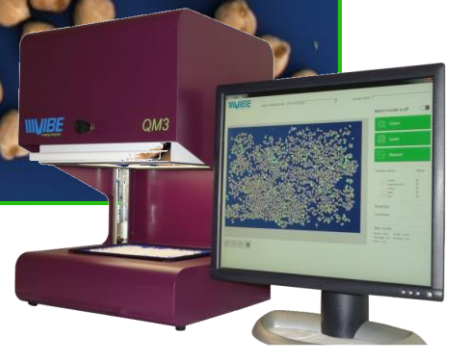


CHICKPEAS Phenotyping



Key Capabilities

- ✓ Absolute color characterization in Lab and RGB scales
- ✓ Grains counting
- ✓ Broken grains detection (%)
- ✓ 1,000 grains weight
- ✓ Grain and sample level dimensions and statistics:
 - ❖ Length
 - ❖ Width
 - ❖ Area
 - ❖ Length to Width ratio
- ✓ Color recognition:
 - ❖ Normal range
 - ❖ Damages
 - ❖ Abnormal colors
- ✓ Seeds grouping by size
- ✓ Results stored in Excel and SCV files for traceability and further analysis

Additional Information

- ✓ Sample weight- up to 100 grams (~300 grains)
- ✓ 20 seconds analysis time
- ✓ 25 micron measurement accuracy
- ✓ 240 X 170 mm (9.5" X 6.7") Inspection area
- ✓ Advanced algorithm for high density sample
- ✓ 2,000 color pixels per grain
- ✓ High resolution industrial grade camera
- ✓ No minimum sample size

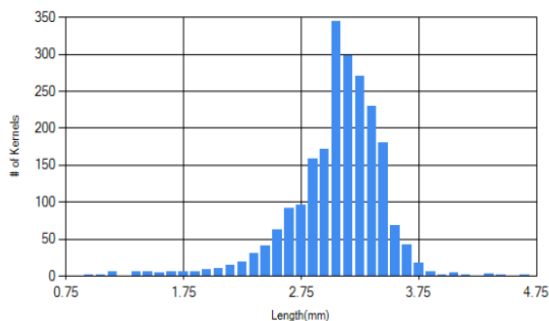
User Main Report

Rice Type: Mixed (by LW Ratio)

	Type	% Of Weight	% Of Kernels	# Of Kernels	% Of defined as fail	Min	Max
▶	Long	0.53	0.99	22		3.00	8.00
	Medium	16.11	19.23	426		1.90	3.00
	Short	81.50	76.79	1701		1.00	1.90
	Broken	1.15	2.62	58	68		
	Size outlier	0.71	0.36	8			
	Total	100.00	100.00	2215			
	Total other types	0.00	0.00	0			

Distribution

Length Width Area LW Ratio



Color Analysis

	Type	% Of Weight	% Of Kernels	# Of kernels	% Of defined as fail	Min Threshold	Max Threshold
▶	Undefined Color	0.33	0.36	8	80	34	100
	White	0.31	0.27	6	40	75	100
	Yellow	0.00	0.00	0	50	88	119
	Red	0.03	0.05	1	30	0	43
	Black	0.42	0.59	13	8	0	46
	Green	0.00	0.00	0	20	120	200

Dimentional Information

Dimensional information	Value
# Of kernels	2215
# Of whole kernels (WK)	2149
% Whole kernels (WK)	97.02
% Weight Of whole kernels (WK)	98.14
Average WK length (mm.)	3.00
Average WK width (mm.)	1.81
Average WK area (mm²)	4.05
Average WK L/W ratio	1.71
Weight 1,000 (gr.)	27.1
Weight of sample (gr.)	6.00

Statistical Report Per Sample

Sample Report Per Grain

1	Date	2018_3_11
2	Time	12:49:51
3	InstrumentID	
4	ProductType	
5	CalibrationFile	
6	SWVersion	
7	SampleName	
8	SampleComments	
9	SampleError	
10	SampleWeight	
11	NumberOfParticles	
12	WKWeightPerc	
13	WKPerc	97.02
14	WKNumber	2149
15	WeightOf1000Particles	2.71
16	BrokenWeightPerc	1.15
17	BrokenKernelsPerc	2.61851
18	BrokenKernelsNumber	58
19	BrokenThreshold	2.097481
20	BrokenDefinedAsFailPerc	68
21	OutlierWeightPerc	1.861467
22	OutlierKernelsPerc	2.979684
23	OutlierNumber	8
24	OutlierThresholdWidth	2.692867
25	OutlierThresholdLength	4.152913
26	OutlierThresholdArea	6.988145
27	OutlierThresholdLW	2.603892
28	SampleWidthAverage	1.775258
29	SampleWidthMedian	1.840562
30	SampleWidthSTDEV	0.288652
31	SampleLengthAverage	3.053979

ID	Size Class	Width	Length	LW	Area	EstimatedWeight	ModeRgbR	ModeRgbG	ModeRgbB
1	WK	0.75	2.125	2.833333	1.184687	0.00156	142.44	104.59	70.00
2	WK	1.625	2.5	1.538462	2.964375	0.003488	188.26	150.41	101.00
3	WK	1.900669	3.046637	1.602929	4.136562	0.001665	196.23	160.37	101.00
4	WK	1.728665	2.684521	1.552945	3.344063	0.005468	186.27	145.43	92.00
5	WK	2.15343	3.161103	1.467939	4.672187	0.007422	188.26	154.39	118.00
6	WK	1.8125	3.125	1.724138	4.036875	0.001625	200.21	163.36	101.00
7	WK	1.850859	3.284942	1.77482	4.539375	0.007211	191.25	162.36	101.00
8	WK	2.0625	3.1875	1.545455	4.854063	0.00771	200.21	164.36	101.00

3D Grain color distribution

