifications.

These instructions are revised as necessary without public notice and no mailing list is maintained as public advisory of such changes.

The citation of any data, criteria, techniques, illustrations, copyrighted material, or pictorial representation accredited to private authorship is used with the permission of the individuals or sources cited. Unless a specific accreditation is referenced, the information herein has been compiled and/or developed from sources available to the public as well as from technical knowledge of personnel in the Department.

Compliance with the suggested guidelines and other pertinent information herein does not excuse any one from failure to comply with the Federal Food, Drug, and Cosmetic Act or any other applicable Federal or State laws and/or regulations.

Except for official USDA inspection aids or devices and color guides (or standards) produced under license of the Department, the mention of any supplier, patented device, product, brand-name, or equipment does not imply endorsement by the Department over any other similar, or equally effective, material.

Information contained in this instruction is available to the public. Inquiries as to availability of portions of this instruction and copying or reproduction privileges should be addressed to:

Chief
Processed Products Standardization
and Inspection Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
Washington, DC 20250

I N D E X

VARIETIES

Some varieties are more widely grown than others because of resistance to nematodes, cowpea curculio (weevil), and diseases. Growers prefer varieties that yield high and adapt to mechanical harvesting.

Some of the many varieties grown for processing are: Purple Hull, Brown Crowder, White Acre, Lady, Black-eye, Mississippi Silver, and Arkansas 83.

HARVESTING

Until recently, Southern peas were harvested by hand and Pixall machines for commercial canning operations. Several different hand pickings were required during the growing season to harvest the crop.

Now, Pixall machines and mobile combines are used exclusively to harvest the crop. These machines are designed to move through the field and harvest all of the crop at one time. Combines do not recover peas from immature pods. To increase yield, growers wait until few green pods are present before the crop is harvested.

Combines incorporate foreign materials (sand, dirt, pieces of plant material, etc.) with the harvested peas. These materials must be removed before canning.

Combine peas constitute the main source of raw material for canned peas. Few intense green peas are found in combine peas.

PROCESSING

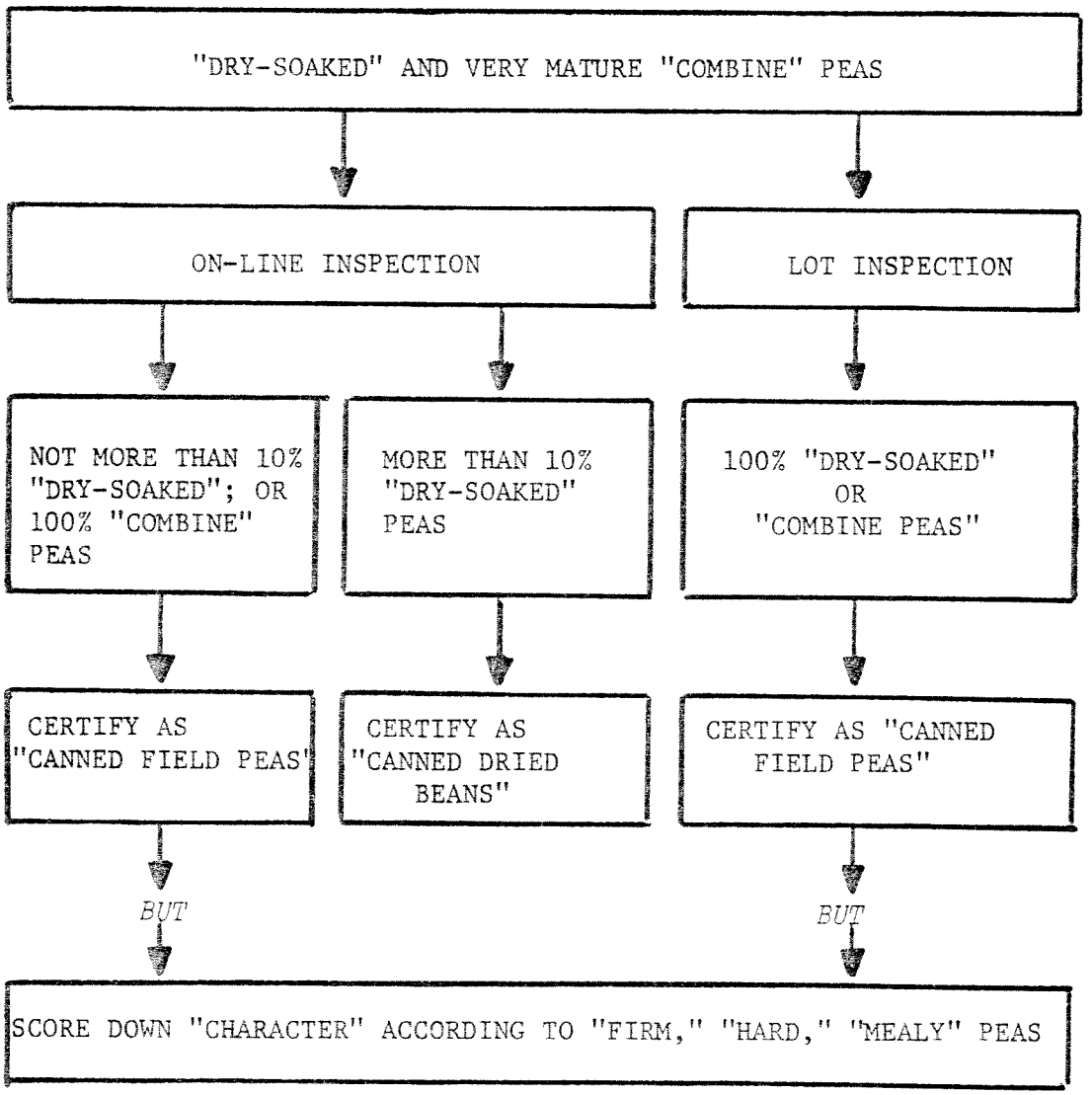
Empty cans are filled with peas and hot brine. A closing machine places lids on the cans and seals them. Hot brine spills over onto the sides of the cans as they are sealed. Unless this spillage is washed from the can prior to cooking, it bakes onto the can exterior. This is one of the causes of rusting and pinholing of cans during storage.

PRODUCT DESCRIPTION

FDA "Standards of Identity" require that canned field peas and canned black-eye peas be prepared from succulent peas. "Dry-soaked" peas (prepared from seed-dry peas) are often added to succulent peas. While this practice is a deviation from the FDA "Standards of Identity," it is difficult to prove under "lot inspection."

"Combine peas" are in between young, tender, green Southern peas and "dry-soaked" peas. They are dry enough to enable harvesting by field shelling, but are too high moisture to enable storage without processing. They are not "dry-soaked" peas. Also, there are many different degrees of maturity in "combine peas."

If "dry-soaked" peas or "combine peas" are used in the product, certify it as follows:



DRAINED WEIGHT AND COUNT OF SNAPS

Wait until at least 48 hours after packing to make drained weight determinations.

After determining the drained weight of the peas, separate the snaps from the peas, weigh, and record the drained weight and count of snaps.

STYLE

Without snaps.

Consider any snaps present in canned peas that are labeled or declared as "without snaps" as extraneous vegetable material (EVM). Score EVM under the factor of defects.

With snaps.

If canned peas contain snaps, the pods must be of field pea plant origin. Cut green beans cannot be used as substitutes.

"Field peas with snaps" should not exceed 10 percent, by weight, of snaps. If snaps exceed the 10 percent limit, consider the product as "field peas and snaps."

Definition of a snap. Snaps may be any length. The pods may be snapped or cut. Two parts of a pod that is split lengthwise is "one snap."

Previously processed snaps. Snaps may be from previously frozen, canned, or brined pods. Snaps must not affect the overall appearance or overall flavor of the product because of excessive salty taste or discoloration.

Count requirements of "field peas with snaps."

Sample Average	Not less than 1 snap per 4 ounces total contents (net weight).
Individual cans	Not more than: 1 can in 13, 2 cans in 29, 3 cans in 48, 4 cans in 60, may have less than 2 snaps in a single can

VARIETAL TYPES

Black-eye peas.

California Black-eye - white or tan with black hilum.

Purple Hull - white or tan with brown hilum.

Other varieties having black or brown hila and a bean shape, including Arkansas 83.

Field peas.

Cream peas or White Acre - solid cream color.

Crowder peas - solid tan or brown color and blunt ends, including Mississippi Silver.

Lady - solid creamy-white.

Other varieties, such as Whippoorwill.

SIMILAR VARIETAL CHARACTERISTICS

Canned field peas must comply with this requirement to grade above Substandard. The canned field pea standards don't provide for mixed varietal types, the frozen field pea standards do provide for mixed types.

Allow a sample average of 5 peas with noticeably different varietal characteristics, from the predominating varietal type, in each 16 ounces net contents of canned field peas. Allow no more than 10 dissimilar peas in each 16 ounces net contents in any individual can.

Some varietal types are not objectionable if mixed together. Use the following guideline:

Not objectionable	Arkansas 83's and Purple Hull
	Purple Hull and Black-eye
	Brown Crowder and Mississippi Silver
Objectionable	Cream Peas and Brown Crowder
	Black-eye and Crowder

FLAVOR AND ODOR

Normal flavor and odor is a prerequisite requirement for all grades above Substandard. Assign the grade of Substandard to all edible sample units that fail normal flavor and odor. "Off-flavor" is any objectionable flavor or odor. Consider all flavor deviants as quality deviants and allow them collectively with other quality deviants.

Salt.

A good salt balance is expected in canned peas unless the product is labeled or declared as containing "no added salt." Consider sample units containing no added salt, when salt is normally expected or declared on the label, or too much salt, as quality deviants to normal flavor. If brined snaps are used in canned peas, the snaps should not be so excessively salty as to affect the overall flavor of the product.

Do not downgrade for lack of salt in canned peas packed with "no added salt," and labeled or declared as "no salt."

COLOR

Color is not limiting in grade C. Grade C color in an otherwise grade A sample unit is acceptable, provided, the total score is 85 points or more.

Dark pigmentation may leach from peas with dark hila during processing. This produces a grayish cast to the skins and cotyledons. Score this grayish cast against color. This is also an indication of "dry-soaked" peas.

Occasionally, peas in the bottom of large containers are scorched during heat processing. If the color of the peas in the entire bottom portions of the container is seriously affected, assign a Substandard score for color.

Greater variation is expected in the color of light-color varieties (black-eye, purple hull, cream, etc.), than in reddish-brown or brown peas. Further, heat processing affects the overall color of the light varieties. This is noticed more in Number 10 cans because of the longer heat process required for sterilization.

EDTA is permitted by FDA. EDTA tends to brighten the overall appearance of the peas. It is especially effective in brightening the appearance of "dry-soaked" peas.

DEFECTS

Use a gram scale to make the defects determination. Separate and weigh each category of defects. Disregard any slight or insignificant discoloration which does not affect the appearance or eating quality of the peas.

Extraneous vegetable material (EVM).

In canned peas with snaps do not count pods as EVM. In canned peas without snaps, count pods as EVM.

Unstemmed snaps are EVM in either field peas with snaps or field peas without snaps.

"Combine" peas contain large amounts of EVM when they are received at the cannery. Thorough sorting is required to remove this material.

Mashed or broken.

"Combine peas" receive mechanical damage which increases the amount of loose skins and broken cotyledons. Sprouted peas are occasionally encountered. If the pea is damaged by the sprout, count it as broken. Include the sprout itselt (attached or detached) in the weight of canned peas scoreable against the allowance for broken peas. Loose skins are more prevalent in some varieties, such as cream peas.

Blemished.

Green peas in mechanically harvested peas often oxidize and turn brown. Score noticeably discolored peas as blemished.

Weevil damage occurs as visible holes eaten into the cotyledons or as discoloration commonly called "weevil sting." Consider the damage insignificant or scoreable, depending upon the extent to which it is noticeable. Score units affected by larva holes and dark discoloration ("stings") as blemished. Slight discoloration of light-colored "stings" is insignificant.

DEFECTS (continuation)

Sand and grit.

Although the standards do not specifically mention sand and grit, consider it at the time the peas are chewed to determine maturity. Also, the liquor may contain grit if the peas are noticeably gritty. Use a small pyrex beaker to check for grit in the liquor. Set the beaker in the tray and slowly move it around through the liquor. Any detectable amount of grit will impart a scratching noise.

Canned peas must be practically free of earthy materials in any grade above Substandard. After chewing the peas, score any gritty material as Substandard. Consider gritty sample units as quality deviants, collectively, and allow with other deviants.

Cowpea curculio.

Consider cowpea curculio as an unavoidable defect in field peas and black-eye peas. Some varieties of crowder peas and the California black-eye are more susceptible than other varieties.

The greatest damage from the cowpea curculio is done by the larvae feeding on the seed within the green pods. Shelled peas with curculio damage have small dark spots present which may or may not contain an egg or larva. These small dark spots are commonly called "weevil stings."

The curculio is legless and C-shaped. Its body is pale yellow and the head is brown. The larva is less than 1/4-inch in length when full grown.

A magnifying glass is helpful in detecting small larvae. "Weevil stings" cause blemished units if the appearance or eating quality is affected.

See File Code 172 for the method of analysis and the level of infestation permitted.

CHARACTER

The advent of "combine peas" has placed a large amount of hard peas in the raw product used for canning. Soaking and cooking may or may not make these peas tender. Also, some processors make a practice of adding a percentage of "dry-soak" (seed-dry) peas to more succulent peas.

Score the factor of character in relationship to the amount of estimated "dry-soaked" or "combine peas" that have been added. Character is very subjective and "firm" peas, "mealy" peas, and "hard" peas must be chewed to determine their overall effect on the eating quality. Most "combine peas" would fall in the "nearly mature" classification. If the peas are hard, classify the sample unit Substandard.

Snaps are required to be succulent pods. If the product contains snaps, consider the character of the snaps too. Tender snaps are required in grade A. However, immature field pea pods do not have the same tenderness as might be expected in green beans. Make allowances for the natural characteristics of the field pea pod.

If "dry-soaked" peas have been added to the succulent peas, specific characteristics of these peas are noticeable. Some of these are as follows:

1. Large, uniform size peas;
2. Practically uniform color;
3. Uniform, dark brown or black hila;
4. Starchy, viscous liquor (heavy drained weights will also cause this condition);
5. Grayish overall cast (EDTA decreases this condition);
6. Excessive ruptured peas with granular texture; and
7. Alcohol insoluble solids (AIS) may be 25 % or more and ascorbic acid content is 1/2 milligram per 100 grams or less.

Starch gelation.

Succulent legumes are subject to starch gelation. Gelation may occur in the peas or in the liquor. Some amount of starch gelation should be expected in canned field peas.