

SECTION C

This document covers thermostabilized beef strips with green peppers and gravy packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-B-025, BEEF STRIPS WITH GREEN PEPPERS AND GRAVY, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements document.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

C. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

D. Appearance.

(1) General. The finished product shall be beef strips with diced green peppers and gravy. The packaged food shall be free from foreign materials.

(2) Beef strips. The beef strips shall be produced from whole muscle beef cuts shall be sizes typically produced by a 1/2 inch by 1/2 inch by 3 inch dicer setting, shall be practically free of bone or bone fragments, cartilage, coarse connective tissue, tendons or ligaments, and glandular material. The beef strips shall have a characteristic cooked beef color. Not less than 50 percent by weight of beef strips in the packaged product shall be 1 inch or more in the longest dimension.

(3) Green peppers. The green peppers shall be sizes typically produced by a 1/4 inch dicer setting. Not less than 75 percent by weight of diced sweet green peppers in the packaged product shall be 1/4 inch dices.

(4) Gravy. The gravy shall be an opaque, dark reddish brown to dark brown color.

E. Odor and flavor. The packaged food shall have an odor and flavor of cooked beef and cooked green peppers in a beef flavored brown gravy. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Beef strips. The beef strips shall be moist and tender.

(2) Green pepper dices. The green pepper dices shall be slightly soft to slightly firm.

(3) Gravy. The gravy shall be smooth.

G. Net Weight. The average net weight shall be not less than 96 ounces. No individual polymeric tray shall have a net weight of less than 94 ounces.

H. Drained weight. The average drained weight of beef strips and diced green peppers shall be not less than 46.0 ounces. The drained weight of beef strips and diced green peppers in an individual polymeric tray shall be not less than 42.0 ounces.

I. Palatability. The finished product shall be equal to or better than the approved first article when applicable, or other approved model, in palatability and overall appearance.

J. Analytical requirements.

(1) Fat content. The fat content shall be not greater than 9.0 percent.

(2) Salt content. The salt content shall be not less than 0.5 and not greater than 1.3 percent.

K. Viscosity. The viscosity of the gravy shall be not less than 7.0 cm per ten seconds and not greater than 20.0 cm per ten seconds.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS PROVIDED FOR INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY REQUIREMENT.

A. Ingredients/formulation. Ingredients and formulation percentages for the gravy may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Water and broth	86.37
Modified high opacity starch <u>1/</u>	6.00
Dehydrated soup stock	2.92
Soy sauce	2.68
Dehydrated 1/4 inch diced sweet green peppers	1.89
Salt <u>2/</u>	0.75
Granulated white sugar	0.75
Lecithin	0.25
Garlic powder	0.08
Ground black pepper	0.05

1/ The total amount of starch in the gravy formula may be adjusted, if necessary, to ensure compliance with the finished product viscosity requirements.

2/ The total amount of salt in the gravy formula may be adjusted as necessary to produce a product that complies with the finished product salt requirement.

B. Product preparation. Percentages for product preparation may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Cooked beef strips	60.38
Gravy	39.62

SECTION D

D-1 PACKAGING

A. Preservation. Product shall be filled into polymeric trays and the trays with protective sleeves, shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays. Verification testing and inspection of trays, lids and sleeves shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality

Assurance Provisions of Section E of this Performance-based Contract Requirements document.

B. Polymeric tray closure. The filled, sealed, and processed tray shall be securely closed.

D-2 LABELING

A. Polymeric tray body. One side of each polymeric tray shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. To avoid erroneous marking of trays, the product name, lot number and filling equipment number shall be applied prior to processing. All other tray marking may be applied before or after processing. If these markings are applied along the tray body side (see figure 1 of MIL-PRF-32004), or if applied along the tray body end, are not readily legible in low light conditions, a small, easily legible label detailing product name and number of portions shall be applied along one tray body end, but not over any existing tray markings. 1/

Tray body markings shall include:

- (1) Product name. Commonly used abbreviations may be used when authorized by the inspection agency.
- (2) Tray code includes: 2/
Lot Number
Filling equipment identification number
Retort identification number
Retort cook number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid prior to processing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body after processing.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 21 December 2000 would be coded as 0356). The Julian code shall represent the day the product was packaged into the tray and processed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic elements, shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

- (1) Lid labeling shall include:
Product name
Ingredients
Net weight
Name and address of packer
Official establishment number (for example, EST 38) or a three letter code identifying the establishment
- (2) Lid labeling shall also show the following statements:

TO HEAT IN WATER: Submerge unopened tray in water. Bring water to a boil. Simmer gently 40-45 minutes. Avoid overheating (tray shows evidence of bulging).

WARNING: Do not heat tray in oven.

TO TRANSPORT AFTER HEATING: Insert tray back into protective sleeve to protect during transport. If sleeve is unavailable, stack trays lid-to-lid with fiberboard pads in between.

CAUTION: Use care when opening as pressure may have been generated within the tray.

TO OPEN: Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

SUGGESTION: Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

YIELD: Serves 18 portions of approximately 2/3 cup each.

D-3 PACKING

A. Packing for shipment to ration assembler. Four filled, sealed, processed and sleeved polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The sleeved trays shall be placed flat with the first two trays placed with the lids together and the next two trays with the lids together. The inside of each box shall be provided with a box liner. The box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Two (2) sample units of each item produced shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within two (2) working days upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality. Failure of samples to conform to all such characteristics may be cause for rejection.

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in trays. The sample unit shall be the contents of one tray. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in Table I below. The trays shall be heated in accordance with the heating instructions from the tray label prior to conducting any portion of the product examination. The samples for drained weight inspection shall be selected using the same sampling criteria as above.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Bone or bone fragment measuring more than 0.3 inch in any dimension.
102		Less than 50 percent by weight of beef strips are not 1 inch or more in the longest dimension.
	201	Less than 75 percent by weight of green pepper dices are not 1/4 inch dices.
	202	Gravy not opaque, dark reddish brown to dark brown color.
	203	Total weight of cartilage, coarse connective tissue, tendons or ligaments, and glandular material is more than 2.0 ounces.
		<u>Odor and flavor</u>
103		The packaged food does not have an odor or flavor of cooked beef and cooked green peppers in a beef flavored brown gravy.
		<u>Texture</u>
	204	Beef strips not moist or not tender.
	205	Sweet green peppers not slightly soft to slightly firm.
	206	Gravy not smooth.
		<u>Net weight</u>
	207	Net weight of an individual polymeric tray less than 94.0 ounces. <u>4/</u>
		<u>Drained weight</u>
	208	Drained weight of beef strips and diced green peppers in an individual polymeric tray is less than 42.0 ounces. <u>5/</u>

1/ The presence of any foreign material such as but not limited to, dirt, insect parts, hair, wood, glass, metal, or mold or the presence of any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Size and whole muscle beef s requirement for beef strips and green peppers shall be verified by certificate of  performance.

4/ Sample average net weight less than 96 ounces shall be cause for rejection of the lot.

5/ Sample average drained weight less than 46.0 ounces shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Commercial sterility shall be verified in accordance with USDA/FSIS regulations.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray and lid. Results shall be reported to the nearest 1 ounce.

(4) Drained weight. The free liquid in the polymeric tray shall be poured off, strained through a U.S. Standard No. 8 sieve, and reserved for viscosity determinations. The remaining contents of the polymeric tray shall be poured into a flat bottom container. A minimum of three times the polymeric tray's volume of 180° to 190°F water shall be added to the container so as to cover the contents. The contents and water shall be agitated so as to fully dissolve the gravy without undue breakup of the meat pieces. The contents shall then be poured into a U.S. Standard No. 8 sieve in a manner that will distribute the product evenly over the sieve. Sieve area shall be such that the distributed product does not completely cover all the openings of the sieve. The sieve shall be tilted at such an angle to assure complete drainage of liquid from the product. Drain product for 2 minutes before determining the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.5 ounce.

(5) Gravy viscosity. Viscosity testing shall be performed by collecting the free liquid from each of the samples used to determine the drained weight. The gravy temperature at time of testing shall be 100°F \pm 1°F (37.8°C \pm 5°C). Any result not conforming to the requirements specified in Section C of this Performance-based Contract Requirements shall be cause for rejection of the lot.

(6) Analytical. The sample to be analyzed shall be a composite of three filled and sealed polymeric trays which have been selected at random from the lot. The composited sample shall be prepared (see NOTE) and analyzed in accordance with the following methods of the Official Methods of Analysis of AOAC International:

<u>Test</u>	<u>Method Number</u>
Fat	985.15
Salt	935.47

Test results shall be reported to the nearest 0.1 percent. Any nonconforming results shall be cause for rejection of the lot.

NOTE: The USDA will use AOAC method 983.18 for preparation of the sample.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS, POLYMERIC TRAY)

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the "tray" and the polymeric tray with the lid shall be referred to as the "container". The polymeric tray with protective sleeve and polymeric tray material shall be examined for the characteristics listed in table I of

MIL-PRF-32004, Packaging of Food in Polymeric Trays. The lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

<u>Prior to processing</u>			
<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1

<u>After processing</u>			
<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Protective sleeve	Containers	1 container	S-1
Residual gas	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

(2) Examination of container. The container with protective sleeve removed shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

<u>Category</u>		<u>Defect</u>
<u>Major A</u>	<u>Minor</u>	
101		Polymeric tray lid or body labeling missing, incorrect or illegible.
	201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IV. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Arrangement or number of polymeric trays not as specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

C. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3507 Loads, Unit: Preparation of Semiperishable Subsistence Items
DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-32004 Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing

PCR-B-025
21 December 2000
W/CHANGE 01, 18 Nov 03

Fiberboard Shipping Containers
D 5118 Standard Practice for Fabrication of Fiberboard Shipping Boxes
AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

AMSRD-NSC-CF-F(Valvano/4259)

18 November 2003

TO: DSCP- HRUT (Charya /3832)

Subject: ES04-015; Document Changes; PCR-B-025 Beef Strips with Green Peppers and Gravy, Packaged in a Polymeric Tray; PCR-B-005 Beef Strips with Green Peppers and Gravy, Packaged in a Tray Pack Can; insert whole muscle requirement for beef strips

1. Based on the recent failure of two First Article submissions/evaluations of the subject products, RDECOM determined that the changes cited below need to be made to the subject documents. Previous contractors used whole muscle meat cuts to meet technical requirements and the use of chunked and formed meat strips did not produce a quality item.
2. Natick recommends that DSCP implement the changes highlighted in the enclosed files for the current, pending and future procurements until the subject documents are formally amended or revised.
 - (a) Sec C-2,D,(2), line 1 - after "beef strips" insert "shall be produced from whole muscle beef cuts and ".
 - (b) Sec E-5, Table I, footnote 3 - after "Size" insert "and whole muscle beef cuts".
3. POC for this action is Wayne Swantak, x4938.

2 encls

DONALD A. HAMLIN
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R Valvano

CF: NSC:	CF: DSCP & SVCs:		
Valvano	Alkoshnaw	Malason	
Hamlin	Capt Bedford,		
Harrington	Byrd	Miller	Paster
Richards	Dyduck	Salerno	
Swantak	Ferrante	Spencer	
Trottier	Henry	Kasa	