

CT-VIEU

A Machine Vision Solution for Quality Analysis of Chillies & Turmeric

Quality attributes of Chilli (Export standard):

- Colour: Must be bright red
- Length: greater than 5 cms (less than 5 cms allowed only 5% by weight)
- Foreign matter: less than 2%
- Broken chilli: Less than 7%
- Loose seeds: Not more than 2%
- Damage and discolored pods: allowed up to 6%
- Pods with out stalks: Not more than 8%

Quality attributes of Turmeric:

- Length: More than 300 mm
- Broken Percentage: less than 3 % [Fingers length less than 15 mm]
- Unboiled/ less boiled – Less than 0.3%
- Bulb should not be more than 3%
- Bhusa, chaff drift, earth clods and stones etc. – Less than 3%
- Turmeric should be free from fungus.
- Damage due to moisture (i.e. Lokhandi) or over boiling (i.e. Kadh) – Less than 1.2 %
- Inferior quality Turmeric – Less than 1.5 %

Present method of Analysis & Problems:

Manual

Problems with present method

- Process involves human perception, which is highly subjective, prone to error.
- Time consuming



Different types of Chillies



Broken Chillies



Chillies without stalk



Different types of Turmeric

CT-VIEU is an image processing based solution for appearance based quality attributes of chilli and turmeric.

System Features:

- Bench-top, portable model with embedded computer.
- Touch operated GUI and Online Image analysis.
- Image Processing based quality analysis software solution.
- Low cost Digital Camera (Image Resolution: 2MP) for Image acquisition.
- Instant weight measurement of the sample.
- Instant Analysis & Report Generation.
- Printer interface & email with report (Optional).
- Can be customized for other spices, say Cardamom, etc.



Benefits:

- Image processing based non-invasive technique.
- Fast & reliable.
- Quantify quality parameters.

Target Users:

- Exporters
- Research Laboratory
- Quality Control Laboratories

Sl.	Chillies	Pd>5cm	W.O.S	Broken	D.C.P	Good	Seeds	F_Matter
281	14	8	3	2	4	5	0	0
282	4	2	0	0	0	2	0	0
283	4	2	0	0	0	2	0	0
284	3	3	1	0	0	2	0	0
285	2	1	0	0	1	1	0	0
286	3	3	1	0	0	2	0	0
287	5	5	0	0	0	5	0	0

Software Screen Shot for Analysis of Chillies

Sl.	Turmeric	Turmeric>3cm	Turmeric<15mm	Bulbs	Damaged	F_Matter	Patch	Good
183	2	1	1	0	0	0	0	1
184	2	1	1	0	0	0	0	1
185	7	3	2	0	0	0	0	3
186	4	2	1	1	0	0	0	2

Software Screen Shot for Analysis of Turmeric



Centre for Development of Advanced Computing, Kolkata Centre

Plot-E2/1, Block-GP, Sector-V, Salt Lake Electronics Complex, Bidhan Nagar, Kolkata - 700 091

Telephone: 91 33 2357 9846/3581/3950/5989/4258 Fax: 91 33 2357 5141 Website: www.cdackolkata.in