

Nova Versão  
**Aplicativo  
desktop**

Versionamento menor - V3.0.10  
2024/07/19

# Dashboard

C Csmat Digit | Csmat Coffee Technologies S.A.

**CSMART DIGIT**

File Name: AMOSTRA\_GRANO | File Location: D:\Csmat\_Digit\Analysis | Last Analysis Model: 224\_MCL\_RNXT50\_SOFT4\_ARA\_BRA\_MIXEDV4\_B94

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## Quality Control Dashboard

**1.** Relative to Weight

Total Defects <b>14.49%</b> Area: 4543	Primary Defects <b>0.87%</b> Area: 273	Secondary Defects <b>13.38%</b> Area: 4196	Foreign Matter <b>0.24%</b> Area: 74	Inspected Seeds <b>758</b> Est. Weight: 85g	COB protocol <b>Tipo 6/7</b> Eq. Defects: 125	Dominant Color RGB(158, 153, 127)
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### Screen Size Distribution

**1.**

Screen Size	Area	Percentage	Cumulative %
Screen 10-	114	0.36%	100.00%
Screen 11	85	0.27%	99.64%
Screen 12	194	0.62%	99.37%
Screen 13	773	2.46%	98.75%
Screen 14	3759	11.98%	96.29%
Screen 15	9634	30.71%	84.31%
Screen 16	13694	43.66%	53.60%
Screen 17	2756	8.79%	9.94%
Screen 18	151	0.48%	1.15%
Screen 19+	202	0.64%	0.67%

Aggregate Area

Screen Size

OK: 85.5% | NOK: 14.5% | Cumulative %

Min and Max Screen: 10 - 19

Save Image | Generate Plot

### Classes Distribution

Class	Area	Percentage	Subset
Black	273	0.87%	Primary Defect
Broken	3032	9.67%	Secondary Defect
Floater	42	0.13%	Secondary Defect

1. Um novo botão switch denominada **Relative to Weight** e **Relative to Count** pode ser selecionada para alterar todos os cálculos relativos à distribuição do tamanho de peneira. Quando **Relative to Count** é selecionado, todos os gráficos e tabelas refletem a ocorrência de cada semente em relação à ocorrência total por contagem. Por outro lado, quando **Relative to Weight** é selecionado, a porcentagem é calculada com base na área de cada semente em relação à área total da amostra, que é intrinsecamente correlacionada ao peso.

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## Quality Control Dashboard

Total Defects: **14.49%** (Area: 4543)

Primary Defects: **0.87%** (Area: 273)

Secondary Defects: **13.38%** (Area: 4196)

Foreign Matter: **0.24%** (Area: 74)

Inspected Seeds: **758** (Est. Weight: 85g)

COB protocol: **Tipo 6/7** (Eq. Defects: 125)

Dominant Color: **RGB(158, 153, 127)**

Relative to Weight

### Screen Size Distribution

Aggregate Area vs Screen Size

The chart displays the distribution of screen sizes from 10 to 19+. The Y-axis represents the Aggregate Area, ranging from 0 to 14,000. The X-axis represents the Screen Size. The bars are stacked, showing the percentage of OK (blue), NOK (black), and Cumulative % (red line). The data is as follows:

Screen Size	OK (%)	NOK (%)	Cumulative %
10-	0.37%	0.27%	0.64%
11	0.62%	0.47%	1.10%
12	0.27%	0.27%	1.37%
13	0.37%	0.27%	1.64%
14	11.98%	2.47%	14.45%
15	30.72%	4.65%	43.66%
16	43.66%	6.65%	70.31%
17	8.79%	0.48%	79.10%
18	0.48%	0.65%	79.75%
19+	0.64%	0.64%	100.00%

Screen Size:  Good  Defects  Both

Min and Max Screen:  19

Save Image

2.

### Classes Distribution

The chart shows the distribution of classes across different categories. The Y-axis represents the Area, ranging from 0 to 25,000. The legend indicates:

- OK (Green)
- Primary Defects (Red)
- Secondary Defects (Yellow)
- Foreign Matter (Purple)

The data is as follows:

Class	Area	Percentage	Subset
Black	273	0.87%	Primary Defect
Broken	3032	9.67%	Secondary Defect
Floater	42	0.13%	Secondary Defect

3.

2. O controle deslizante **Min e Max Screen** tem como objetivo definir os limites da distribuição do tamanho de peneira. A alteração dos valores ajustará quaisquer tamanhos maiores ou menores que os limites especificados para os limites selecionados.

3. Após selecionar os valores mínimo e máximo, clique em **Generate Plot** para calcular e gerar o gráfico e a tabela do tamanho de peneira.

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Relative to Weight

## Quality Control Dashboard

Total Defects <b>14.49%</b> Area: 4543	Primary Defects <b>0.87%</b> Area: 273	Secondary Defects <b>13.38%</b> Area: 4196	Foreign Matter <b>0.24%</b> Area: 74	Inspected Seeds <b>758</b> Est. Weight: 85g	COB protocol <b>Tipo 6/7</b> Eq. Defects: 125	Dominant Color RGB(158, 153, 127)
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### Screen Size Distribution

The chart displays the distribution of screen sizes from 13 to 18 inches. The Y-axis represents Aggregate Area, ranging from 0 to 14000. The X-axis represents Screen Size. The chart shows a significant peak at 16 inches (43.60% of the area) and a smaller peak at 15 inches (30.72% of the area). A red line represents the cumulative percentage, starting at 3.72% for size 13 and reaching 100% for size 18. Two large numbers '4.' are overlaid on the chart: one on the bar for size 16 and one on the legend.

Screen Size	Area	Percentage	Cumulative %
Screen 13-	1168	3.72%	100.00%
Screen 14	3759	11.98%	96.28%
Screen 15	9634	30.71%	84.30%
Screen 16	13694	43.66%	53.59%
Screen 17	2756	8.79%	9.93%
Screen 18+	354	1.13%	1.14%

Legend:  Good  Defects  Both

Min and Max Screen: 13 - 18

**4.** **4.**

**Save Image** **Generate Plot**

### Classes Distribution

The chart shows the distribution of classes across different categories. The Y-axis represents the count, ranging from 0 to 25000. The X-axis represents categories. The legend indicates four classes: OK (green), Primary Defects (red), Secondary Defects (orange), and Foreign Matter (purple). The OK class is dominant, accounting for 82.87% of the total area. A large number '4.' is overlaid on the OK bar.

Class	Area	Percentage	Subset
Black	273	0.87%	Primary Defect
Broken	3032	9.67%	Secondary Defect
Floater	42	0.13%	Secondary Defect

4. Exemplo de gráfico e tabela ajustados, limitado às peneiras 13 e 18.

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**5.**

**Relative to Weight**

**Quality Control Dashboard**

Total Defects <b>14.49%</b> Area: 4543	Primary Defects <b>0.87%</b> Area: 273	Secondary Defects <b>13.38%</b> Area: 4196	Foreign Matter <b>0.24%</b> Area: 74	Inspected Seeds <b>758</b> Est. Weight: 85g	COB protocol <b>Tipo 6/7</b> Eq. Defects: 125	Dominant Color RGB(158, 153, 127)
--	--	--	--	---	---	--------------------------------------

Screen Size Distribution

Expected Screen Size Distribution

Screen Size	Expected Count (300g)
Screen 10 and less	3738 seeds
Screen 11	3524 seeds
Screen 12	3309 seeds
Screen 13	2970 seeds
Screen 14	2910 seeds
Screen 15	2775 seeds
Screen 16	2535 seeds
Screen 17	2235 seeds
Screen 18 and more	1920 seeds

**Close**

# Dashboard

5. A estimativa de peso considera a distribuição esperada do tamanho da peneira em relação a um peso conhecido. Esta informação é associada ao arquivo do modelo de IA, permitindo que cada modelo tenha uma distribuição diferente. Os usuários precisam criar esta tabela para seus modelos. Com base na distribuição esperada é possível estimar o peso da amostra analisada. Observe que não é possível assumir que todas as sementes que passam pelo equipamento serão registradas e portanto a distribuição esperada serve como variável base para o correto resultado dos métodos de classificação.

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Classification Methods

Total Defects	Method	Equivalent Defects	Type
<b>115</b>	COB	125	Tipo 6/7
	NY	125	NY 6

Weight Factor: 3.53

6.

7.

8.

Classification Report

Class	Original Count	Weighted Count	Factor	Equivalent Defects
Black	7	25	1 to 1	25
Broken	79	279	5 to 1	56
Floater	1	4	5 to 1	1
Fox Bean	19	68	0	0
Husk Small	0	0	3 to 1	0
Husk Medium	0	0	3 to 1	0
Husk Large	0	0	1 to 1	0
Immature	6	22	5 to 1	5
Insect Dam.	10	36	5 to 1	8
Ok	624	2203	0	0
Parchment	2	8	2 to 1	4
Pod	0	0	1 to 1	0
Rocks Small	0	0	3 to 1	0
Rocks Medium	2	8	1 to 2	16
Rocks Large	0	0	1 to 5	0
Shell	8	29	3 to 1	10
Sour	0	0	2 to 1	0

AI Parameters

Prediction Entropy	True Positives	True Negatives	False Positives	False Negatives
Average Entropy: 0.78%	<b>112</b> Ratio: 14.78%	<b>643</b> Ratio: 84.83%	<b>0</b> Ratio: 0.0%	<b>3</b> Ratio: 0.4%
Confidence Level: High Confidence				

6. Com base no **Peso Estimado** e no **Peso Requerido** do método de classificação, é aplicado um **Fator de Peso**.

7. Todas as ocorrências de cada defeito serão multiplicadas pelo **Fator de Peso**, gerando uma **Contagem Ponderada**. A partir disso, o fator de classe, definido pelo método escolhido, é aplicado para determinar os **Defeitos Equivalentes** por classe e total.

8. Este procedimento é aplicado a todos os métodos presentes no modelo AI e pode ser acessado na visualização das abas.

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## Cloud Services

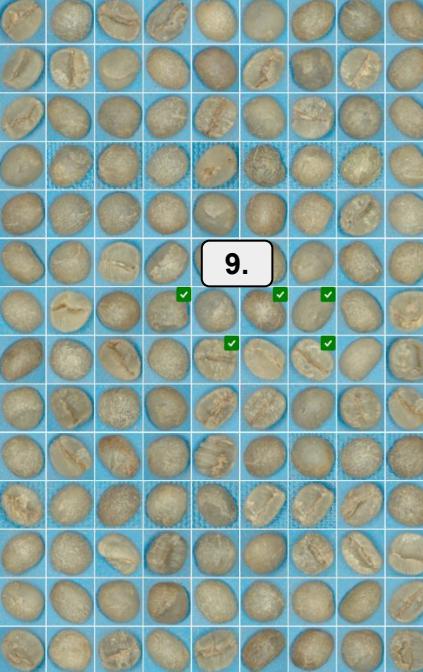
- [Upload Analysis](#)

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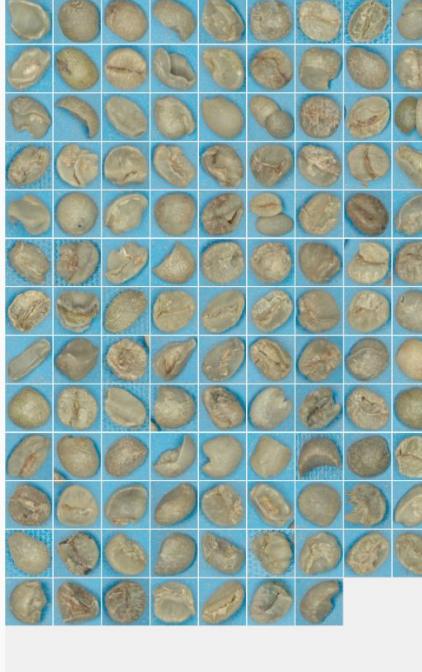
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Non Defective Seeds  
 OK Classes  
 643 Seeds | 85.51%  
 Dominant Color: RGB(158, 153, 127)  
 Color by Class  
 Draw Perimeter  
 Draw Min Axis



9.

Defective Seeds  
 NOK Classes  
 115 Seeds | 14.49%  
 Dominant Color: RGB(158, 153, 126)  
 Color by Class  
 Draw Perimeter  
 Draw Min Axis



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Edit Selection    10.    Clear Selection

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11.

**Image Mosaic**

9. Pressionando **CTRL** e clicando nas células da grade é possível selecionar múltiplas imagens de uma vez. Uma marca de seleção verde é mostrada em cada semente selecionada.

10. Ao pressionar **Edit Selection**, um menu lateral será aberto, permitindo ao usuário alterar a classe de todas as imagens selecionadas de uma só vez.

11. Para redefinir a seleção, o usuário pode clicar no botão **Clear Selection**.

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Non Defective Seeds

OK Classes

643 Seeds | 85.51%

Dominant Color: RGB(158, 153, 127)

Color by Class     Draw Perimeter     Draw Min Axis

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Seed Features

Classification

Select class

12.

# Image Mosaic

12. Use o menu de seleção para atribuir uma nova classe às imagens selecionadas

# Classification Report

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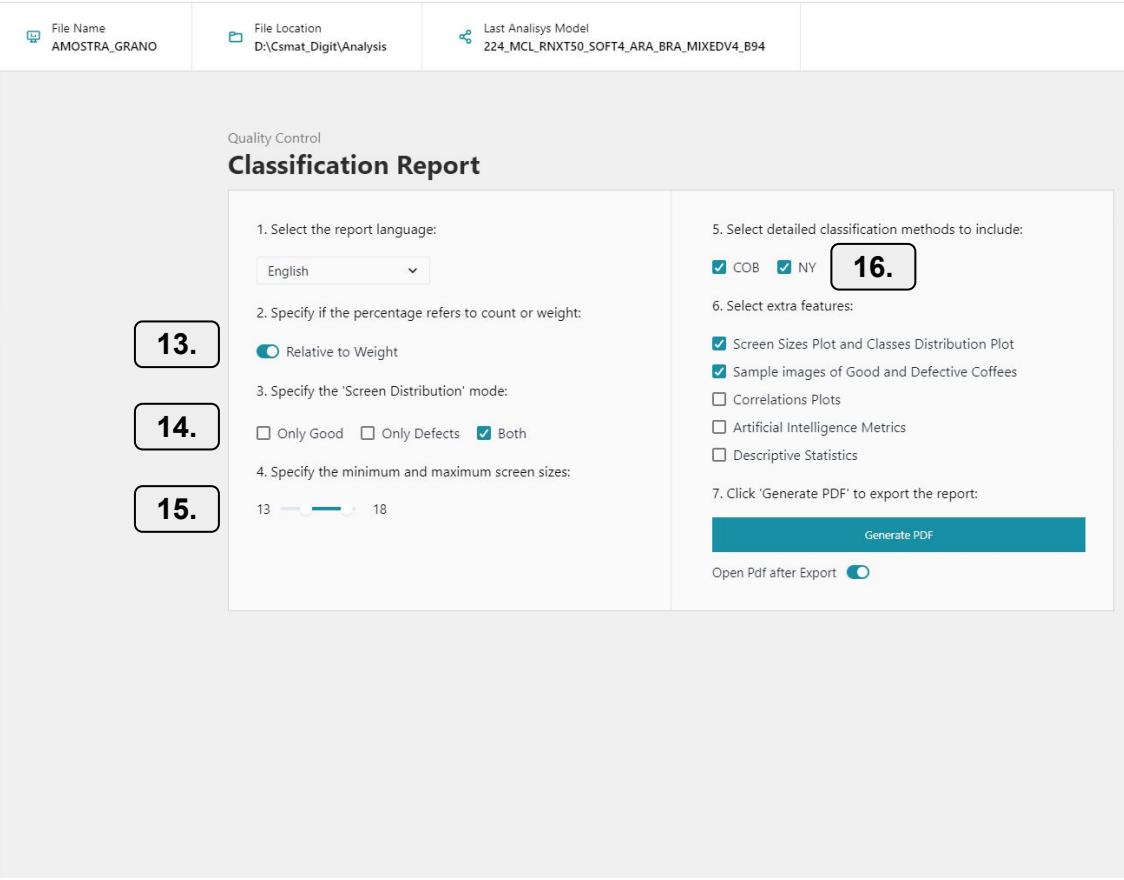
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Quality Control

## Classification Report

- Select the report language: English
- Specify if the percentage refers to count or weight: Relative to Weight
- Specify the 'Screen Distribution' mode: Both
- Specify the minimum and maximum screen sizes: 13 - 18
- Select detailed classification methods to include: COB, NY
- Select extra features: Screen Sizes Plot and Classes Distribution Plot, Sample images of Good and Defective Coffees
- Click 'Generate PDF' to export the report: **16.**

Open Pdf after Export:



13. O relatório de classificação incorpora alterações na distribuição de peneira, permitindo que seja representado em relação ao peso ou em relação à contagem.

14. Pode-se selecionar somente café bom, somente café defeituoso, ou ambos, para geração das tabelas e gráficos do relatório.

15. O usuário pode especificar limites para o tamanho de peneira.

16. Uma nova caixa de seleção permite especificar o método a ser incluído no relatório.

# Classification Report

The screenshot shows the CSMART DIGIT Quality Control application. At the top, there are file details: File Name (AMOSTRA\_GRANO), File Location (D:\Csmat\_Digit\Analysis), and Last Analysis Model (224\_MCL\_RNXT50\_SOFT4\_ARA\_BRA\_MIXEDV4\_B94). On the right, there are three icons: a red square with a white 'x', a user profile icon, and a right-pointing arrow.

The left sidebar contains the following menu items:

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  - Export Data
  - Export Images** (highlighted)
  - Compare
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A large central window displays the "Export Images" dialog box. The title is "Export Images". Inside, there are two sections:

1. Please select the image export mode:
  - Export all classes (Classification results)
  - Export as a single class (Dataset creation)
  - Export corrected images only (Model improvement)
2. Click 'Export Images' to save individual images

At the bottom of the dialog box is a large teal button labeled "Export Images". Below it is another button labeled "Open folder after saving" with a checked radio button.

A large number "17." is overlaid on the left side of the main window area.

**13. A exportação de imagens foi dividida em três modos diferentes:**

**Exportar Todas as Classes:** Salva uma nova pasta para cada classe, contendo as respectivas imagens dentro.

**Exportar como uma Única Classe:** Salva todas as imagens em uma única pasta e é destinado à criação de conjuntos de dados de treinamento, particularmente em casos onde a amostra de entrada é previamente conhecida por ser de uma única classe.

**Exportar Imagens Corrigidas:** Exporta apenas as imagens cuja classes foram alteradas pelo usuário.



CSMART COFFEE TECHNOLOGIES SA

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