ANNADARPAN
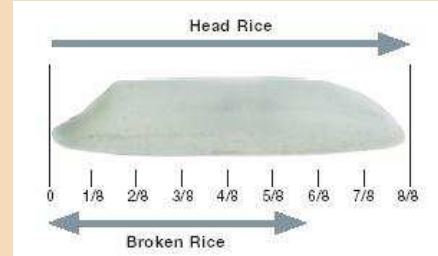## ELECTRONIC VISION FOR QUALITY ANALYSIS OF RICE

Quality of Rice is determined by:

A. Physical characteristics, namely, Hulling %, Milling %, Head Rice Recovery %, Kernel Length, Kernel Breadth, L/B Ratio, Grain Chalkiness, Kernel Length after cooking, Elongation Ratio, Aroma, Moisture Contain etc.

B. Chemical characteristics, namely, Water Uptake, Volume Expansion Ratio, Alkali Spreading Value (ASV), Gelatinization temperature, Amyloze Contain, Gel Consistency, etc.

Characterization of Basmati Rice based on size and shape

Scale	Size	Length (in mm)	Shape	L/b ratio
1.	Extra Long	> 7.50	Slender	> 3.0
2.	Long	6.61-7.50	Medium	2.1 – 3.0
3.	Medium	5.51-6.60	Bold	1.1 – 2.0
4.	Short	5.50 or <	Round	1.0 or <

ANNADARPAN an image processing based non-invasive, fast & reliable solution for online rice quality analysis based on its physical appearance.
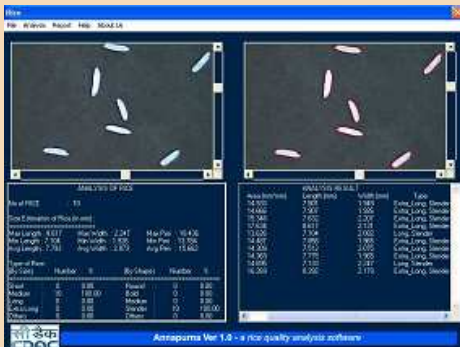
Applications:
- ❑ Quality analysis of rice (Basmati & other varieties)

Target Users:
- ❑ Rice producers/Growers and Exporters.
- ❑ Agricultural Centers/ Research Laboratory.
- ❑ Food processing laboratories.
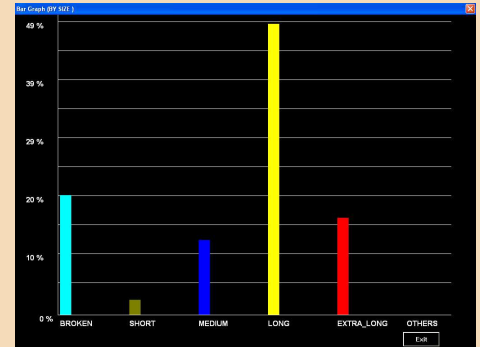- ❑ Food Safety & Quality Laboratories.

Features:
- ✓ PC based online Image capture and instant analysis of the rice sample.
- ✓ Analysis of individual rice grain.
- ✓ Graphical user Interface for easy operability.
- ✓ Bar plot for distribution of different rice grades.
- ✓ Instant report generation, print out facility.
- ✓ Compact in size for field mobility.

Software Screen for Rice Quality Analysis

Electronic Vision system for Rice Quality Analysis

Bar graph for Different Rice Grades

Dimentional Analysis of different Rice Varieties using E-Vision System

Physical Quality Parameters	Pusa Basmati-I			Basmati 370		
	Paddy	Brown	Polished	Paddy	Brown	Polished
Average Length (mm)	10.572	8.262	7.2415	9.504	7.9123	7.1509
Average Breadth (mm)	2.319	2.240	1.958	2.407	2.291	2.223
Average Area Avg (mm^2)	23.170	15.229	14.882	18.150	16.589	15.767
Average L/B ratio	4.632	4.276	3.269	4.621	3.472	2.989

Physical Quality Parameters	Gobinda Bhog			Radhuni Pagal		
	Paddy	Brown	Polished	Paddy	Brown	Polished
Average Length (mm)	6.498	4.7318	4.2945	4.636	4.7768	4.2029
Average Breadth (mm)	2.195	2.117	2.092	2.165	2.428	2.276
Average Area Avg (mm^2)	12.930	8.602	8.117	9.868	8.111	8.085
Average L/B ratio	3.083	2.295	1.970	2.207	1.981	1.862

The product is commercially manufactured, marketed and maintained by the following Technology Partner of C-DAC Kolkata

◉ **M/s. Nagarjuna Fertilizers & Chemicals Ltd., 1, Nagarjuna Hills, Panjagutta, Hyderabad – 500 082; Ph: 040 2335067 / 23350232; E-mail: vijay@ikisan.com.**

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