



Chemical Dyeing

Arthur van Grootheest

#1

OBJECTIVES



OBJECTIVES

- To improved process, quality, consistency, market access requirements (AZO free)
- To address specific challenges faced by SMEs to find out the solution for participants with different levels of knowledge on chemical dyeing

#2

MAIN ISSUES' DESCRIPTIONS



Color Inconsistency

Even when following the recipe, color differences occur, especially when different staff members work on batches.

Companies usually question what the most important factors in achieving consistency are: chemicals, water pH level, temperature, etc?

Also, the use of suitable equipment is often overlooked by the SMEs.

#3

RECOMMENDATIONS



RECOMMENDATIONS

- Dissolve the right amount of salt to the right amount of water and add the additives described in the recipe.
- Pre-wet the yarn well.
- Weigh thoroughly the different amounts of dyestuff and dissolve them completely in some of the salt water from the bath.



RECOMMENDATIONS

- Do not overshoot the temperature too much when dyeing (temperature should NOT go above 63°C and do not go below 58°C).
- When fixing with Soda Ash, you can go up to 65°C, but not below 60°C
- When working with concentrated powder or liquid chemicals wear gloves and a mask.



Necessary equipment for SMEs

Plastic measuring
beakers



Plastic measuring
cylinders



Plastic measuring
cylinders



Necessary equipment for SMEs

Precision scale



High capacity weighing scale with large surface



Color Consistency

- While 100% consistency may be challenging to achieve, key factors influencing consistency include the quality of chemicals, water pH levels, temperature control, and accurate color assessment.
- While light boxes can be helpful, they may not always provide the most reliable color assessment. Alternative methods, such as spectrophotometers, can offer more precise color measurements.



Color Consistency

- Handling yarn batch differences requires careful attention to factors like fiber content, dyeing conditions, and pre-treatment processes.
- Dyeing fancy yarns with multiple compositions can be more complex due to variations in fiber properties. Ensuring proper application of softening agents and hardening chemicals is crucial for achieving desired fabric finishes. Regular maintenance of equipment and machinery is essential for optimal performance and longevity.
- Stainless-steel pots are recommended, which will significantly impact the scouring and bleaching processes.

Dyeing ikat with machine

- While dyeing ikats in a machine is possible, it may require adjustments to the dyeing process to accommodate the unique characteristics of ikat fabrics.
- Enhanced understanding of factors affecting consistency, improved color assessment methods, and increased knowledge of dyeing techniques for various yarn types and finishes evidently helps with the new knowledge.



Continuous improvement as a key

Continuous practice and refinement are necessary to achieve consistent and high-quality results. Most of the time, it requires much effort, support and external as well as internal guidance for SMEs to come up with good recipe calculation and process control.





THANK YOU FOR YOUR ATTENTION!