

**STUDY OF THE MOLECULAR MECHANISM OF ABNORMAL
MORPHOLOGICAL GROWTH STATES IN LEGUMES UNDER HIGH
TEMPERATURES**

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ABSTRACT

Rapid population growth in recent years has led to a rapid increase in food consumption. It is crucial to increase the efficiency of food production in response to the increasing demand. Legumes are the leading foods consumed all over the world, and it is imperative to increase their yield. In addition, since legumes are an important source of protein, they are of great importance in solving the nutritional problems of underdeveloped or developing countries. In recent years, the efficiency of food production on a global scale has decreased considerably due to climate changes. Mutations, reflected in some morphologies such as contiguous leaves and contiguous carpels, may occur in plants grown due to climatic factors, mainly due to high temperatures. Such mutations cause severe reductions in the amount of product obtained from plants. Therefore, it is vital to elucidate the genetic mechanism that causes mutations. It is essential for plant breeding to elucidate the mechanisms associated with these mutations. Abnormal developmental conditions such as contiguous leaves and contiguous carpels were observed in bean genotypes produced in the greenhouse in Mersin province in June-August 2020. By obtaining cDNAs from these samples, the expression levels of genes associated with abnormal development were examined, and it was determined that there were serious changes in the levels of genes. The findings obtained are preliminary studies, but it is thought that the findings will be a source in elucidating the molecular mechanisms of morphologically observable mutations that may cause product loss in legume family members under high-temperature conditions.

Keywords: Abnormal development, cDNA, mutation