



Short Communication

Occurrence of Twin Seedlings in Chickpea (Gram)

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Abstract

The present study was carried out to know about abnormal seed germination of *Cicer arietinum* L. During the course of this study, it was noted that the most of the seeds of *Cicer arietinum* L. were showing the normal germination and some seeds were showing abnormal seeds germination. In which more than one seedling were emerging out from single seed. This type of phenomenon is known as Polyembryony.

Keywords: Seed, Germination, Polyembryony, *Cicer arietinum*.

Introduction

Chickpea commonly is generally known as Chana. Its botanical name is *Cicer arietinum* L. Being a legume holding plant, it belongs to family Leguminosae now it is called Fabaceae (Papilionaceae). It is worldwide in distribution. It is a small herbaceous plant with well developed taproot system. Chickpea is very important Rabi crop of Bundelkhand region of India. The seeds contain protein, carbohydrates and fat. The roasted and boiled seeds of Chickpea are very delicious. Germinating seeds of chickpea are taken as breakfast in the morning. The seeds turned into the flour known as Besan is used to prepare the several dishes. It is mostly consumed as Dal and Besan. Pulse (Dal) of gram known as Deol is offered to God Bajrangbali at the time of Jethsudi Purnima¹. Infusion of dried leaves is used as massage in the whole body to relief from sunstroke^{2,3}. The tender leaves and branches of chickpea are very useful as leafy vegetable. It is used as a green fodder for cattles. It is also used as straw for livestock. Main objective of this study is to know about the abnormal seed germination of *Cicer arietinum* L.

Materials and Methods

To obtain the sprouted seeds of chickpea, the matured dry seeds of *Cicer arietinum* L. washed with fresh drinking water and poured them into the water filled pot. Allow these seeds to soak for whole night (12 hours). Now drained out the water and placed them back in the same pot until sprouting. Thus sprouted seeds of chickpea were obtained to take the breakfast in our daily life. During the breakfast it was observed and recorded the behavior of chickpea seed germination.

Results and Discussion

During the course of our breakfast, one day it was observed that the most of the seeds of *Cicer arietinum* L. were normal in germination wherein only one radicle and one plumule emerged out of the seeds. But, a few seeds of *Cicer arietinum* L. were showing abnormal behaviour by the emergence of two radicles and two plumules of seeds as depicted in photographs (Plate-1a-d). Thus, the normal seeds have only one embryo whereas abnormal seed possess two embryos. It seems that in abnormal seed, both radicles and plumules are emerged out from independent zygote embryos. One seedling out of the twins was little smaller in size than the other. After few days the twin seedlings continued to grow and produce healthy seedlings of *Cicer arietinum* L. The similar reports on occurrence of polyembryony or twin seedlings have been presented in several plant species of Angiosperms⁴⁻¹⁸.



Plate-1(a-d): Showing Twin Seedlings in *Cicer arietinum* L.

Conclusion

In the light of above facts it is concluded that the germination of seeds in *Cicer arietinum* L. showing the abnormal behavior wherein two seedlings are emerging out from single seed of chickpea, this phenomenon is known as Polyembryony. That is normally found in the Gymnosperms while occurrence of polyembryony in *Cicer arietinum* L. is very rare and abnormal phenomenon. It seems that the occurrence of polyembryony in *Cicer arietinum* L. may be bi-zygotic or may be due to the cleavage of zygote or formation of adventive embryo, that may be confirm by further researches in this regard.

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