Crop Produce Analysts:

Grain Grader

Curriculum Code 684301001

Knowledge Assessment

agbiz GRAIN
agricultural business chamber
the way to prosperity

Knowledge Modules				
684301001-KM-01	**The collection and grading of representative grain and oilseed samples**		**NQF 3**	**12 credits**
	Notional Hour Breakdown		**Total**	**120 hours**
	Facilitation time		**Module 1**	**16 hours**
			Module 2	**16 hours**
			Module 3	**16 hours**
			Maize	**8 hours**
			Wheat	**16 hours**
			Commodity 1	**16 hours**
			Commodity 2	**16 hours**
	Knowledge Assessment			**16 hours**
KM-01-KT01	**The Grains and Oilseeds Industries**			
	KT0101	Grains and oilseeds quality properties		
	KT0102	Grains and oilseeds grading principles and regulatory framework		
KM-01-KT02	**Grains and oilseeds sampling**			
	KT0201	Concept and principles of representative grains and oilseeds sampling		
	KT202	Sampling methods and procedures		
KM-01-KT03	**Grains and oilseeds grading**			
	KT0301	Organising and preparing the workplace		
	KT0302	Grading methods and procedures		

KNOWLEDGE ASSESSMENT

The following assessment activities must be completed by the learner during the time allocated during class facilitation time. The facilitator may request learners to complete each grain type on completion of that specific grading standard or on completion of all the theoretical components.

The learner must achieve a 50% pass rate before he/she can commence with the practical assessment activities.

Module 1: The Grain and Oilseeds Industry

Question 1 [30]

Give the composition and nutritional values for the following grains, oilseeds and leguminous seeds:

1. Maize (5)

2. Sorghum (5)

3. Bread Wheat (5)

4. Soya beans (5)

5. Sunflower seeds (5)

6. Dry beans (5)

Total achieved ( )

Question 2 [25]

Describe in detail the uses for the following grains, oilseeds and leguminous seeds:

1. Maize [5]

_____
_____
_____
_____
_____
_____

2. Wheat [5]

_____
_____
_____
_____
_____
_____

Total achieved ( )

Question 3 [12]

Describe the industry stakeholders / participants' functions and options in the grain trading industry.

1. Producers / farmers [3]

_____
_____
_____
_____
_____

2. Grain traders [2]

_____
_____
_____
_____

3. Storage agents [5]

_____
_____
_____
_____
_____

_____

_____

4. Processors, manufacturers and buyers [2]

_____

_____

_____

Total achieved ( )

Question 4 [4]

Based on grading principles a grain, oilseed and dry bean representative sample must be sensorially assessed or chemically analysed to determine if it contains certain factors. Name these factors.

_____

_____

_____

_____

_____

Total achieved ( )

Question 5 [7]

Based on standards incorporated in the regulations grains, oilseeds and leguminous seeds must be free from certain substances or allowed a presence of the substance based on a predetermined tolerance. List these attributes and the applicable tolerance.

_____

_____

_____

_____

_____

_____

_____

Total achieved ( )

Question 6 **[12]**

Describe in full the necessity for grain, oilseed and dry bean grading.

Total achieved ( )

Module 2: Grains and Oilseeds Sampling

Question 7 **[8]**

Explain the importance of sampling as part of the grading process.

_____

_____

_____

_____

_____

_____

Total achieved ( )

Question 8 **[8]**

List and explain the four basic characteristics of sampling.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Total achieved ( )

Question 9 **[9]**

Complete the table below to indicate the correct representative and working sample sizes for each grain type:

Grain/Oilseed	Representative Sample	Working Sample
Wheat		
Sorghum		
Soya Beans		
Dry Beans		

Total achieved ( )

Question 10 **[4]**

Discuss the two different ways in which grains and oilseeds are transported.

_____

_____

_____

_____

_____

_____

Total achieved ( )

Question 11 **[10]**

Explain the two methods of bulk sampling of grain and oilseeds.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Total achieved ( )

Module 3: Grains and Oilseeds Grading

Question 13 **[6]**

List the steps to be followed in order to prepare to execute the grading of grains and oilseeds

Total achieved ( )

Question 14 **[8]**

List personal safety equipment (PPE) that is important to use when grading:

Total achieved ( )

Question 15 **[10]**

Discuss the dangers of grain dust at the silo and the measures that should be taken to minimize the risk.

_____

_____

_____

_____

_____

_____

_____

Total achieved ( )

Grading: Grains, Oilseeds and Legumes

Assessment COMPULSORY: Maize and Wheat

Assessment ELECTIVE: Choose 2

Sorghum	
Popcorn	
Barley	
Canola	
Oats	
Triticale	
Sunflower	
Soya bean	
Groundnuts	
Dry beans	
Lupins	
Peas	
Lentils	

Maize (100) COMPULSORY

1. Describe the following (Definitions)

"Another colour"

_____

_____

_____

"Poisonous seeds"

_____

_____

_____

"Foreign matter"

_____

_____

_____

"6.35 mm round hole sieve"

_____

_____

_____

"Defective maize"

_____

_____

_____

"Pinked maize"

_____

_____

_____

"Mouldy kernels"

_____

_____

_____

"Heat damaged kernels"

_____

_____

_____

"Coffee stained kernels"

_____

_____

_____

"Oxidation stained maize"

_____

_____

_____

"Frost damaged kernels"

_____

_____

_____

"Sprouted kernels"

_____

_____

_____

"Shrivelled or obviously immature"

_____

_____

_____

"Water damaged kernels"

_____

_____

_____

"Maize treated with a chemical substance"

_____

_____

_____

"Discoloured maize kernels"

_____

_____

_____

2. Seen from an agricultural point of view, maize is classified into three groups, discuss each group in full.

_____

_____

_____

_____

_____

3. **Name the classes of maize**

4. **Name the grades for maize**

5. **When would maize be graded as class other maize**

6. **How is the following determined**

Foreign matter

Defective maize

_____

_____

_____

Another colour

_____

_____

_____

Pinked maize

_____

_____

_____

7. Calculate the percentages of the following defects:

a. Sample of maize= 165.3g Defective maize 3.0g

b. Sample of maize = 183.9g Other colour maize 5.6g

c. Sample of maize = 154.2g Insect damaged maize 4.2g

d. Sample of maize = 162.3g Sorghum 9.4g

e. Sample of maize = 195.3g Fusarium 2.3g

f. Sample of maize = 165.3g Pinked maize kernels 4.5g

8. Award a class and grade to the following samples:

a) White maize

Defective above the 6.35mm sieve	3.0%
Defective below the 6.35mm sieve	2.8%
Foreign matter	0.4%
Other colour	9.0%
Pinked maize kernels	11.5%
Moisture	13.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

b) Yellow Maize

Defective above the 6.35mm sieve	3.0%
Defective below the 6.35mm sieve	6.2%
Foreign matter	0.2%
Other colour	9.0%
Moisture	12.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

c) White maize

Defective above the 6.35mm sieve	4.3%
Defective below the 6.35mm sieve	2.8%
Foreign matter	0.8%
Other colour	2.0%
Pinked maize kernels	13.5%
Moisture	14.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

d) White maize

Defective above the 6.35mm sieve	10.0%
Defective below the 6.35mm sieve	2.8%
Foreign matter	0.1%
Other colour	1.0%
Pinked maize kernels	0.5%
Moisture	12.5%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

e) Yellow Maize

Defective above the 6.35mm sieve	3.0%
Defective below the 6.35mm sieve	2.8%
Wheat	0.4%
Sun flower	9.0%
Moisture	13.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

f) White maize

Diplodia	3.0%
Fusarium	2.5%
Insect damage	3.3%
Defective below the 6.35mm sieve	2.8%
Stones, coal and dung	0.4%
Other colour	0.4%
Pinked maize kernels	1.7%
Moisture	12.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

g) Yellow maize

Defective above the 6.35mm sieve	8.0%
Defective below the 6.35mm sieve	5.8%
Stones below the 6.35mm round-hole sieve	0.8g
Foreign matter	0.1%
Other colour	2.0%
Moisture	16.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

h) White maize

Defective below the 6.35mm sieve	7.2%
Foreign matter	0.4%
Other colour	1.0%
Pinked maize kernels	1.5%
Moisture	13.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

i) Yellow maize

Defective above the 6.35mm sieve	22.0%
Foreign matter	0.4%
Other colour	9.0%
Moisture	13.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

j) White maize

Defective below the 6.35mm sieve	2.8%
Rodent damaged maize kernels	2.5%
Insect damaged	1.2%
Zea maize Oaxacan Green	20.0%
Foreign matter	0.4%
Pinked maize kernels	11.5%
Moisture	13.4%

Class .....

No	Foreign matter	Defective kernels		Another colour	Total	Pinked maize
		Below 6,35 mm sieve	Above 6,35 mm sieve			
1.						
2.						
3.						
4.						
5.						
Total						
Grade						

FINAL CLASS AND GRADE _____

Wheat (100) COMPULSORY

1. **Describe the following (Definitions)**

“other grain”

_____

_____

_____

“damaged wheat”

_____

_____

_____

“heavily frost-damaged wheat”

_____

_____

_____

“field fungi infected wheat”

_____

_____

_____

“unthreshed ears”

_____

_____

_____

“storage fungi infected wheat”

_____

_____

_____

“protein content”

_____

_____

_____

“stinking smut infection”

_____

_____

_____

“falling number”

_____

_____

_____

“foreign matter”

_____

_____

_____

2. Name the classes of wheat

_____

_____

_____

_____

3. Name the grades for wheat

_____

_____

_____

_____

_____

4. What is the falling number value for the different grades of wheat?

_____

_____

_____

_____

5. What are the factors that influence the hectolitre mass of wheat?

_____

_____

_____

_____

_____

_____

6. **Describe how the following deviations are determined:**

Percentage Screenings

Percentage heavily frost-damaged wheat

Percentage heat-damaged wheat

Percentage field-fungi infected wheat

Percentage storage fungi infected wheat

_____
_____
_____
_____
_____
_____
_____
_____
_____

7. Award a class and grade to the following samples:

SST 387	
Falling Number (FN)	279 s
Protein content	12.2%
Hectolitre mas	81 kg
Oats	12%
Buck-wheat	2.5%
Sprouted rye	2%
Screenings	2.8%
Insect damaged wheat	1.2%

PAN 3161	
Protein content	10.8%
Hectolitre mass	78 kg
Screenings	0.8%
Vicia	1%
Immature oats	1%
FN	320s
Moisture content	12.6%

SST 875	
Protein content	13%
Hectolitre mass	79 kg
Screenings	0.9%
Maize	1%
Wild oats	1%
FN	256s

SST 356	
Protein content	11.2%
Hectolitre mass	73kg
Screenings	1.1%
Insect damaged – Betta-DN	5%
Maize	0.5%
Immature wheat	2%
FN	310s

PAN 3161	
Protein content	9.9%
Hectolitre mass	76kg
Lupins	0.8%
Rye	0.3%
Barley	0.5%
Grain sorghum	0.1%
Sprouted wheat	2%
Screenings	2%
FN	262s

ELANDS	
Protein content	11.9%
Hectolitre mass	80 kg
Screenings	1.2%
Wild buck-wheat	0.5%
Lupins	0.4%
Moisture content	12.2%
FN	360s

CRN 826	
Protein content	12.5%
Hectolitre mass	78 kg
Screenings	2.4%
Scheepers 69	4%
Foreign matter	1%
Heat damaged SST 822	0.5%%
FN	340s

SST 843	
Protein content	11.6%
Hectolitre mass	77 kg
Screenings	1.8%
Unthreshed ears	1%
Mould infected soya beans	1%
Sprouted barley	1%
Vicia	1.2%
FN	203s

KOMATI	
Protein content	12.5%
Hectolitre mass	76 kg
Screenings	0.8%
Durum	4%
Elands	16%
Moisture content	13.9%
Vicia	1%
Sprouted oats	0.5%
FN	320s

GARIEP	
Protein content	14.1%
Hectolitre mass	74 kg
Screenings	1.3%
Insect damaged barley wheat	1%
Morning Glory seeds	1/10kg
Heat damaged	2.9%
FN	630s

Sunflower Seeds (100)

1. Describe the following (Definitions)

“damaged sunflower seeds”

_____

_____

_____

_____

“poisonous seeds”

_____

_____

_____

_____

“sclerotinia”

_____

_____

_____

_____

“sunflower seeds”

_____

_____

_____

_____

“screenings”

_____

_____

_____

_____

“standard sieve”

_____

_____

_____

_____

“foreign matter”

_____

_____

_____

_____

2. **Name the classes of sunflower seeds**

3. **What is the standard for each class of sunflower seed?**

4. **Name the grades for sunflower seeds**

5. **Describe the standard for sunflower seeds**

6. **How is the following determined:**

Percentage damaged sunflower seed

Percentage sclerotinia

Percentage screenings

Percentage of sunflower seed of another class

Percentage of foreign matter

7. Determine the class and grade of the following samples of sunflower seed. All the samples represent Class FH.

a)

Moisture content	8.1%
Sclerotia	1.1%
Maize	3.2%
Screenings	2.0%
Oil content	38.5%

		1	2	3	4	Total	Grade
1	Damaged sunflower seed						
2	Screenings						
3	Sclerotinia						
4	Foreign matter						
5	Total deviations for 2, 3 and 4 collectively: Provided that such deviations are individually within the limits of each item						
	Final grade						

b)

Moisture content	9.4%
Wheat	1.5%
Screenings	0.4%
Convolvulus	6/1000g
Stones	0.1%

		1	2	3	4	Total	Grade
1	Damaged sunflower seed						
2	Screenings						
3	Sclerotinia						
4	Foreign matter						
5	Total deviations for 2, 3 and 4 collectively: Provided that such deviations are individually within the limits of each item						
	Final grade						

c)

Moisture content	7.7%
Oil content	43%
Screenings	0.6%
Foreign objects	0.8%
Heat damaged	2.6%

		1	2	3	4	Total	Grade
1	Damaged sunflower seed						
2	Screenings						
3	Sclerotinia						
4	Foreign matter						
5	Total deviations for 2, 3 and 4 collectively: Provided that such deviations are individually within the limits of each item						
	Final grade						

d)

Oil content	41.3%
Sclerotia	4.0%
Screenings	0.3%
Smell	Khaki bush
Moisture content	10.4%

		1	2	3	4	Total	Grade
1	Damaged sunflower seed						
2	Screenings						
3	Sclerotinia						
4	Foreign matter						
5	Total deviations for 2, 3 and 4 collectively: Provided that such deviations are individually within the limits of each item						
	Final grade						

8. Determine the mass of a consignment sunflower seed with a total mass of 20 550kg and with 1.3% sclerotia, 0.5% screenings and 1.1% foreign objects.

_____

_____

_____

_____

Sorghum (100)

1. **Describe the following (Definitions)**

"another group”

_____

_____

_____

“dark testa”

_____

_____

_____

_____

“small kernel sorghum”

_____

_____

_____

_____

“unthreshed sorghum”

_____

_____

_____

_____

“poisonous seeds”

_____

_____

_____

“sorghum”

_____

_____

_____

“foreign matter”

_____

_____

_____

_____

“weather-stained sorghum”

_____

_____

_____

“white sorghum”

“standard sieve”

“defective sorghum”

2. **Name the classes of sorghum**

3. **What is the standard for each class sorghum**

4. **Name the grades for sorghum**

5. **Describe the standard for sorghum**

6. How is the following determined

Foreign matter content

Unthreshed sorghum content

Defective sorghum- and small kernel sorghum content

Sorghum content of another group

White sorghum content

Weather-stained sorghum content

7. Determine the class and grade of the following samples:

A 1. Light testa sorghum
2. 10 smut balls
3. Foreign matter – 1.8%
4. Unthreshed sorghum – 5.2%
5. Defective sorghum – 8.4%
6. Small kernel sorghum – 3.0%
7. Sorghum of another group – 5.2%
8. White sorghum – 5.2%
9. Weather stained sorghum – 22%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

B 1. Dark testa sorghum - GH

2. 2.0g sunflower.
3. Foreign matter – 2.5%
4. Unthreshed sorghum – 3.0%
5. Defective sorghum – 5.4%
6. Small kernel sorghum – 5.0%
7. Sorghum of another group – 5.2%
8. White sorghum – 5.2%
9. Weather stained sorghum – 22%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

C 1. Dark testa sorghum - GL

2. 5.2g sorghum of which embrio skin are cracked.
3. Foreign matter – 2.3%
4. Unthreshed sorghum – 2.2%
5. Defective sorghum – 9.4%
6. Small kernel sorghum – 19.8%
7. Sorghum of another group – 2.2%
8. White sorghum – 22.5%
9. Weather stained sorghum – 52%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

D 1. Light testa sorghum

2. 5.3% sorghum with a light green colour.
3. Foreign matter – 0.8%
4. Unthreshed sorghum – 1.2%
5. Defective sorghum – 1.4%
6. Small kernel sorghum – 3.0%
7. Sorghum of another group – 2.2%
8. White sorghum – 0.2%
9. Weather stained sorghum – 12%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

E 1. Dark testa sorghum- GH

2. 2 smut balls
3. Insect damaged sorghum – 2.3%
4. Unthreshed sorghum – 19.2%
5. Defective sorghum – 0.4%
6. Small kernel sorghum – 18.3%
7. Sorghum of another group –52.3%
8. White sorghum – 5.2%
9. Weather stained sorghum – 22%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

F 1. Light testa sorghum

2. Sorghum with musty smell
3. 52 Thorn apple seeds
4. Unthreshed sorghum – 0.2%
5. Defective sorghum – 1.4%
6. Small kernel sorghum – 0.0%
7. Sorghum of another group – 2.2%
8. White sorghum – 3.2%
9. Weather stained sorghum – 22%

GRADING TABLE

Class ……..

Grading factors	**1**	**2**	**3**	**4**	**Total**	**Grade**
Foreign matter						
Unthreshed sorghum						
Defective sorghum						
Small kernel sorghum						
Total of defective and small kernel sorghum						
Sorghum of another group						
Sorghum of a white group						
Total of a white group and another group						
Weather stained sorghum						

Final grade ……

Soya Beans (100)

1. **Describe the following (Definitions)**

“ other grain”

_____

_____

_____

“defective soya beans”

_____

_____

_____

“poisonous seeds”

_____

_____

_____

“ heat damaged”

_____

_____

_____

“frost damaged”

_____

_____

_____

“wet pods”

_____

_____

_____

“ pods”

_____

_____

_____

“sclerotinia”

_____

_____

_____

“ soya beans”

_____

_____

_____

_____

“ mould infected”

_____

_____

_____

_____

“ the 4,75mm round-hole screen’’

_____

_____

_____

_____

“soiled soya beans”

_____

_____

_____

“foreign matter”

_____

_____

_____

2. Name the classes of soya beans

_____

_____

_____

_____

_____

3. What is the standard for each class of soya beans

_____

_____

_____

_____

_____

4. Name the grades for soya beans

_____

_____

_____

_____

_____

_____

_____

5. Describe the standard for soya beans

_____
_____
_____
_____
_____
_____
_____

6. **How is the following determined:**

Percentage wet pods

_____
_____
_____

Percentage of other grain, sunflower seed, stones and foreign matter

_____
_____
_____

Percentage defective soya beans

_____
_____
_____

Percentage soya beans and pieces of soya beans that pass through the 4,75mm round hole screen

_____
_____
_____

Percentage sclerotinia

_____
_____
_____

Percentage of soiled soya beans

_____
_____
_____

Determine the class and grade of the following samples:

Sample no.	1	2	3	4	5
Wet pods	**0.1%**	**0.3%**	**0%**	**0.5%**	**0%**
Foreign matter, including stones, other grain and Sunflower seeds:	**2.9%**	**1.9%**	**4.5%**	**0.4%**	**1.7%**
Foreign material on top of 4.75mm round hole sieve	**0.2%**	**0.3%**	**0.4%**	**0%**	**0.2%**
Foreign material on top of 1.8mm slotted sieve	**1.3%**	**0.9%**	**1.2%**	**0%**	**0.1%**
Foreign material in the pan (Throughs of the 1.8mm slotted sieve)	**0.6%**	**0.7%**	**1.3%**	**0%**	**1.4%**
Other Grain	**0.1%**	**0%**	**0.6%**	**0.4%**	**0**
Sunflower seed	**0.1%**	**0%**	**0.1%**	**0%**	**0**
Stones	**0.6%**	**0%**	**0.9%**	**0%**	**0**
Sclerotinia	**2.2%**	**3.4%**	**4.2%**	**0%**	**1.3%**
Soybeans and part of Soybeans which pass through the 4.75mm round hole screen on top of the 1.8mm slotted sieve.	**6.4%**	**3.2%**	**5.5%**	**11.9%**	**7.5%**
Defective Soybeans on the 4.75mm round whole screen	**9.9%**	**3.5%**	**12.3%**	**7.8%**	**12.5%**
Soiled Soybeans on top of 4.75mm round hole sieve	**4.8%**	**15.4%**	**9.5%**	**7.3%**	**0%**
Deviations in (B) and (F) collectively. Provided that such deviation are individually within the limits of said items.	**5.1%**	**5.3%**	**8.7%**	**0.4%**	**3.0%**
Class and grade					

Dry Beans (100)

1. **Describe the following (Definitions)**

"Broken or split dry beans"

_____

_____

_____

"Dry beans"

_____

_____

_____

"Broken testa"

_____

_____

_____

"Bulk quantities"

_____

_____

_____

"Colour group"

_____

_____

_____

"Cracked testa"

_____

_____

_____

"Defective dry beans"

_____

_____

_____

"Form group"

_____

_____

_____

"Main panel"

_____

_____

_____

"Not true to type dry beans"

"Retail quantities"

"Stained"

"Speckled"

"Type group"

"Wrinkled testa"

2. **What is the standard for split dry beans**

3. **What is the standard for each grade**

4. **What is the standard for Under grade dry beans**

5. **Describe the form groups**

6. **Describe the size groups**

7. **Describe the colour groups**

8. Describe the type groups

_____
_____
_____
_____
_____
_____
_____
_____
_____

9. Describe the grades for dry beans

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

10. How is the following determined:

Colour group

_____
_____
_____
_____
_____
_____

Type group

_____
_____
_____

Foreign matter, stones and sand

_____

_____

_____

_____

_____

_____

Defective, broken and split dry beans

_____

_____

_____

Not true to type dry beans

_____

_____

_____

Broken, wrinkled or cracked testa

_____

_____

_____

11. Describe the container and marking requirements for dry beans

_____

_____

_____

_____

_____

_____

A Sample**: (Bulk/Retail)**

	TIPE DRY BEANS =						
	FORM =						
	SIZE =						
	COLOUR =						
No	Afwyking/Deviation	1	2	3	4	Total	Grade
1	Foreign matter						
2	Stones and sand						
3	**Total Foreing matter and stones**						
4	Defective dry beans						
5	Broken/split dry bean						
6	**Total defective & broken/splits**						
7	Not true to tipe beans						
8	Broken testa						
9	Wrinkled/cracked testa						
10	**Total Broken & Wrinkled/cracked testa**						
11	Poisonous seeds						
12	Musty or unacceptical odour						
13	Harmfull substance						
14	Moisture						
15	Remarks:						
GRADE =							

B Sample: **(Bulk/Retail)**

	TIPE DRY BEANS =						
	FORM =						
	SIZE =						
	COLOUR =						
No	Afwyking/Deviation	1	2	3	4	Total	Grade
1	Foreign matter						
2	Stones and sand						
3	**Total Foreing matter and stones**						
4	Defective dry beans						
5	Broken/split dry bean						
6	**Total defective & broken/splits**						
7	Not true to tipe beans						
8	Broken testa						
9	Wrinkled/cracked testa						
10	**Total Broken & Wrinkled/cracked testa**						
11	Poisonous seeds =						
12	Musty or unacceptical odour =						
13	Harmfull substance =						
14	Moisture =						
15	Remarks:						
GRADE =							

Knowledge: Assessment Results Summary			
Question	Total	Total Achieved	Remarks
1	30		
2	25		
3	12		
4	40		
5	4		
6	7		
7	42		
8	12		
9	8		
10	8		
11	8		
12	4		
13	10		
14	6		
15	8		
16	10		
17	100		
18	100		
19	100		
20	100		
21	100		
22	100		
Total	834		

Barley (100)

1. Describe the following (Definitions)

"Artificially dried barley"

_____

_____

_____

"Badly discoloured and heat-damaged barley"

_____

_____

_____

"badly mold-infected (rotten) barley"

_____

_____

_____

"black-end barley"

_____

_____

_____

"black-hulled barley"

_____

_____

_____

"damaged barley"

_____

_____

_____

"mechanically damaged barley"

_____

_____

_____

"plump barley"

_____

_____

_____

"pre-germinated barley"

_____

_____

_____

“rubbing”

“six-row barley”

8. **Name the classes of barley**

9. **What is the standard for each class barley**

10. **Name the grades for barley**

11. **Describe the standard for barley**

12. How is the following determined:

Class

Moisture content

Nitrogen content

Germination capacity

Germination energy

13. How is the following deviations in barley determined:

% maize and/or stones

plump barley

mechanically damaged barley

badly discoloured/heat-damaged barley

black-end barley

un-threshed ears

damaged barley

weather-damaged barley

pre-germinated barley

sprouted barley

Canola (50)

1. **Describe the following (Definitions)**

"Canola"

_____

_____

_____

"damaged seed"

_____

_____

_____

"distinctly green seed"

_____

_____

_____

"mouldy seed"

_____

_____

_____

"canola sieve"

_____

_____

_____

"snails"

_____

_____

_____

"sprouted"

_____

_____

_____

2. **Name the classes of canola**

_____

_____

_____

_____

3. **What is the standard for each class canola**

4. **Name the grades for canola**

5. **Describe the standard for canola**

6. **How is the following determined:**

Heat damaged and distinctly green seed

Foreign matter

Sclerotinia

Sprouted kernels

Ergot sclerotia

Groundnuts (100)

1. Describe the following (Definitions)

"Blackened pods"

_____

_____

_____

"blemished kernels"

_____

_____

_____

"broken and open pods"

_____

_____

_____

"edible groundnuts"

_____

_____

_____

"expressing groundnuts"

_____

_____

_____

"kernel content"

_____

_____

_____

"mould-infested kernels"

_____

_____

_____

"noxious seeds"

_____

_____

_____

"one-kernelled pod"

_____

_____

_____

“raisins”

_____

_____

_____

“shelled kernels”

_____

_____

_____

“shrivelled kernels”

_____

_____

_____

“soiled kernels”

_____

_____

_____

“soiled pods”

_____

_____

_____

“split kernels”

_____

_____

_____

“sticks”

_____

_____

_____

“sun-dried kernels”

_____

_____

_____

“Unsound kernels”

_____

_____

_____

2. **Name the classes of groundnuts**

3. **What is the standard for each class groundnuts**

4. **Name the grades for groundnuts**

5. **Describe the standard for groundnuts**

6. **How is the following determined:**

Percentage kernels of another class

Sticks, foreign matter and shelled kernels

Pods and foreign matter in kernel form

Kernel content

7. Describe the steps for the grading of groundnuts

Steps for grading of pods

Steps for grading groundnuts in kernel form

Steps for grading and screening of kernels

Steps for grading of pods

Final Assessment Results			
KM-01-KT01	**The Grains and Oilseeds Industries**		
	KT0101	Grains and oilseeds quality properties	C NYC
	KT0102	Grains and oilseeds grading principles and regulatory framework	C NYC
KM-01-KT02	**Grains and oilseeds sampling**		
	KT0201	Concept and principles of representative grains and oilseeds sampling	C NYC
	KT202	Sampling methods and procedures	C NYC
KM-01-KT03	**Grains and oilseeds grading**		
	KT0301	Organising and preparing the workplace	C NYC
	KT0302	Grading methods and procedures	C NYC

ASSESSOR	**SIGNATURE**	**DATE**
LEARNER	**SIGNATURE**	**DATE**
MODERATOR	**SIGNATURE**	**DATE**