

**WHITE VINEGAR: A NATURAL HOME BLEACHING AGENT FOR
COTTON FABRIC**

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ABSTRACT

WHITE VINEGAR: A NATURAL HOME BLEACHING AGENT FOR COTTON FABRIC

Bleaching has become main priorities activity for laundry in every home in this world. There are many conventional bleaching products in the market that people can choose according to the label and packaging that attract them. However, they do not know that those bleaches actually contain very high chemical that speed up the process of bleaching such as sodium hypochlorite and sodium chlorite. These chemicals may harm and give bad effects on the skin and body especially to the infants and their pets. Therefore, natural bleach has solution that can substitute conventional bleach by using natural sources include citric acids, vinegar and many more. This natural bleach could less or almost no risks on the irritation, skin burns and respiratory problems. In this study, natural white vinegar is used to substitute the conventional bleach that produced from sun-ripened corn grain with water. This vinegar has 5% acidity that suitable for laundry and cleaning. Apart from that, there are three volumes of white vinegar and conventional bleach were used which are 30 mL, 60 mL and 90 mL for each these bleaches. Then, they were mixed with 800 mL of 80°C hot water in suitable and separate containers. Next, about 3 metres of cotton fabrics were used, immersed in these mixtures and soaked in 30 minutes. Lastly, the cotton fabrics were rinsed with water and dried under the sunlight. The fabrics then were cut according to testing samples needed. The tests that are done on those fabrics are whiteness test, gray scale for change in colour, crease recovery test, tensile and tearing strength test as well as absorbency test. Thus, making this natural white vinegar as bleach might give the best result for every testing and bleaching itself. Results show that conventional bleached fabric has high whiteness than natural bleached fabric as it has high value and even reflectance that near to 100%. Moreover, conventional bleach showed good results in bleaching where the greige fabric changed into white cotton fabric. Furthermore, crease recovery test showed that conventional bleached fabric has better recovery. However, natural bleached cotton fabric is stronger in tensile and tearing test as well as good in water absorbency.

CHAPTER 1

INTRODUCTION

1.1 Background

Bleaching is almost become the main priorities while doing laundry whether for household or in laundry industry to whiten and remove the natural colourant, water and oil borne soils. However, most laundry uses chemical bleach that has very high in chemical and corrosive. As a result, it may cause skin burns, irritation and respiratory problems (Grey, 2016) even though bleach has the advantage to kill the worst bacteria. There is one solution to avoid or less the risks by using natural bleach. Natural bleach is commonly used by housewives and laundry experts that usually made from natural sources such as fruits and other non-chlorine bleach.

The typical natural bleach used is citric fruits such as lemon and lime where the juices or slices of lemon/ lime are mixed with hot water and started soak the clothing in the lemon/lime water in appropriate time before drying process. Besides that, white vinegar also become one of the choices and categorized as natural bleach. However, most of the people are using regular white vinegar that contains high amount of acetic acid or petroleum because they do not know and lack of knowledge about the ingredients.