

Evaluation Method of Cotton Stickiness using Color reaction

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1. Abstract

Honeydew on the surface of cotton fiber could be transferred to a metallic surface of the spinning machines or rubber rollers, etc., resulting in lapping. As a result, it may lower the efficiency of the yarn production and yarn quality. Cotton stickiness is due mainly to entomological sugars produced by insects, which are so called honeydew. This test method is used to evaluate the degree of honeydew contamination by visualization of honeydew droplets in cotton fiber.



2. Objective

Evaluation of stickiness through the information on the amount and the degree of distribution of honeydew droplets by easy and quick method

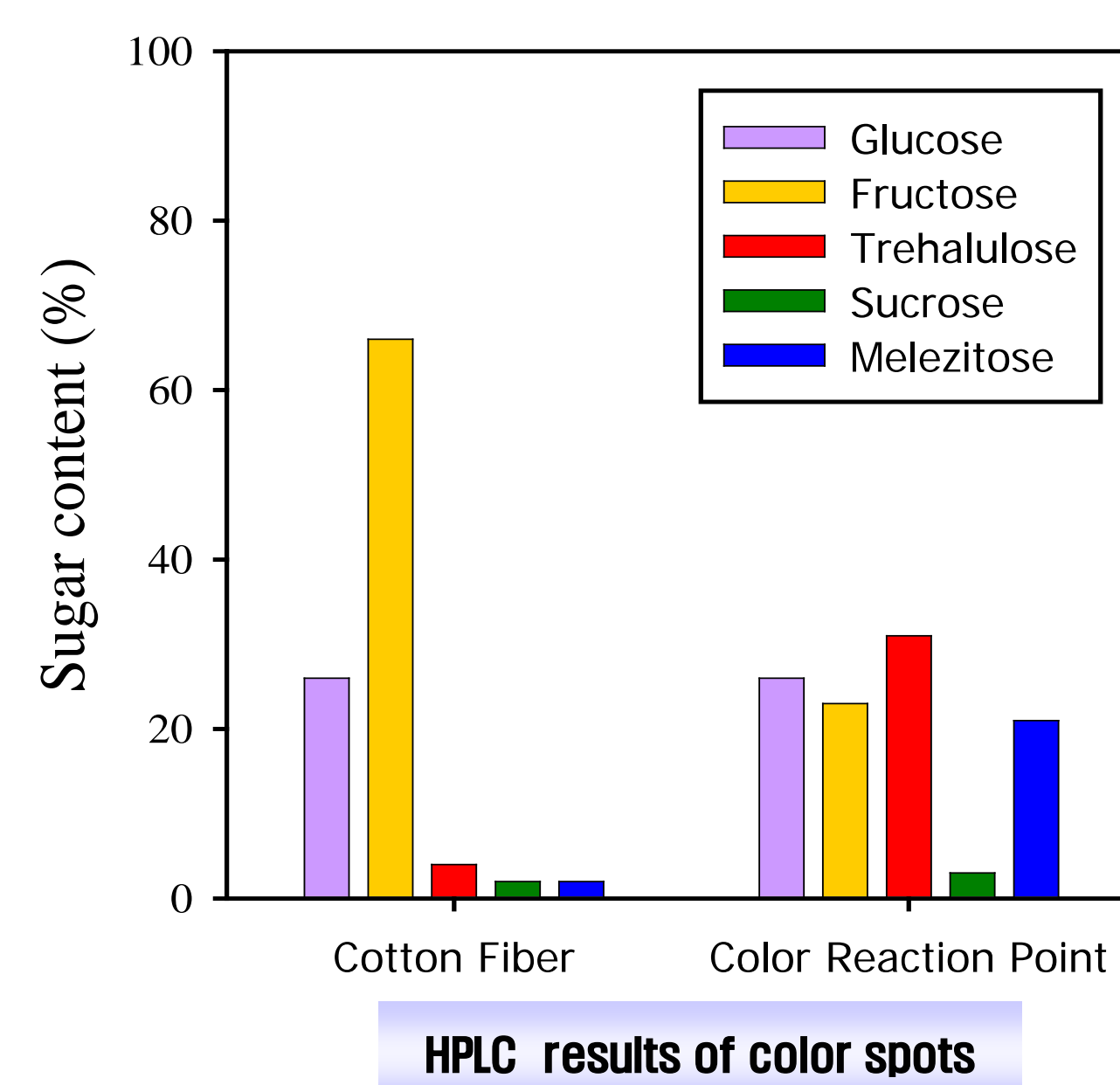
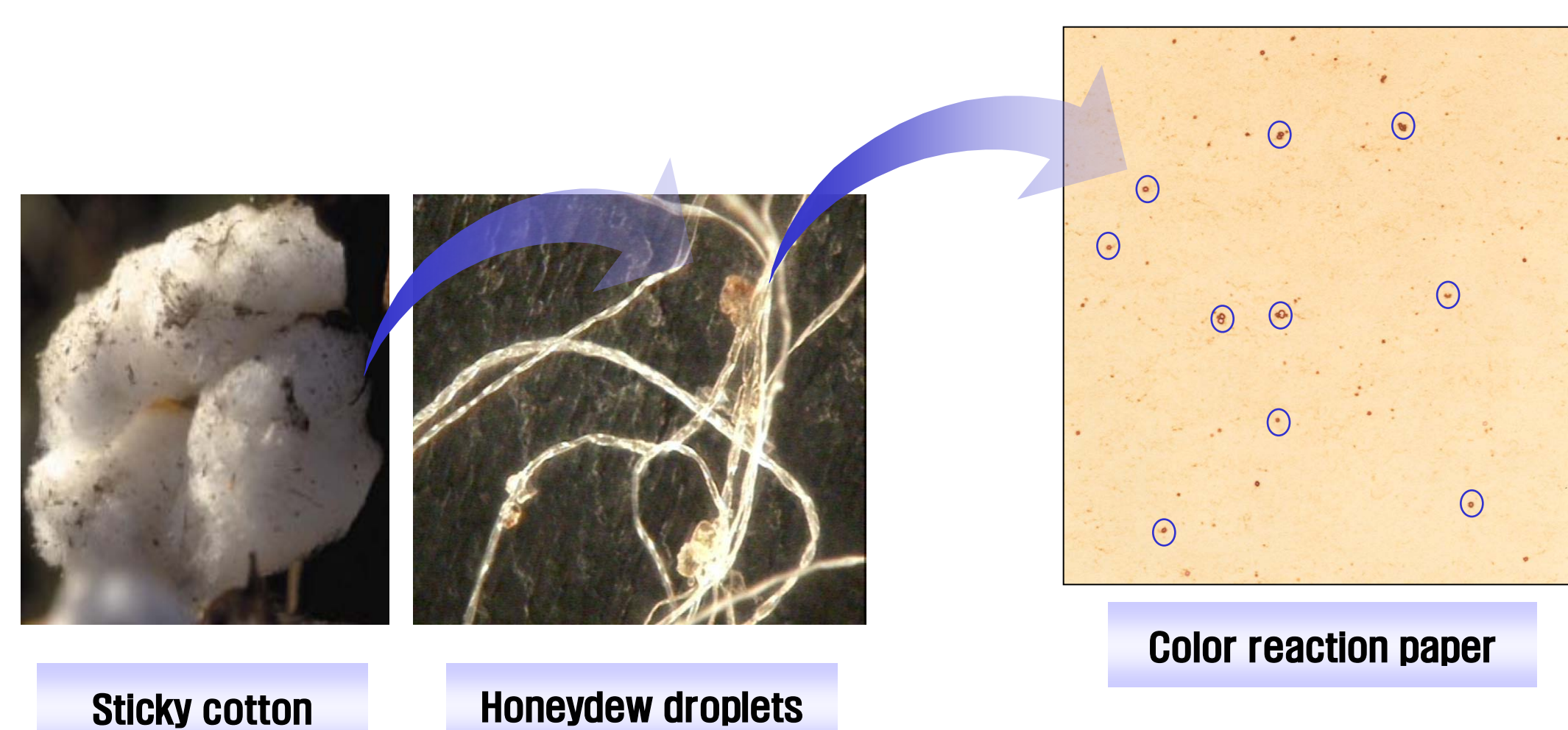
3. Introduction

Developing brown color spots on color reaction paper by applying pressure and transferring the honeydew on the sample web to the color reaction paper

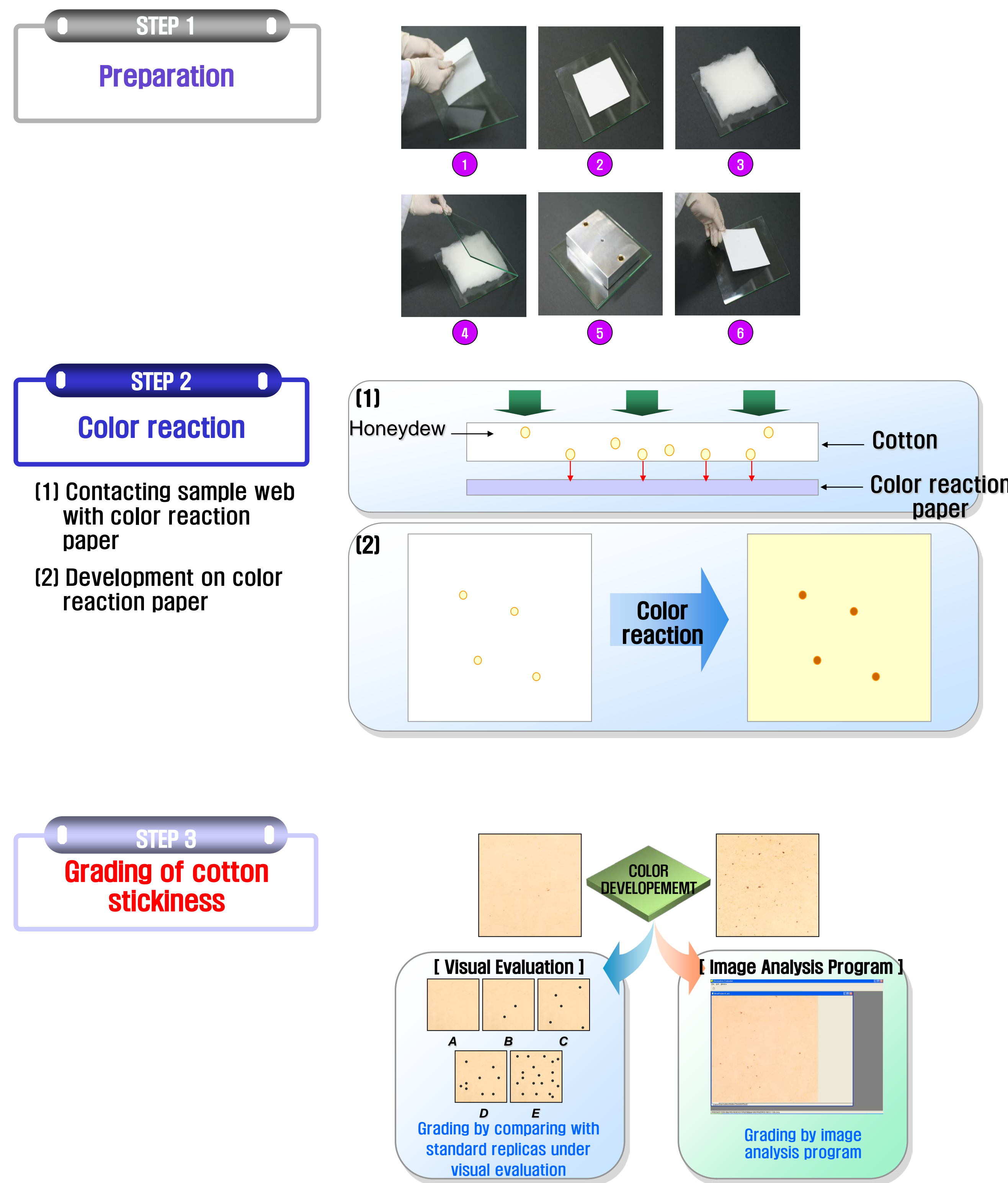
- Color reaction mechanism :
Maillard's reaction using p-aminobenzoic acid

Features

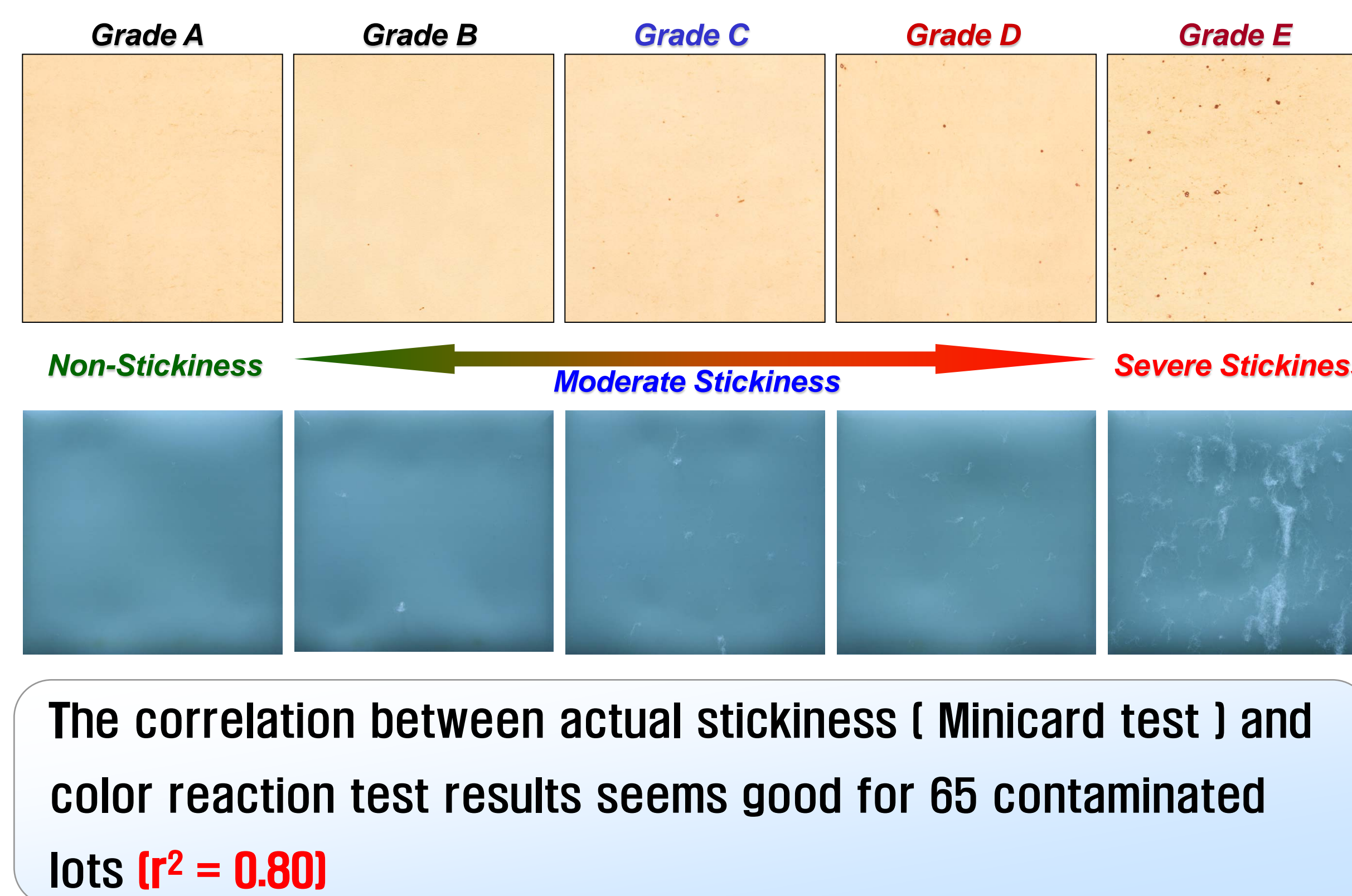
- Easy detection of the amount of honeydew droplets with the naked eyes
- The test result is not affected by sample conditioning and by atmospheric condition during test.



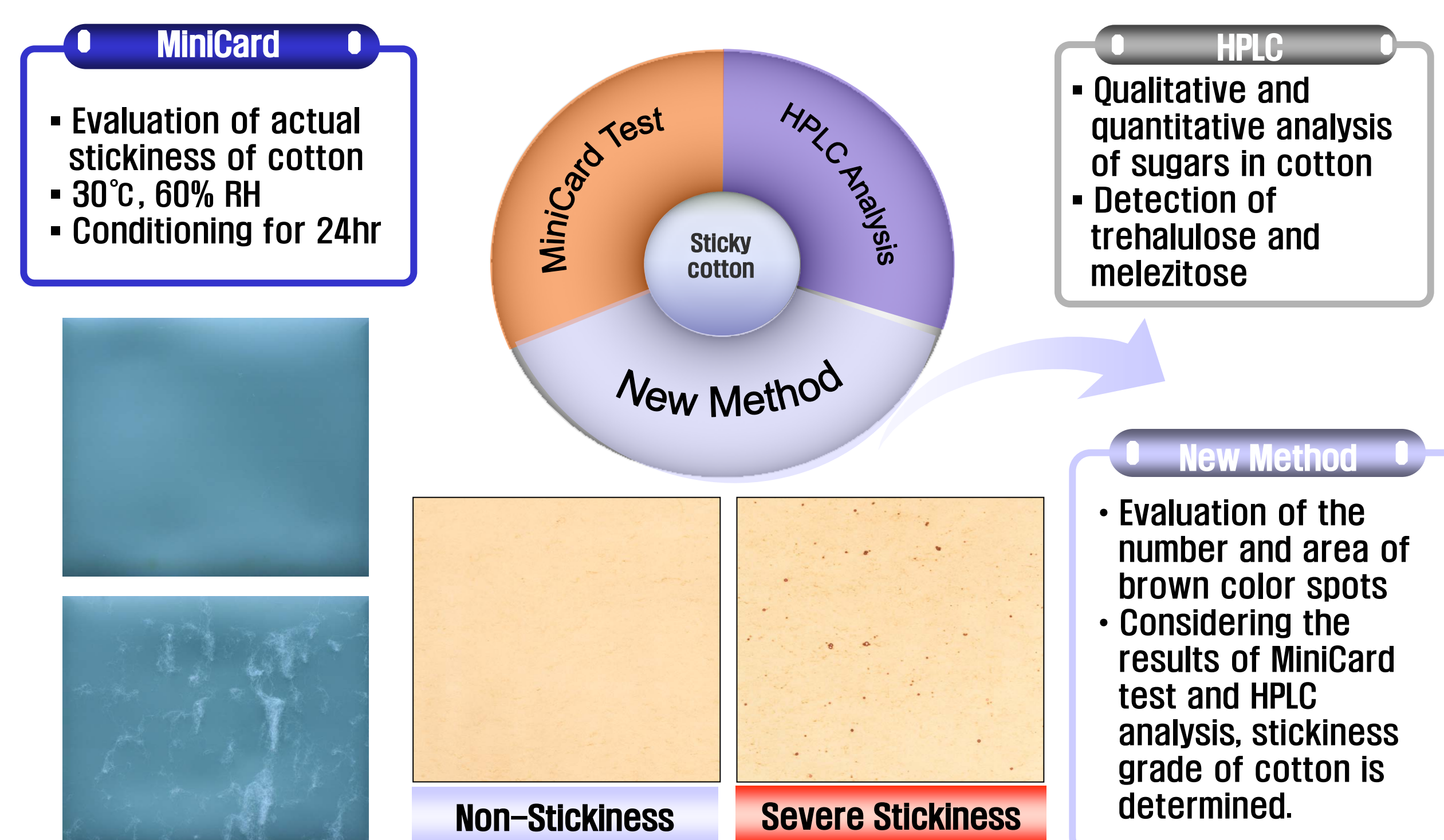
4. Test Method



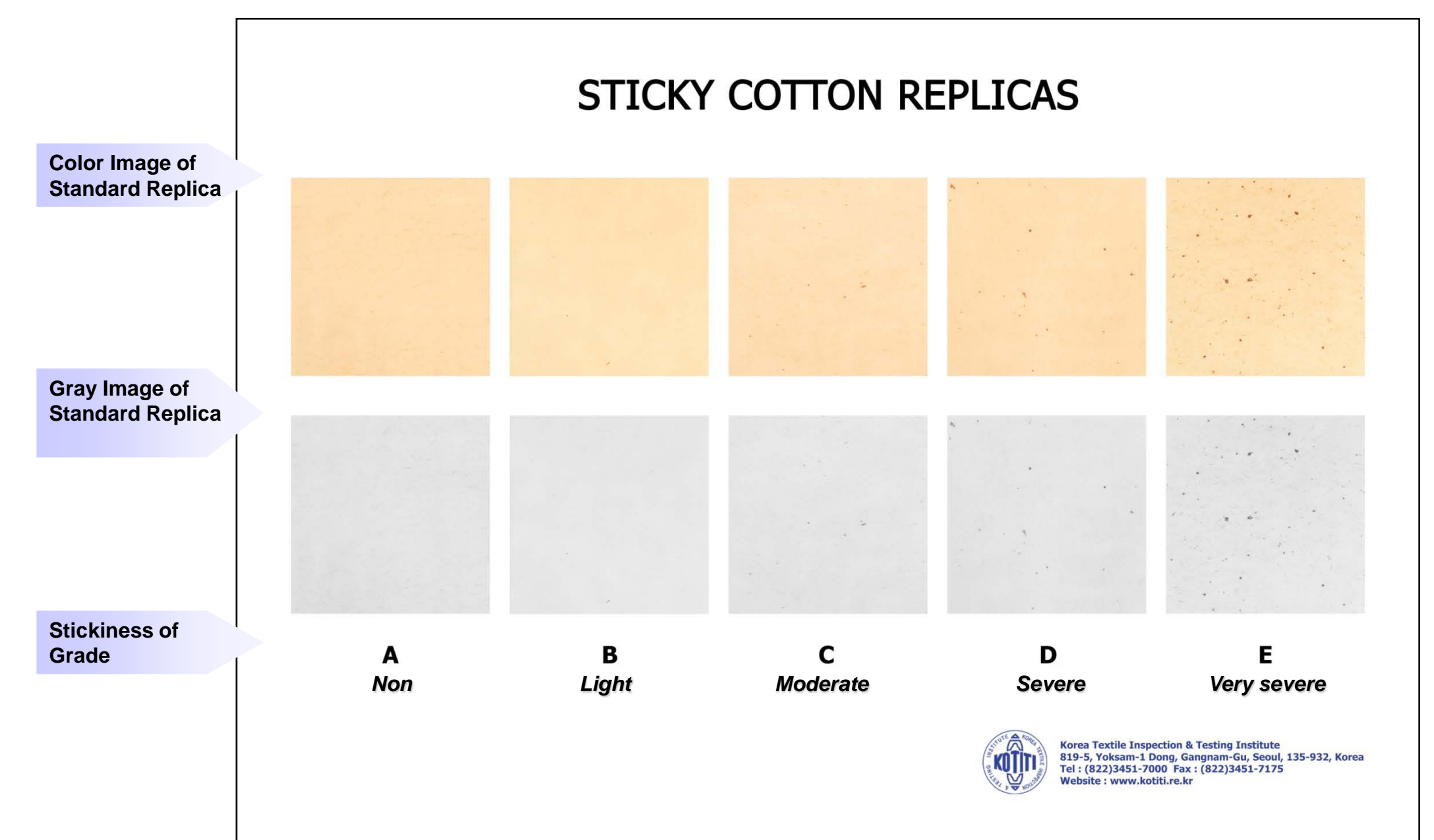
5. Result



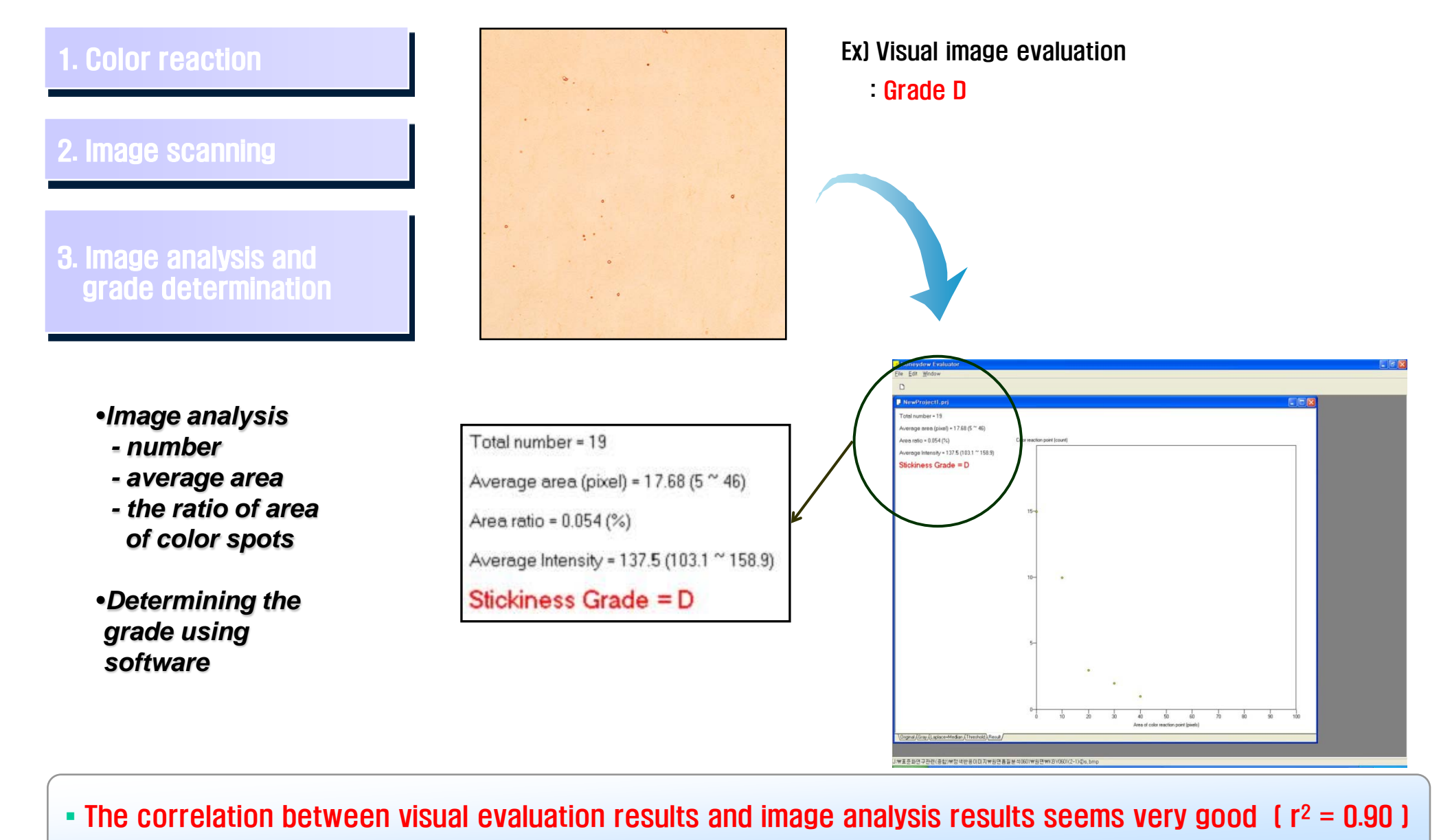
Preparation of standard replicas



Visual Evaluation



Evaluation using image analysis program



6. Conclusion

- Development of new evaluation method for cotton stickiness
 - Color reaction method for sticky components in cotton fiber
 - Standard replicas and image analysis program for grading cotton stickiness
- This method is registered on Korea industrial Standard in 2007.
 - KS K 0345 " Evaluation method for cotton stickiness "
- This method is registered on PCT(Patent Cooperation Treaty).
 - International Application No. : PCT/KR2007/004162 (8. 31. 2007)
 - "Evaluation method of cotton stickiness using color reaction and image analysis "
- ISO registration is in progress.
 - Present stage : TC38/SC 23 Fibers and yarn / DIS 12027
 - "Textiles-cotton fibers-stickiness-Detection of sugar by color reaction "

