

# RESHAM DARSHAN

A Machine Vision Solution for Colour Analysis of Silk Yarn - A Sub-project under the eAgriEn Program

## About Silk Yarn

- ❑ Commercially two types of yarns are produced - Spun yarn (coarse) and Reeled yarn (fine).
- ❑ The colour of Tasar yarns is determined by a number of production factors (e.g. cocoon type, selection of cocoons etc).
- ❑ Tasar yarns are of different colours at the producers level.
- ❑ These needs to be sorted before packing.
- ❑ Market demands lots with perfectly uniformly coloured yarns within the lot though inter-lot variation in colour is encouraged.
- ❑ Non-uniform colour of silk yarn deteriorates the performance of weaving.



Different Colour of Silk Yarn

## Present Method of Sorting & Problems

- ❑ Sorting is done manually, by sorting individual hanks with naked eye by skilled personal.
- ❑ Problems with present method:
  - ✓ Tasar silk yarn is lustrous in nature; it reflects light, thus difficult to ascertain the exact colour manually.
  - ✓ Human eye may not separate small variations in colour. Require skilled manpower.
  - ✓ With the change in the source and intensity of light the colour of yarn shows differently.
  - ✓ Process involves human perception, which is highly subjective, prone to error.
  - ✓ Separation of large number of silk yarn is monotonous, tedious – creates fatigues to the human beings.
  - ✓ No standardization in colour.

## Resham Darshan

An image processing based solution for Colour Characterization of reeled as well as span yarn of silk.

## Target Users

- ❑ Tasar yarn producers/buyers and Exporters.
- ❑ Sericulture Research Laboratory.
- ❑ Yarn processing / Quality control laboratories.

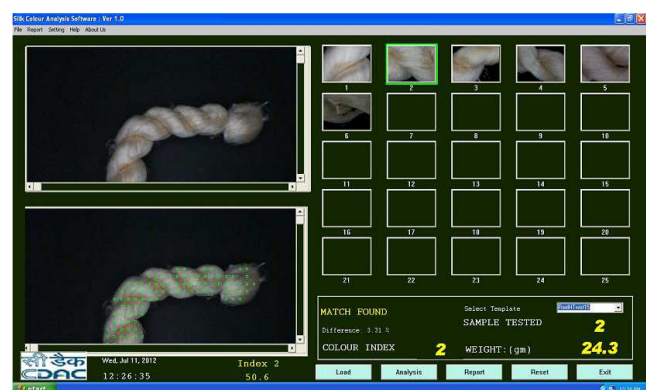


Resham Darshan System for Silk Colour Analysis

## Applications - Grading of silk based on colour.



Yarn Colour sorting using Resham Darshan System



Software Screen for Silk Colour Analysis

## Features:

- ✓ Graphical user Interface for easy operability.
- ✓ Building colour templates automatically and Colour comparison.
- ✓ Online weight measurement and Data logging.
- ✓ Bar plot for distribution of different silk grades, Instant report generation and print out facility.
- ✓ Compact in size for field mobility.
- ✓ PC based online Image capture and instant colour analysis of the silk sample.

## Benefits

- ❑ Performance improvement in terms of accuracy & consistency.
- ❑ Reduces dependency on skilled manpower.
- ❑ Sorting is possible at night also.
- ❑ Standardizing the silk grade based on colour.