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Processed  
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Branch

# Grading Manual for Frozen Cauliflower

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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

**Follow** the general procedures and instructions as outlined in File Codes 109-A-1 and 120-A-1.

**Follow** the procedures in Condition of Container File Code 125 when a formal condition of container is required.

**Follow** Table I and Table II Minimum Sampling Rates Frozen Cauliflower when sampling this product.

**Follow** the thawing and cooking procedures in File Codes 130-A-34 and 130-A-38, and File Code 130-A-32 when a drained weight determination is required.

When additional containers are required, **draw and separately identify (mark)** all of the containers. For example, using Table II - less than 16 oz., if the sampling rate specifies six (6) containers, and the total number of containers needed is 12, **draw** one (1) adjacent containers per sample unit. **Identify** the containers as 1a, 1b; 2a, 2b; 3a, 3b; etc.

**Table I**  
**Minimum Sampling Rates for Frozen Cauliflower**

No. of Sample Units	Group 1 - Up to 1 lb.		Group 2 - Over 1 lb. to 2-1/2 lbs.		Any container over 2-1/2 lbs. use total lbs.
	24 per case		12 per case	16 per case	
Lot	(cases)		(cases)	(cases)	
3	100	or less	100 or less	75 or less	3000 or less
6	101	- 400	101 - 400	76 - 300	3001 to 12000
13	401	- 1300	401 - 1300	301 - 975	12001 to 39000
21	1301	- 2800	1301 - 2800	976 - 2100	39001 to 84000
29	2801	- 4833	2801 - 4833	2101 - 3625	84001 to 145000

**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 Containers of Frozen Cauliflower**

Container Size	Less than 16 oz.					16 oz or greater.				
	3	6	13	21	29	3	6	13	21	29
Sampling Rate										
Minimum Units of Product Needed	50 units					50 units				
Total Number of Containers Needed	8	18	30	46	63	4	7	15	23	31
Action: Draw and Separately Identify (Mark)	All extra containers through out the lot.					1 extra container through out the lot.		2 extra containers throughout the lot		

## 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. Intended Receiver.
  - c. Size and kind of container.
  - d. No. of cases in lot (page 1 only).
  - e. Contract (Cont. No.) or Purchase Order (P.O. No.).
  - f. 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 (EX. 10 OZ.), SELECT THE CONTAINERS MARKED 1A, 2A, 3A, 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. **Thaw** the product according to Branch thawing procedures.
7. After thawing, **determine** the style of the lot. The lot should be graded for the style it has been offered. If no style has been designated, the lot shall be designated as "clusters" style and graded as such. **Place** a check (✓) mark in the applicable style box on the tally sheet.

## SUGGESTED ORDER OF GRADING

**Empty** the contents of the container on an individual grading tray and measure each unit at the greatest dimension across the top of the head to determine if the units meet the following requirements:

- a. For Clusters style - a maximum of 10 percent, by weight, of clusters less than 20 mm (0.75 in) in the greatest dimension across the top of the unit are allowed.
- b. For Nuggets style - a maximum of 20 percent, by weight, of clusters, 20 mm (0.75 in) or greater and a maximum of 10 percent, by weight, of clusters are less than 6 mm (0.25 in) in the greatest dimension across the top of the unit.

Another method to determine if the style criteria has been met is to **empty** units of clusters style into a sieve with 0.75 inch square openings and gently shake the sieve 7 or 8 times or until the units have completely separated.

For nuggets style, empty the units into a sieve with 0.25 inch square openings and gently shake the sieve 7 or 8 times or until the units have completely separated.

**Weigh** the separated units and determine if the criteria for clusters or nuggets have been met. If individual sample units do not meet these requirements, indicate "mixed styles" in the appropriate block on the "style" row on the tally sheet.

### 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. **Varietal characteristics.**
    - (1) **Grade A** should be assigned to those sample units containing cauliflower of similar varietal characteristics.
    - (2) **Substandard** should be assigned to those sample units containing cauliflower of dissimilar varietal characteristics.

## SUGGESTED ORDER OF GRADING

### b. Normal flavor and odor.

- (1) **Grade A** should be assigned to those sample units containing cauliflower that have normal flavor and odor.
- (2) **Substandard** should be assigned to those sample units containing cauliflower that do not have normal flavor and odor.

**NOTE: ALSO EVALUATE FOR FLAVOR AND ODOR AFTER COOKING.**

### c. Appearance.

**Separate** any chaff from the units or grams of cauliflower. A sieve with 0.25 inch square openings can be used. Place all contents of the sample unit into the sieve and gently shake it 7 or 8 times or until the units have completely separated. **Weigh and record** the number of grams of chaff in the applicable space on the tally sheet.

- (1) **Grade A** should be assigned to each sample unit of clusters style where the overall appearance is not materially affected and which contain a maximum of 5 percent, by weight, of chaff. For nuggets style, a maximum of 10 percent, by weight, of chaff is allowed for the sample unit.

**NOTE: THE AMOUNT OF CHAFF CAN BE DETERMINED AT THE SAME TIME THE STYLE IS DETERMINED.**

Chaff means individual segments of trimmed and cored cauliflower material, with and without head material, which measures less than 6 mm (0.25 in) in its greatest dimension.

- (2) **Substandard** should be assigned to those sample units containing cauliflower that do not meet the **Grade A** requirements.

## C. Grading for Specified Defects.

1. **Separate** the units or grams of product needed to grade for specified defects and **record** this number in the applicable space on the tally sheet.



## SUGGESTED ORDER OF GRADING

- a. For Clusters style - 50 **units** of product are needed from each sample unit to grade for blemishes, character, color defect, core material, fragments, mechanical damage and loose leaves.
- b. For Nuggets style - 100 **grams** of product are needed from each sample unit to grade for blemishes, character, color defects, core material, fragments, mechanical damage and loose leaves.

If there is not enough product available in the primary container, obtain more product from the adjacent extra containers.

**NOTE: UNLESS OTHERWISE INDICATED, CLUSTERS STYLE DEFECTS ARE RECORDED BY COUNT AND NUGGETS STYLE DEFECTS ARE RECORDED BY WEIGHT.**

2. **Evaluate** each cauliflower unit for **major** and **total color defects**. **Cook** the cauliflower units that have suspected color defects and/or a portion of the sample unit according to Branch (File Code 130-A-38) or label instructions. **Count** and **record** the increments or number of color defects on the tally sheet.

**NOTE: WHILE THE CAULIFLOWER UNITS ARE COOKING, ANY SUSPECT FLAVOR AND ODOR SAMPLE UNITS MAY ALSO BE COOKED. IF THERE ARE NO SUSPECT SAMPLE UNITS, THE CAULIFLOWER COOKED FOR COLOR MAY BE USED FOR FLAVOR AND ODOR EVALUATION.**

- a. **Major color defects** - units that possess a color that is seriously darkened or discolored, after cooking.
- b. **Minor color defects** - units that possess a color that is more than slightly darker than light cream to dark cream, after cooking.
- c. **Total color defects** - increments or number of units with **major** and **minor color defects**.

3. **Evaluate** each cauliflower unit for **major** and **total blemishes**. **Count** and **record** the increments or number of blemishes on the tally sheet.

- a. **Major blemished** - units having a dark blemish(s), which in the aggregate, exceed the area of a circle 6 mm (0.25 in) in diameter.

## SUGGESTED ORDER OF GRADING

- b. **Minor blemishes** - units having a dark blemish(s), which in the aggregate, exceeds the area of a circle 4 mm (0.16 in) in diameter but not 6 mm (0.25 in) in diameter or a light blemish(s), which in the aggregate, exceeds the area of a circle 6 mm (0.25 in) in diameter.
    - c. **Total blemishes** - increments or number of units with **major** and **minor blemishes**.
- 4. **Evaluate** each cauliflower unit for **fuzzy, ricey** and **soft** character. **Count** and **record** the increments or number of each character defect on the tally sheet.
  - a. **Fuzzy character** - units with sections of head that have elongated individual flowers (or pedicels) that result in a very fuzzy appearance.
  - b. **Ricey character** - units with sections of head on which the ultimate branches have become elongated, causing the flower clusters to separate and present a loose or open and sometimes granular appearance.
  - c. **Soft character** - units that are limp and flabby and the flesh yields readily when handled.
- 5. **Evaluate** the cauliflower units for **core material, fragments** and **mechanical damage**. **Count** and **record** the increments or number of each defect on the tally sheet.
  - a. **Core material** - loose or attached center portion of the cauliflower head which is tough or fibrous.
  - b. **Fragments** - stem or other cauliflower material without head material (excluding tough or fibrous core material, loose leaves, and small pieces).
  - c. **Mechanical damage** - units where the appearance is affected by trimming, or the unit is crushed or broken to the extent that the appearance is materially affected.
  - d. **Loose leaves** - leaf material, exclusive of small tender leaves, that are detached from the stem.

## SUGGESTED ORDER OF GRADING

**NOTE:** LOOSE LEAVES ARE RECORDED AS NUMBER OF LEAVES PER CONTAINER IN CLUSTERS AND NUGGETS STYLE.

6. **Determine** the total number 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.

7. **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" -- BELOW IN THIS MANUAL -- ON LOTS THAT MEET THE ACCEPTANCE NUMBERS BUT YET HAVE POCKETS OF OBVIOUSLY LOWER QUALITY.

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

**NOTE:** THE FINAL GRADE FOR VARIETAL CHARACTERISTICS, FLAVOR AND ODOR, APPEARANCE AND SPECIFIED QUALITY FACTOR CAN BE NO HIGHER THAN THE LOWEST GRADE ASSIGNED TO ANY SAMPLE UNIT FOR THOSE FACTORS.

## 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** 50 units of "Clusters" style or 100 grams of "Nuggets" style (if available) cauliflower 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 "Unofficial Samples" column in Tables III and IV of this manual. Determine the grade of the suspect sample units.
- 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 JUST THE "NONSUSPECT" PORTION OF THE SAMPLE, RE-SAMPLE THE LOT IN ACCORDANCE WITH TABLES I OR 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:

1. Each unofficial sample must stand on its own;
2. Each unofficial sample must contain 50 cauliflower units for "Clusters" style and 100 grams for "Nuggets or Small Clusters" style;
3. Grade the sample as outlined in this manual. Apply the acceptance numbers from Table III in the manual for clusters style and Table IV for nuggets or small clusters style.

## **TIME SAMPLING AND SEGREGATION PROCEDURES**

### **AUTHORIZATION TO USE TIME SAMPLING**

The Officer-in-Charge or area supervisor shall determine whether a plant can qualify to use the time sampling procedures outlined below. This determination shall be based on a review of the plant's quality control records and the ability of the plant to pack product consistently within a desired quality level. The supervisor shall not authorize time sampling for a plant which historically produces product which is determined to have erratic quality levels during a production period.

### **SOURCE OF SAMPLES**

All sample units must be officially drawn from "finished product." Finished product means product that has been processed, and taken from the container(s) to be graded. Line checks shall not be used in lieu of finished product.

### **TIME SAMPLING RATES PER INSPECTION PERIOD**

Sample units are to be selected on a random time basis averaging within the parameters outlined below so that each sample unit has an equal chance of being selected.

## Time Sampling

The **time sampling** rate used is based on knowledge of previous production volume for the product per basic inspection period. **Refer** to the attached acceptance numbers tables (Tables V, VI, VII, VIII) for time sampling in this manual, and **select** the Units or Grams of Product row that will use the maximum amount of product available.

## On-line Sampling

The sampling rate for the product graded is to be **predetermined**, based on knowledge of **previous** production volume for the product per basic inspection period and the **on-line** sampling plans in the "Regulations." Sampling rates and frequencies for frozen cauliflower are based on the following table:

Predetermined Production Rate	Sampling Frequency (units for clusters; grams for nuggets)	Deviants Allowed
Low Volume	50 units or 100 grams per 60 min. (per 90 min., optional)	0
Medium Volume	50 units or 100 grams per 45 min.	0
High Volume	50 units or 100 grams per 30 min. (per 15 min., optional)	0

## MINIMUM SAMPLE SIZE TO CERTIFY A PORTION OF PRODUCTION

For specified defects, 150 units or 300 grams of product **from three (3) sample units** is the minimum sample size under time sampling. For grading small portions of production or small containers, inspectors may need to draw a few extra containers to assure that the minimum sample sizes are met.

## PROCEDURES FOR GRADING MIXED QUALITY WITHIN THE PRODUCTION PERIOD

As provided for lot inspection under individual attributes, there is a similar provision to address pockets of low quality within a production period under time sampling.

If during the production period, a sample unit(s) is encountered for one or more specified defects that falls **more than one grade below the indicated grade** for the production period, **certify the production period to the lowest grade**. For the next period of production, the inspector **must** use the lot inspection rate in the Regulations. After grading one production period at the lot inspection rate and finding no pockets of low quality, the inspector may again use time sampling procedures and make note of each encounter of pockets of low quality product in the Daily Inspection Report under "Remarks".

## **SEGREGATION PROCEDURES**

If at any time during production, a portion of production falls into **the next lower grade**, the entire production fails at that point unless the offending portion can be segregated by codes. Plant management has two options--(1) to request segregation of the offending portion or, (2) to continue production without segregation anticipating better quality product will offset the offending portion. If plant management requests that a portion of failing production be segregated, all defects found that are associated with the failing portion shall be excluded from the tally of the remaining portion. The failing portion may be re-inspected as a new lot only under appeal inspection or after the product has been reworked in an effort to eliminate or reduce the defects from the failing portion.

## **OTHER REQUIREMENTS**

The following are separate but equally important requirements that must be followed when using time sampling for frozen cauliflower:

Inspectors cannot switch back and forth between on-line single sampling rates and time sampling **unless an occurrence of mixed quality sample units are encountered within a production period**. When this happens inspectors can switch from time sampling to on-line single sampling due to the processing operation's inability to pack product at a consistent quality level. Inspectors should notify their supervisors when this occurs.

The inspector must indicate that "time sampling" is being used on each tally sheet.

**TABLE III**  
**AQL's AND TOLERANCES (TOL.) FOR DEFECTS IN CLUSTERS STYLE**  
**BASED ON 50 UNITS OF PRODUCT FOR 13 SAMPLE UNITS, 50x13 = 650 UNITS**

Sample Units x Sample unit Size			1x50	3x50	6x50	13x50	21x50	29x50
Units of Product			50	150	300	650	1050	1450
Defects	AQL	TOL						
<b>GRADE A</b>			<b>ACCEPTANCE NUMBERS</b>					
Major Blemished	3.8	5.0	4	9	17	33	50	67
Total Blemished (Major&Minor)	8.2	10.0	7	18	33	65	101	137
Fuzzy Character	1.3	2.0	2	4	7	13	20	26
Ricey Character	8.2	10.0	7	18	33	65	101	137
Soft Character	0.612	1.0	1	2	4	7	10	14
Major Color Defect	0.612	1.0	1	2	4	7	10	14
Total Color Defect (Major&Minor)	6.4	8.0	6	15	26	52	80	108
Core Material	2.17	3.0	3	6	11	20	31	41
Fragments	3.8	5.0	4	9	17	33	50	67
Mechanical Damage	8.2	10.0	7	18	33	65	101	137
Loose Leaves (each piece)	2.17	3.0	3	6	11	20	31	41
<b>GRADE B</b>			<b>ACCEPTANCE NUMBERS</b>					
Major Blemished	8.2	10.0	7	18	33	65	101	137
Total Blemished (Major&Minor)	13.0	15.0	10	26	48	98	154	209
Fuzzy Character	6.4	8.0	6	15	26	52	80	108
Ricey Character	13.0	15.0	10	26	48	98	154	209
Soft Character	2.9	4.0	3	8	13	26	39	53
Major Color Defect	3.8	5.0	4	9	17	33	50	67
Total Color Defect (Major&Minor)	13.8	16.0	11	27	51	104	163	221
Core Material	3.8	5.0	4	9	17	33	50	67
Fragments	8.2	10.0	7	18	33	65	101	137
Mechanical Damage	17.6	20.0	13	34	63	130	205	279
Loose Leaves (each piece)	6.4	8.0	6	15	26	52	80	108

**TABLE IV**  
**AQL's AND TOLERANCES (TOL.) FOR DEFECTS IN NUGGETS OR SMALL CLUSTERS STYLE**  
**BASED ON 100 GRAMS OF PRODUCT FOR 13 SAMPLE UNITS, 100x13 = 1300 UNITS**

Sample Units x Sample Unit Size			1x100	3x100	6x100	13x100	21x100	29x100
Grams of Product			100	300	600	1300	2100	2900
Defects	AQL	TOL						
<b>GRADE A</b>			<b>ACCEPTANCE NUMBERS (GRAMS)</b>					
Major Blemished	3.8	5.0	7	17	31	61	94	127
Total Blemished (Major&Minor)	8.2	10.0	13	33	61	123	194	263
Fuzzy Character	1.3	2.0	3	7	12	23	36	48
Ricey Character	8.2	10.0	13	33	61	123	194	263
Soft Character	0.612	1.0	2	4	7	12	19	24
Major Color Defect	2.17	3.0	4	11	19	37	56	76
Total Color Defect (Major&Minor)	8.2	10.0	13	33	61	123	194	263
Core Material	2.17	3.0	4	11	19	37	56	76
Fragments	3.8	5.0	7	17	31	61	94	127
Mechanical Damage	8.2	10.0	13	33	61	123	194	263
Loose Leaves (each piece)	3.8	5.0	7	17	31	61	94	127
<b>GRADE B</b>			<b>ACCEPTANCE NUMBERS (GRAMS)</b>					
Major Blemished	8.2	10.0	13	33	61	123	194	263
Total Blemished (Major&Minor)	13.0	15.0	18	48	91	189	298	407
Fuzzy Character	6.4	8.0	10	26	48	98	153	208
Ricey Character	13.0	15.0	18	48	91	189	298	407
Soft Character	2.9	4.0	6	13	24	48	74	99
Major Color Defect	6.4	8.0	10	26	48	98	153	208
Total Color Defect (Major&Minor)	13.8	16.0	19	51	96	200	316	430
Core Material	2.17	3.0	4	11	19	37	56	76
Fragments	3.8	5.0	7	17	31	61	94	127
Mechanical Damage	17.6	20.0	24	63	121	251	398	544
Loose Leaves (each piece)	6.4	8.0	10	26	48	98	153	208



**TABLE V**  
**Time Sampling Acceptance Numbers For Clusters Style -- 50 Plan**  
**GRADE A**

Rate/ Units of Product	Blem (Major)	Tot Blem (Mj+Mn)	Fuzzy Char	Ricey Char	Soft Char	Col Def (Major)	Tot Col (Mj+Mn)	Core Material	Frag	Mech Dmg	Loose Leave
(AQLs)	3.8	8.2	1.3	8.2	0.612	0.612	6.4	2.17	3.8	8.2	2.17
1x50	4	7	2	7	1	1	6	3	4	7	3
2x50	7	13	3	13	2	2	10	4	7	13	4
3x50	9	18	4	18	2	2	15	6	9	18	6
4x50	12	23	5	23	3	3	18	8	12	23	8
5x50	14	28	6	28	3	3	22	9	14	28	9
6x50	17	33	7	33	4	4	26	11	17	33	11
7x50	19	37	8	37	4	4	30	12	19	37	12
8x50	21	42	9	42	5	5	34	13	21	42	13
9x50	24	47	10	47	5	5	38	15	24	47	15
10x50	26	51	11	51	6	6	41	16	26	51	16
11x50	28	56	11	56	6	6	45	17	28	56	17
12x50	31	61	12	61	7	7	48	19	31	61	19
13x50	33	65	13	65	7	7	52	20	33	65	20
14x50	35	70	14	70	8	8	56	21	35	70	21
15x50	37	74	15	74	8	8	59	23	37	74	23
16x50	39	79	16	79	8	8	63	24	39	79	24
17x50	42	83	16	83	9	9	66	25	42	83	25
18x50	44	88	17	88	9	9	70	27	44	88	27
19x50	46	92	18	92	10	10	73	28	46	92	28
20x50	48	97	19	97	10	10	77	29	48	97	29
21x50	50	101	20	101	10	16	80	31	50	101	31
22x50	52	106	20	106	11	11	84	32	52	106	32
23x50	54	110	21	110	11	11	88	33	54	110	33
24x50	57	115	22	115	12	12	91	34	57	115	34
25x50	59	119	23	119	12	12	95	36	59	119	36
26x50	61	123	23	123	12	12	98	37	61	123	37
27x50	63	128	24	128	13	13	101	38	63	128	38
28x50	65	132	25	132	13	13	105	39	65	132	39
29x50	67	137	26	137	14	14	108	41	67	137	41

**TABLE VI**  
**Time Sampling Acceptance Numbers For Frozen Cauliflower -- 50 Plan**  
**GRADE B**

Rate/ Units of Product	Blem (Major)	Tot Blem (Mj+Mn)	Fuzzy Char	Ricey Char	Soft Char	Col Def (Major)	Tot Col (Mj+Mn)	Core Material	Frag	Mech Damg	Loose Leaves
(AQLs)	8.2	13.0	6.4	13.0	2.9	3.8	13.8	3.8	8.2	17.6	6.4
1x50	7	10	6	10	3	4	11	4	7	13	6
2x50	13	18	10	18	6	7	19	7	13	24	10
3x50	18	26	15	26	8	9	27	9	18	34	15
4x50	23	34	18	34	10	12	35	12	23	44	18
5x50	28	41	22	41	11	14	43	14	28	54	22
6x50	33	48	26	48	13	17	51	17	33	63	26
7x50	37	56	30	56	15	19	59	19	37	73	30
8x50	42	63	34	63	17	21	66	21	42	83	34
9x50	47	70	38	70	19	24	74	24	47	92	38
10x50	51	77	41	77	21	26	81	26	51	102	41
11x50	56	84	45	84	22	28	89	28	56	111	45
12x50	61	91	48	91	24	31	96	31	61	121	48
13x50	65	98	52	98	26	33	104	33	65	130	52
14x50	70	105	56	105	28	35	111	35	70	139	56
15x50	74	112	59	112	29	37	119	37	74	149	59
16x50	79	119	63	119	31	39	126	39	79	158	63
17x50	83	126	66	126	33	42	134	42	83	168	66
18x50	88	133	70	133	34	44	141	44	88	177	70
19x50	92	140	73	140	36	46	148	46	92	186	73
20x50	97	147	77	147	38	48	156	48	97	196	77
21x50	101	154	80	154	39	50	163	50	101	205	80
22x50	106	161	84	161	41	52	170	52	106	214	84
23x50	110	168	88	168	43	54	178	54	110	223	88
24x50	115	175	91	175	44	57	185	57	115	233	91
25x50	119	182	95	182	46	59	192	59	119	242	95
26x50	123	189	98	189	48	61	200	61	123	251	98
27x50	128	196	101	196	49	63	207	63	128	260	101
28x50	132	202	105	202	51	65	214	65	132	270	105
29x50	137	209	108	209	53	67	221	67	137	279	108

**TABLE VII**  
**Time Sampling Acceptance Numbers For Nuggets Style -- 100 Plan**  
**GRADE A**

Rate/ Grams of Product	Blem (Major)	Tot Blem (Mj+Mn)	Fuzzy Char	Ricey Char	Soft Char	Col Def (Major)	Tot Col (Mj+Mn)	Core Material	Frag	Mech Damg	Loose Leaves
(AQLs)	3.8	8.2	1.3	8.2	0.612	2.17	8.2	2.17	3.8	8.2	3.8
1x100	7	13	3	13	2	4	13	4	7	13	7
2x100	12	23	5	23	3	8	23	8	12	23	12
3x100	17	33	7	33	4	11	33	11	17	33	17
4x100	21	42	9	42	5	13	42	13	21	42	21
5x100	26	51	11	51	6	16	51	16	26	51	26
6x100	31	61	12	61	7	19	61	19	31	61	31
7x100	35	70	14	70	8	21	70	21	35	70	35
8x100	39	79	16	79	8	24	79	24	39	79	39
9x100	44	88	17	88	9	27	88	27	44	88	44
10x100	48	97	19	97	10	29	97	29	48	97	48
11x100	52	106	20	106	11	32	106	32	52	106	52
12x100	57	115	22	115	12	34	115	34	57	115	57
13x100	61	123	23	123	12	37	123	37	61	123	61
14x100	65	132	25	132	13	39	132	39	65	132	65
15x100	69	141	27	141	14	42	141	42	69	141	69
16x100	73	150	28	150	15	44	150	44	73	150	73
17x100	78	159	30	159	16	47	159	47	78	159	78
18x100	82	167	31	167	16	49	167	49	82	167	82
19x100	86	176	33	176	17	52	176	52	86	176	86
20x100	90	185	34	185	18	54	185	54	90	185	90
21x100	94	194	36	194	19	56	194	56	94	194	94
22x100	98	202	37	202	19	59	202	59	98	202	98
23x100	103	211	39	211	20	61	211	61	103	211	103
24x100	107	220	40	220	21	64	220	64	107	220	107
25x100	111	228	42	228	22	66	228	66	111	228	111
26x100	115	237	43	237	22	69	237	69	115	237	115
27x100	119	246	45	246	23	71	246	71	119	246	119
28x100	123	254	46	254	24	73	254	73	123	254	123
29x100	127	263	48	263	24	76	263	76	127	263	127

**TABLE VIII**  
**Time Sampling Acceptance Numbers For Nuggets Style -- 100 Plan**  
**GRADE B**

Rate/ Grams of Product	Blem (Major)	Tot Blem (Mj+Mn)	Fuzzy Char	Ricey Char	Soft Char	Col Def (Major)	Tot Col (Mj+Mn)	Core Material	Frag	Mech Damg	Loose Leaves
(AQLs)	8.2	13.0	6.4	13.0	2.9	6.4	13.8	2.17	3.8	17.6	6.4
1x100	13	18	10	18	6	10	19	4	7	24	10
2x100	23	34	18	34	10	18	35	8	12	44	18
3x100	33	48	26	48	13	26	51	11	17	63	26
4x100	42	63	34	63	17	34	66	13	21	83	34
5x100	51	77	41	77	21	41	81	16	26	102	41
6x100	61	91	48	91	24	48	96	19	31	121	48
7x100	70	105	56	105	28	56	111	21	35	139	56
8x100	79	119	63	119	31	63	126	24	39	158	63
9x100	88	133	70	133	34	70	141	27	44	177	70
10x100	97	147	77	147	38	77	156	29	48	196	77
11x100	106	161	84	161	41	84	170	32	52	214	84
12x100	115	175	91	175	44	91	185	34	57	233	91
13x100	123	189	98	189	48	98	200	37	61	251	98
14x100	132	202	105	202	51	105	214	39	65	270	105
15x100	141	216	112	216	54	112	229	42	69	288	112
16x100	150	230	119	230	57	119	243	44	73	306	119
17x100	159	244	126	244	61	126	258	47	78	325	126
18x100	167	257	133	257	64	133	272	49	82	343	133
19x100	176	271	140	271	67	140	287	52	86	361	140
20x100	185	284	146	284	70	146	301	54	90	380	146
21x100	194	298	153	298	74	153	316	56	94	398	153
22x100	202	312	160	312	77	160	330	59	98	417	160
23x100	211	325	167	325	80	167	344	61	103	435	167
24x100	220	339	174	339	83	174	359	64	107	453	174
25x100	228	352	181	352	86	181	372	66	111	471	181
26x100	237	366	187	366	89	187	387	69	115	490	187
27x100	246	379	194	379	93	194	402	71	119	508	194
28x100	254	393	201	393	96	201	417	73	123	526	201
29x100	263	407	208	407	99	208	430	76	127	544	208