



United States

Department of
Agriculture

Agricultural
Marketing
Service

Fruit and Vegetable
Division

Processed Products
Branch

Grading Manual for Canned Green and Canned Wax Beans

Effective June 1993

This manual is designed for Processed Products Branch Personnel of the U.S. Department of Agriculture. Its purpose is to give background information and guidelines to assist in the uniform application and interpretation of U.S. grade standards, other similar specifications and special procedures.

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SAMPLING PROCEDURES

- A. **Follow** the general procedures and instructions as outlined in File Codes 109-A-1 and 120-A-1.
- B. **Follow** the procedures in Condition of Container File Code 125 when a formal condition of container is required.
- C. **Follow** Table I and Table II Minimum Sampling Rates for Canned Green and Canned Wax Beans when sampling this product.
- D. When additional containers are required in Group 1, **draw and separately identify (mark)** all of the containers. For example, using Table II, if the sampling rate specifies six (6) containers, and the total number of containers needed is 24, **draw** four (4) adjacent containers per sample unit. **Identify** the containers as 1a, 1b, 1c, 1d; 2a, 2b, 2c, 2d; etc.

Table I

Minimum Sampling Rates for Canned Green and Canned Wax Beans

	Group 1 (up through 303) <u>1/</u>		Group 2 (no. 1 sq. thru 3 cyl.)		Group 3 (Exceeds 3 cyl.)	
	24 per case	48 per case	12 per case	24 per case	6 per case	12 per case
No. of Sample Units	Cases	Cases	Cases	Cases	Cases	Cases
3	N/A	N/A	125 or less	63 or less	125 or less	63 or less
6	500 or less	250 or less	126 to 500	64 to 250	126 to 500	64 to 250
13	501 to 1625	251 to 813	501 to 1625	251 to 813	501 to 1625	251 to 813
21	1626 to 3500	814 to 1750	1626 to 3500	814 to 1750	1626 to 3500	814 to 1750
29	3501 to 6042	1751 to 3021	3501 to 6042	1751 to 3021	3501 to 6042	1751 to 3021
	8z Tall	211 X 304	No. 2	307 X 409	No. 10 603 X 700	
	No. 1 picnic	211 X 400	No. 2 1/2	401 X 411		
	No. 300	300 X 407	No. 3 cylinder	404 X 700		
	No. 1 Tall	301 X 411				
	No. 303	303 X 406				

1/ SEE TABLE II OF THIS MANUAL TO INSURE THAT SUFFICIENT PRODUCT IS SAMPLED FOR GRADING PURPOSES.

NOTE: THE SAMPLING RATES IN THE FOLLOWING TABLE ARE DESIGNED TO INSURE THAT SUFFICIENT PRODUCT IS DRAWN FOR GRADING PURPOSES.

Table II
Sampling Rates for Small Containers
of
Canned Green and Canned Wax Beans

Container Size	Sampling Rate	Minimum Units of Product Needed	Total Number of Containers Needed	Action Draw and Separately Identify (Mark) 4/
8 oz	6	600 <u>1/</u>	24	4 adjacent containers per sample unit.
"	13	600 <u>1/</u>	24	2 adjacent containers per sample unit.
"	21	600 <u>1/</u>	24	3 extra containers throughout the lot.
"	29	600 <u>1/</u>	29	N/A
No. 300 & 303	6	600 <u>1/</u>	12	2 adjacent containers per sample unit.
"	13	1200 <u>2/</u>	17	4 extra containers throughout the lot.
"	21	1200 <u>2/</u>	21	N/A
"	29	2400 <u>3/</u>	34	5 extra containers throughout the lot.

- 1/ 1800 grams for french style.
2/ 3600 grams for french style.
3/ 7200 grams for french style.
4/ Identify the containers as 1a, 1b, 1c, 1d; 2a, 2b, 2c, 2d; etc.

SUGGESTED ORDER OF GRADING

A. Non-quality Factors.

1. **Record** the following applicable information on the tally sheet.
 - a. Name and address of applicant.
 - b. Size and kind of container.
 - c. No. of cases in lot (page 1 only).
 - d. Contract (Cont. No.) or Purchase Order (P.O. No.).
 - e. Label -- or attach a copy -- (page 1 only).
2. **Select** the containers to be used for non-quality and prerequisite evaluation.

NOTE: FOR SMALL CONTAINERS, SELECT 1A, 2A, 3A, 4A, ETC.

3. **Arrange** the containers on the grading table in chronological order by code.
4. **Record** the codes, on the tally sheet, including case codes if available.

NOTE: THE FINAL/AVG COLUMN (COLUMN 8) ON PAGE 1 OF THE TALLY SHEET SHALL BE USED FOR THE SUMMATION OF THE GRADING RESULTS OF THE LOT. COLUMN 8 MAY BE USED FOR RECORDING INDIVIDUAL CONTAINER DATA ON SUCCEEDING PAGES.

IF THERE IS INSUFFICIENT SPACE IN THE CODE SECTION OF THE TALLY SHEET FOR SINGLE LINE INK JET CODES, RECORD THEM AS A DOUBLE LINE CODE. REFER TO THE BACK OF THE TALLY SHEET AND SHOW AN EXAMPLE OF THE ACTUAL CODE THERE.

5. **Determine and record** the net weight of each container using Branch procedures for determination of tares and reading of scales.
6. **Determine and record** the vacuum reading for each container.

NOTE: TO GET A PROPER VACUUM READING, SLIGHTLY ELEVATE ONE SIDE OF THE CAN AND TAKE THE VACUUM READING FROM THE HIGH SIDE.

SUGGESTED ORDER OF GRADING

7. **Open** each container, and for cans, **leave** the lid remaining on top of the product.

NOTE: HEADSPACE MEASUREMENTS MAY BE TAKEN AND RECORDED AT THIS TIME.

8. Using the lid to stem the flow of product, carefully **empty** the contents container by container into tared draining screens that have been placed on a 17 to 20 degree incline in individual grading trays.

9. **Drain (undisturbed)** for 2 minutes, **weigh** and **record** the drained weights on the tally sheet.

NOTE: WHILE THE PRODUCT IS DRAINING EXAMINE THE INTERIOR CONDITION OF THE CONTAINER(S), MAKING NOTE OF ANY UNUSUAL CONDITIONS UNDER "REMARKS" OR ON BACK OF THE TALLY SHEET.

THE PRODUCT MAY ALSO BE VISUALLY EXAMINED FOR THE PREREQUISITE FACTORS OF "VARIETAL CHARACTERISTICS" AND "APPEARANCE" (SEE PREREQUISITE FACTORS BELOW).

10. **Empty** the product from each draining screen into the individual grading trays.
11. **Randomly select** 25 beans from each grading tray to determine, sieve size length of cut, and style.
12. **Record**, if applicable:
 - a. **Type - circle** the applicable information on the tally sheet.
 - b. **Sieve size(s)** and percentage of each.

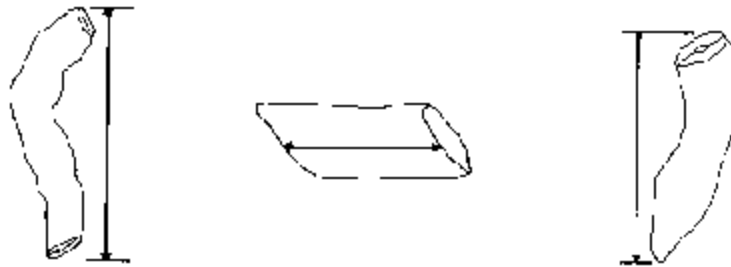
NOTE: USING A SIEVE SIZER DETERMINE THE SIEVE OPENING (SIEVE SIZE) THAT THE NARROWEST WIDTH OR DIAMETER OF EACH BEAN UNIT AT ITS THICKEST PORTION WILL PASS THROUGH WITH NO RESISTANCE.

SUGGESTED ORDER OF GRADING

c. Length of cut.

NOTE: IN CUT STYLE, 5%, BY COUNT, MAY EXCEED THE MAXIMUM LENGTH ALLOWANCE OF 70 MM (2.75 IN).

THE FOLLOWING ILLUSTRATIONS SHOW THE CORRECT METHOD OF MEASURING THE LENGTH OF CANNED GREEN BEANS AND CANNED WAX BEANS.



SUGGESTED ORDER OF GRADING

- d. **Style** - by **placing** a check (✓) mark in the applicable style box on the tally sheet.

NOTE: THE LOT SHOULD BE GRADED FOR THE STYLE IT IS OFFERED.

IF THE LOT CONSISTS OF MORE THAN ONE STYLE, THE APPLICABLE STYLE FOR EACH CONTAINER SHOULD BE RECORDED IN THE "TYPE" COLUMN.

B. Prerequisite Quality Factors.

1. **Evaluate and grade**, on a container-by-container basis, the following prerequisites. **Recording** the letter grade, as applicable, in the appropriate place on the tally sheet.

- a. **Sloughing.**

NOTE: THIS FACTOR SHOULD BE EVALUATED EARLY IN THE GRADING PROCESS AS HANDLING OF THE UNITS TENDS TO ENHANCE THE TENDENCY OF THE UNITS TO SLOUGH.

- (1) **Grade A** should be assigned to those sample units containing no more than a slight amount of sloughing.
- (2) **Grade C** should be assigned to those sample units that are materially affected by sloughing.
- (3) **SStd** should be assigned to those sample units in which the units are seriously affected by sloughing (the beans have a ragged feathery appearance).

- b. **Varietal characteristics.**

- (1) **Grade A** should be assigned to those sample units containing beans of similar varietal characteristics.
- (2) **SStd** should be assigned to those sample units containing beans of dissimilar varietal characteristics.

SUGGESTED ORDER OF GRADING

- c. **Appearance** - use the following guidelines in assigning a grade for appearance:
 - (1) **Good "Grade A"** means the beans are reasonably uniform in color, are reasonably free of loose seeds (for styles other than french sliced), and practically free from areas of insignificant blemish.
 - (2) **Reasonably good "Grade B"** means the beans are reasonably uniform in color and reasonably free from areas of insignificant blemish.
 - (3) **Fairly good "Grade C"** means the beans are fairly uniform in color and fairly free from areas of insignificant blemish.
 - (4) **Poor "SStd"** means the sample unit fails the requirements for Grade C appearance.
- d. **Flavor and odor.**

NOTE: A FEW UNITS AND THE ACCOMPANYING LIQUOR SHOULD BE EVALUATED FROM EACH GRADING TRAY.

- (1) **Good "Grade A"** should be assigned to those sample units containing product that has a "good" (or normal) flavor and odor.
 - (2) **Poor "SStd"** should be assigned to those sample units containing product that has an off flavor or odor.
- e. **Small pieces of pod and odd cuts in french style** - **visually** or **physically separate** the small pieces of pod, and odd cut pieces from each sample unit. **Use** the following guidelines in assigning a grade to each sample unit for this factor.
 - (1) **Practically free "Grade A"** contains not more than **15%**, by weight, of small pieces, loose seeds, and odd cuts.
 - (2) **Reasonably free "Grade B"** contains not more than **20%**, by weight, of small pieces, loose seeds, and odd cuts.
 - (3) **Fairly free "Grade C"** exceeds **20%**, byweight, of small pieces, loose seeds, and odd cuts.

SUGGESTED ORDER OF GRADING

C. Grading of Specified Defects.

- 1. **Determine** the total units of product available in the non-quality/prerequisite samples.
 - a. **Total** the drained weights and **enter** this sum on page 1 of the tally sheet.

NOTE: THE AVERAGE DRAINED WEIGHT MAY ALSO BE FIGURED AND RECORDED AT THIS TIME. CONSULT THE STANDARDS FOR ACCEPTANCE CRITERIA.

- b. Count** the number of beans or **establish** a count to weight relationship for styles other than french style. To establish a count to weight relationship:
- (1) Determine** the average weight of 5 random 100 count sub-samples selected from different grading trays.
 - (2) Use** the following formula to determine the number of units available on a weight basis.

$$\frac{\text{Total Drained Weight}}{\text{Weight of 100 Units}} \times 100 = \text{Number of Units of Product Available}$$

SUGGESTED ORDER OF GRADING

2. **Refer** to the applicable acceptance numbers table in the standards or this manual, and **select** the Units of Product or Grams of Product column -- as applicable for the style -- that will use the maximum amount of product available.

NOTE: FOR CONTAINER SIZES SMALLER THAN **No. 300** REFER TO THE TABLES IN THIS MANUAL. **ALSO** REFER TO THIS MANUAL WHEN THE SAMPLING RATE FOR **No. 300** AND **No. 303** CANS IS **6** CONTAINERS.

FOR OTHER CONTAINER SIZES AND SAMPLING RATES, REFER TO THE TABLES IN THE STANDARDS.

3. **Record** the Units of Product or Grams of Product selected in the "Units of Product Used for Other than Character" and "For Character" in the applicable spaces on page 1 of the tally sheet.

NOTE: THE NUMBER OR WEIGHT OF UNITS EVALUATED FOR CHARACTER MAY BE THE SAME AS THAT SELECTED FOR "OTHER THAN CHARACTER", OR MAY BE TAKEN FROM **TABLE IV** OR **TABLE IV A** OF THIS MANUAL (**100** PLAN CHARACTER).

4. **Count or weigh out** a uniform amount of product from each grading tray to arrive at the sample size selected for the lot as a whole.

NOTE: WHEN USING ONE-HALF OR MORE OF THE PRODUCT FROM ANY CONTAINER, ALL THE EVM IN THE CONTAINER IS TO BE RECORDED.

WHEN THERE IS INSUFFICIENT PRODUCT FOR EVALUATING SPECIFIED DEFECTS ADD THE PRODUCT FROM SAMPLE **1B**, THEN **2B**, THEN **3B**, ETC. UNTIL SUFFICIENT PRODUCT IS OBTAINED.

FOR THESE EXTRA CONTAINERS, YOU NEED NOT EVALUATE THE NON-QUALITY OR PREREQUISITE QUALITY FACTORS. HOWEVER, IF IT IS OBVIOUS THAT SOME OF THESE ADDITIONAL CONTAINERS DEVIATE EXCESSIVELY FROM THE SAMPLE AS A WHOLE, YOU SHOULD: RECONSIDER THE EXAMINATION (E.G., ONE OF THE CONTAINERS NOT IN THE PREDETERMINED NUMBER TO CHECK FOR NON-QUALITY FACTORS IS OBVIOUSLY "SLACK FILLED".) FOLLOW **BRANCH** GUIDELINES AND OTHER INSTRUCTIONS THAT COVER THE DEVIATION IN QUESTION IF YOU RECONSIDER THE EXAMINATION.

SUGGESTED ORDER OF GRADING

5. **Record** in the "(No.) (Wt.) of Units Used from Each Container" column, the count or weight of product -- as applicable for the style -- to be used from each grading tray

NOTE: BY SEPARATING EACH CATEGORY OF DEFECTS INTO SEPARATE AREAS THE FOLLOWING STEPS MAY BE DONE SIMULTANEOUSLY AS YOU EXAMINE THE PRODUCT IN EACH GRADING TRAY.

IF THERE IS MORE THAN ONE (1) CATEGORY OF DEFECTS ON A SINGLE UNIT, PLACE THE UNIT IN THE FIRST APPLICABLE CATEGORY IN THE FOLLOWING SEQUENCE OF GRADING AND THEN TRANSFER IT TO THE OTHER AFFECTED CATEGORIES DURING THE RECORDING PROCESS.

6. **Separate the Extraneous Vegetable Material (EVM)** - the following are examples of extraneous vegetable material:

Green leaves and glass



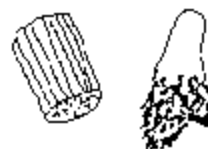
Mitchrady berries



Bitterweed Pod



Bigweed



SUGGESTED ORDER OF GRADING

7. **Separate the Stems** - includes detached stems, unstemmed units and tough or hard unsnipped units as illustrated below.

Tough or Hard Unsnipped Units



Detached Stems



Unstemmed Units



SUGGESTED ORDER OF GRADING

8. **Separate the major blemishes.**
9. **Separate the minor blemishes** - are tallied with major blemishes and **record** as "Total Blemish."

NOTE: EVEN THOUGH A BEAN UNIT HAS MORE THAN ONE MAJOR OR MINOR BLEMISHED AREA ON IT, ONLY ONE MAJOR AND ONE MINOR DEFECT SHOULD BE COUNTED AGAINST IT.

10. **Separate the mechanical damage** - not applicable to french style.
11. **Separate the short pieces** - not applicable to french style.
 - a. **Applicable styles other than whole** - units less than 13 mm (0.50 in) in length.
 - b. **Whole style** - units less than 32 mm (1.25 in) in length.

12. **Separate the tough strings** - will support a 1/2 lb for 5 seconds.

NOTE: TRY TO BREAK (PULL) THE STRING APART, IF AN APPROXIMATE FORCE (PULL) OF 1/2 LB FORCE DOES NOT BREAK THE STRING CONSIDER IT TO BE "TOUGH." IF THE STRING BREAKS EASILY DISREGARD IT. THIS "PULL" TEST MAY TAKE SOME PRACTICE AND SHOULD BE VERIFIED OCCASIONALLY WITH THE OFFICIAL FDA METHOD.

13. **Separate the edible fiber** - is noticeable upon chewing, but may be consumed without objection.

NOTE: LOOK FOR UNITS HAVING JAGGED CUT EDGES IN THE FOLLOWING STEP.

14. **Separate the inedible fiber** - is objectional upon chewing and tends to separate from the rest of the bean material.
15. **Separate defective color** - unit(s) that vary markedly from the color that is normally expected for the variety and grade.

SUGGESTED ORDER OF GRADING

16. **Separate decay** - the acceptance numbers for decay may be found in Tables V and Va of this manual.

NOTE: EXTREME CARE SHOULD BE EXERCISED WHEN DETERMINING DECAY. **BE SURE NOT TO COUNT A UNIT UNLESS DECAY IS POSITIVELY IDENTIFIED.**

UNITS AFFECTED BY DECAY ARE SCORED UNDER DECAY ONLY AND NOT AS DECAY AND MAJOR BLEMISHES.

NOTE: THE FOLLOWING STEP SHOULD BE DONE TO DETERMINE THE ACTUAL GRADE AND NOT JUST THE INTENDED GRADE.

17. **Separate the character** - based on appearance -- the non "A" grade quality units. **Split open** these suspect units and **classify** them as "B", "C", or "SStd" in character.

NOTE: **FLESHINESS** REFERS TO THE AMOUNT OF TISSUE BETWEEN AND AROUND THE SEED CAVITIES OF THE POD AND TO THE DEGREE OF BREAKDOWN OF THE FLESH. **ROUND BEANS CONTAIN MORE FLESH THAN ROMANO OR ITALIAN BEANS.**

GENERALLY, WAX BEANS WILL HAVE MORE BREAKDOWN OF FLESH THAN ROUND GREEN BEANS AT THE SAME STAGE OF MATURITY. THIS SHOULD BE CONSIDERED WHEN EVALUATING WAX BEANS FOR CHARACTER.

AS BEANS BECOME MORE MATURE, THE SEEDS TEND TO ENLARGE AND BECOME MORE MEALY OR STARCHY. THE TEXTURE OF THE SEEDS WILL BECOME MORE CRUMBLY AS THE STARCH CONTENT INCREASES.

18. **Verify** and count or weigh (as applicable for the style) the defects from each grading tray, making sure that units having more than one type of defect are properly counted.
19. **Record** the number or weight of specified defects, as applicable for the style, that were found in each grading tray.
20. **Determine** the total amount of defects found in each category of specified defects and **enter** these figures in the "Final/Average column on page 1 of the tally sheet.

NOTE: **ALSO ENTER THE FINAL GRADES FOR THE PREREQUISITE QUALITY FACTORS ON PAGE 1.**

SUGGESTED ORDER OF GRADING

21. **Compare** the number or weight of specified defects found with the acceptance numbers from the applicable tables in the standards or this grading manual.

NOTE: **SEE "PROCEDURES FOR MIXED QUALITY LOTS" -- THIS MANUAL -- ON LOTS THAT MEET THE ACCEPTANCE NUMBERS BUT YET HAVE POCKETS OF OBVIOUSLY LOWER QUALITY.**

- 22. Enter** the "Lot Grade" on the tally sheet based on the lowest grade assigned to any prerequisite or specified quality factor.

NOTE: THE 600 (1800 GRAMS FOR FRENCH STYLE) PLAN TABLES FOR SPECIFIED DEFECTS, THE 100 PLAN TABLES FOR CHARACTER DEFECTS, AND THE TABLE OF ACCEPTANCE NUMBERS FOR DECAY MAY BE FOUND ON THE FOLLOWING PAGES.

Table III
Acceptance Numbers for Specified Defects
Whole Style Canned Green and Wax Beans
(600 Plan)

Units of Product (600)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	5	7	21
Stems	14	21	32
Major Blemishes	7	14	21
Total Blemishes (Major + Minor)	14	21	49
Mechanical Damage	32	49	63
Short Pieces	136	NO LIMIT	
Tough Strings	10	21	63
Edible Fiber	10	32	63
Inedible Fiber	1	10	32
Color Defectives	32	63	104
"B" Character	63	NO LIMIT	
"C" Character	10	63	NO LIMIT
"SStd" Character	5	10	63

Table IIIa
Acceptance Numbers for Specified Defects
Cut Style Canned Green and Wax Beans
(600 Plan)

Units of Product (600)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	5	7	14
Stems	14	21	32
Major Blemishes	7	14	21
Total Blemishes (Major + Minor)	14	21	49
Mechanical Damage	21	32	63
Short Pieces	49	73	104
Tough Strings	10	21	49
Edible Fiber	10	21	49
Inedible Fiber	1	7	21
Color Defectives	32	63	104
"B" Character	63	NO LIMIT	
"C" Character	10	63	NO LIMIT
"SStd" Character	5	10	63

Table IIIb

**Acceptance Numbers for Specified Defects
Short Cut Style Canned Green and Wax Beans
(600 Plan)**

Units of Product (600)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	2	5	7
Stems	7	10	14
Major Blemishes	7	14	21
Total Blemishes (Major + Minor)	14	21	49
Mechanical Damage	88	104	136
Short Pieces	88	104	136
Tough Strings	10	21	21
Edible Fiber	10	21	49
Inedible Fiber	1	7	21
Color Defectives	32	63	104
"B" Character	63	NO LIMIT	
"C" Character	10	63	NO LIMIT
"SStd" Character	5	10	63

Table IIIc

**Acceptance Numbers for Specified Defects
Mixed Cut Style Canned Green and Wax Beans
(600 Plan)**

Units of Product (600)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	5	7	10
Stems	14	21	21
Major Blemishes	7	14	21
Total Blemishes (Major + Minor)	14	21	49
Mechanical Damage	88	104	136
Short Pieces	88	104	136
Tough Strings	10	21	39
Edible Fiber	10	21	49
Inedible Fiber	1	7	21
Color Defectives	32	63	104
"B" Character	63	NO LIMIT	
"C" Character	10	63	NO LIMIT
"SStd" Character	5	10	63

Table IIId

**Acceptance Numbers for Specified Defects
French Style Canned Green and Wax Beans
(1800 Gram Plan)**

Units of Product (1800 grams)	Grade A	Grade B	Grade C
Extraneous Vegetable Material (No. of pieces)	5	7	21
Stems (No. of stems)	14	21	32
Major Blemishes (Grams)	21	42	63
Total Blemishes (Major + Minor) (Grams)	42	63	189
Tough Strings (No. of strings)	14	32	63
Edible Fiber (No. of pieces)	10	32	63
Inedible Fiber (No. of pieces)	1	10	32
Color Defectives (Grams)	96	189	312
"B" Character (Grams)	777	NO LIMIT	
"C" Character (Grams)	117	408	NO LIMIT
"SStd" Character (Grams)	30	96	219

Table IV

**Acceptance Numbers for Character Defects
for Styles Other than French Sliced
(100 Plan)**

Units of Product (100*3, 6, 13, 21, 29) = --	Grade A					Grade B					Grade C				
	300	600	1300	2100	2900	300	600	1300	2100	2900	300	600	1300	2100	2900
"B" Character	34	63	128	200	272	NO LIMIT									
"C" Character	6	10	19	28	38	34	63	128	200	272	NO LIMIT				
"SStd" Character	3	5	9	13	17	6	10	19	28	38	34	63	128	200	272

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Table IVa

**Acceptance Numbers for Character Defects
French Sliced Style
(300 Plan)**

Grams of Product (300* 3, 6, 13, 21, 29) = --	Grade A					Grade B					Grade C				
	900	1800	3900	6300	8700	900	1800	3900	6300	8700	900	1800	3900	6300	8700
"B" Character	402	777	1647	2631	3609	NO LIMIT									
"C" Character	63	117	234	366	495	213	408	849	1350	1848	NO LIMIT				
"SStd" Character	18	30	57	84	114	54	96	192	297	402	117	219	447	702	954

Table V

**Acceptance Numbers for Decay
(All Styles Except French Sliced)**

Units of Product	400	600	1200	2400	5200	8400	11600
Grade A	4	5	8	15	28	43	57
Substandard	25	35	66	125	259	410	560

Table Va

**Acceptance Numbers for Decay
(French Sliced Only)**

Grams of Product	1200	1800	3600	7200	15600	25200	34800
Grade A	12	15	24	45	84	129	171
Substandard	75	105	198	375	777	1230	1680

NOTE: IF THE ACCEPTANCE NUMBERS FOR SUBSTANDARD ARE EXCEEDED, THE LOT IS **GNC (GRADE NOT CERTIFIED)**.

PROCEDURES FOR GRADING MIXED QUALITY LOTS

If an inspection lot is encountered with individual (suspect) sample units in the sample which seem to be of lower quality than the sample as a whole, take the following action:

- A. **Assemble** 400 (if available) or 100 (minimum) units of product from the "suspect" container(s) regardless of code.
- B. **Compare** the number or weight of defects found, as applicable to the style, with the acceptance numbers from the applicable table in this manual and determine the grade of the suspect sample units.

NOTE: USE TABLES VI, VIA, VIB, ETC., AS APPLICABLE FOR THE STYLE, FOR 400 UNITS (1200 GRAMS FOR FRENCH STYLE) TABLES VII, VIIA, VIIB, ETC, AS APPLICABLE FOR THE STYLE FOR 100 UNITS (300 GRAMS FOR FRENCH STYLE).

- C. **Compare** the grade of the suspect sample units to the grade of the sample as a whole. If the grade of the suspect sample is more than one grade below the grade of the sample as a whole, **certify** to the lowest grade. Otherwise **certify** to the grade of the original inspection results.

NOTE: IF THE APPLICANT REQUESTS CERTIFICATION OF THE "NONSUSPECT" PORTION OF THE SAMPLE, RESAMPLE THE LOT IN ACCORDANCE WITH TABLE II OF THIS MANUAL.

PROCEDURES FOR SINGLE SAMPLE UNITS (UNOFFICIAL SAMPLES)

Branch regulations provide for grading of samples submitted by an applicant. These samples are "unofficial samples" and do not represent a lot. When requested to perform grading on unofficial samples, use the following guidelines:

- A. Each unofficial sample must stand on its own;
- B. Each unofficial sample must contain 400 beans for all styles other than sliced lengthwise style, and 1200 grams for sliced lengthwise style;
- D. **Grade** the sample as outlined in this manual. **Apply** the acceptance numbers from the "Table of Acceptance Numbers for Unofficial Samples", as applicable for the style, found on the following pages of this manual.

Table VI

**Acceptance Numbers for Specified Defects
Whole Style Canned Green and Wax Beans
(400 Plan)**

(Use for Mixed Quality Lots and Unofficial Samples Only)

Units of Product (400)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	4	5	15
Stems	10	15	22
Major Blemishes	5	10	15
Total Blemishes (Major + Minor)	10	15	34
Mechanical Damage	22	34	44
Short Pieces	93	NO LIMIT	
Tough Strings	7	15	44
Edible Fiber	7	22	44
Inedible Fiber	0	7	22
Color Defectives	22	44	71
"B" Character	44	NO LIMIT	
"C" Character	7	44	NO LIMIT
"SStd" Character	4	7	44

Table VIa

**Acceptance Numbers for Specified Defects
Cut Style Canned Green/Wax Beans
(400 Plan)**

(Use for Mixed Quality Lots and Unofficial Samples Only)

Units of Product (400)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	4	5	10
Stems	10	15	22
Major Blemishes	5	10	15
Total Blemishes (Major + Minor)	10	15	34
Mechanical Damage	15	22	44
Short Pieces	34	50	71
Tough Strings	7	15	34
Edible Fiber	7	15	34
Inedible Fiber	0	5	15
Color Defectives	22	44	71
"B" Character	44	NO LIMIT	
"C" Character	7	44	NO LIMIT
"SStd" Character	4	7	44

Table VIb

**Acceptance Numbers for Specified Defects
Short Cut Style Canned Green/Wax Beans
(400 Plan)**

(Use for Mixed Quality Lots and Unofficial Samples Only)

Units of Product (400)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	2	4	5
Stems	5	7	10
Major Blemishes	5	10	15
Total Blemishes (Major + Minor)	10	15	34
Mechanical Damage	61	71	93
Short Pieces	61	71	93
Tough Strings	7	15	15
Edible Fiber	7	15	34
Inedible Fiber	0	5	15
Color Defectives	22	44	71
"B" Character	44	NO LIMIT	
"C" Character	7	44	NO LIMIT
"SStd" Character	4	7	44

Table VIc

**Acceptance Numbers for Specified Defects
Mixed Cut Style Canned Green/Wax Beans
(400 Plan)**

(Use for Mixed Quality Lots and Unofficial Samples Only)

Units of Product (400)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	4	5	7
Stems	10	15	15
Major Blemishes	5	10	15
Total Blemishes (Major + Minor)	10	15	34
Mechanical Damage	61	71	93
Short Pieces	61	71	93
Tough Strings	7	15	27
Edible Fiber	7	15	34
Inedible Fiber	0	5	15
Color Defectives	22	44	71
"B" Character	44	NO LIMIT	
"C" Character	7	44	NO LIMIT
"SStd" Character	4	7	44

Table VIId

**Acceptance Numbers for Specified Defects
French Style Canned Green/Wax Beans
(1200 Gram Plan)**

(Use for Mixed Quality Lots and Unofficial Samples Only)

Units of Product (1200 grams)	Grade A	Grade B	Grade C
Extraneous Vegetable Material (No. of pieces)	4	5	15
Stems (No. of stems)	10	15	22
Major Blemishes (Grams)	15	30	45
Total Blemishes (Major + Minor) (Grams)	30	45	132
Tough Strings (No. of strings)	10	22	44
Edible Fiber (No. of pieces)	7	22	44
Inedible Fiber (No. of pieces)	0	7	22
Color Defectives (Grams)	66	132	213
"B" Character (Grams)	528	NO LIMIT	
"C" Character (Grams)	81	279	NO LIMIT
"SStd" Character (Grams)	21	66	150

TABLE VII

**Acceptance Numbers for Specified Defects
Whole Style Canned Green/Wax Beans
(100 Plan)**

(Use for Mixed Quality Lots Only)

Units of Product (100)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	0	2	5
Stems	3	5	7
Major Blemishes	2	3	5
Total Blemishes (Major + Minor)	3	5	11
Mechanical Damage	7	11	13
Short Pieces	26	NO LIMIT	
Tough Strings	2	5	13
Edible Fiber	2	7	13
Inedible Fiber	0	2	7
Color Defectives	7	13	21
"B" Character	13	NO LIMIT	
"C" Character	2	13	NO LIMIT
"SStd" Character	1	2	13

Table VIIa

**Acceptance Numbers for Specified Defects
Cut Style Canned Green/Wax Beans
(100 Plan)**

(Use for Mixed Quality Lots Only)

Units of Product (100)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	0	2	3
Stems	3	5	7
Major Blemishes	2	3	5
Total Blemishes (Major + Minor)	3	5	11
Mechanical Damage	5	7	13
Short Pieces	11	15	21
Tough Strings	2	5	11
Edible Fiber	2	5	11
Inedible Fiber	0	2	5
Color Defectives	7	13	21
"B" Character	13	NO LIMIT	
"C" Character	2	13	NO LIMIT
"SStd" Character	1	2	13

Table VIIb

**Acceptance Numbers for Specified Defects
Short Cut Style Canned Green/Wax Beans
(100 Plan)**

(Use for Mixed Quality Lots Only)

Units of Product (100)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	0	1	2
Stems	2	2	3
Major Blemishes	2	3	5
Total Blemishes (Major + Minor)	3	5	11
Mechanical Damage	18	21	26
Short Pieces	18	21	26
Tough Strings	2	5	5
Edible Fiber	2	5	11
Inedible Fiber	0	2	5
Color Defectives	7	13	21
"B" Character	13	NO LIMIT	
"C" Character	2	13	NO LIMIT
"SStd" Character	1	2	13

Table VIIc

**Acceptance Numbers for Specified Defects
Mixed Cut Style Canned Green/Wax Beans
(100 Plan)**

(Use for Mixed Quality Lots Only)

Units of Product (100)	Grade A	Grade B	Grade C
Extraneous Vegetable Material	1	2	2
Stems	2	2	5
Major Blemishes	2	3	5
Total Blemishes (Major + Minor)	3	5	11
Mechanical Damage	18	21	26
Short Pieces	18	21	26
Tough Strings	2	5	8
Edible Fiber	2	5	11
Inedible Fiber	0	2	5
Color Defectives	7	13	21
"B" Character	13	NO LIMIT	
"C" Character	2	13	NO LIMIT
"SStd" Character	1	2	13

Table VIId

**Acceptance Numbers for Specified Defects
French Style Canned Green/Wax Beans
(300 Gram Plan)**

(Use for Mixed Quality Lots Only)

Units of Product (300 grams)	Grade A	Grade B	Grade C
Extraneous Vegetable Material (No. of pieces)	1	2	5
Stems (No. of stems)	3	5	7
Major Blemishes (Grams)	6	9	15
Total Blemishes (Major + Minor) (Grams)	9	15	39
Tough Strings (No. of strings)	3	7	13
Edible Fiber (No. of pieces)	2	7	13
Inedible Fiber (No. of pieces)	0	2	7
Color Defectives (Grams)	21	39	63
"B" Character (Grams)	134	NO LIMIT	
"C" Character (Grams)	24	78	NO LIMIT
"SStd" Character (Grams)	6	21	45