

**ABSTRACT**

**NAME OF INSTITUTION:** De La Salle University - Aguinaldo

**ADDRESS:** Bagong Bayan, Dasmarinas, Cavite

**TITLE: THE POTENTIAL MUTAGENIC EFFECT OF THREE SELECTED BRANDS OF VINEGAR ON Allium fistulosum (MULTIPLIER ONIONS)**

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**FUNDING SOURCE:** Personal      **COST:** P 5,000.00

**DATE STARTED:** October 1995      **DATE COMPLETED:** January 1996

**OBJECTIVES OF THE STUDY:**

1/ This study aimed to test for the viable presence of any mutagen in commercially produced vinegars in the market by examining the morphological changes of chromosomes in Allium fistulosum thru standard mutagen test using Allium fistulosum as test subject!

**SCOPE AND COVERAGE:**

The experiment was performed at one of the researcher's home, at Pilar Village, Las Piñas and at the DLSU - Taft for the use of the photomicroscope. 2/ The researchers prepared multiplier onions (Allium fistulosum) to test the presence of mutagens in 3 selected cane vinegars. Observations were based on root

growth and physical features of the chromosomes.<sup>2/</sup>

**METHODOLOGY:**

This study employed the descriptive research method to obtain the essential results needed for the confirmation of mutagens present in the cane vinegars.

**MAJOR FINDINGS:**

The finding regarding this study showed that root growth took place only in  $T_0$  and  $T_1$  of all the vinegar brands. No roots developed in  $T_2$ ,  $T_3$ , and  $T_4$  of brands A, B and C. It was noted also that rotting was exhibited by the multiplier onion bulb on their root growing region (for  $T_2$ ,  $T_3$ , and  $T_4$  for brands A, B and C).

In  $T_1$  of brands A, B and C the tissue samples showed no change in chromosome number and morphology as observed at metaphase. But anomalies at anaphase was noted in a few cells. Arms or a single chromosome stick at the equator during the movement of chromosome at the opposite poles of the spindle.

**CONCLUSION:**

<sup>3/</sup>Based on the findings and data gathered, the researchers conclude that germination of the root of multiplier onions on the different concentrations of three selected brands of cane vinegar, only the  $T_0$  tap

water and T1 5.5 ml cane vinegar have roots. The T2, T3, and T 4 had nothing. Therefore the higher concentration of the three selected brands of cane vinegar the smaller germination of the roots of the multiplier onions.<sup>3/</sup>

**RECOMMENDATION:**

It is recommended that the effect of the cane vinegar be observed at the gene level using the Allium test; that the physiological effect be considered on the concentration of cane vinegars as applied in each treatment; and that the different treatments must be under 25 % - 40 % of cane vinegar and tap water of the remaining percent.