# THE MIRACLE OF PLANT GROWTH PROMOTER

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## Abstract

*The germination, growth and chlorophyll content of Capsicum annuum in different plant media such as cattle waste vermicompost, vermicompost with live earthworms and garden soil as control were studied. The highest germination, growth and chlorophyll content were observed in vermicompost with live earthworm plant medium. Earthworms play a major role on growth of plant then applying vermicompost.*

**Key words:** *Earthworm, Vermicompost, Germination, Chlorophylls.*

## Introduction

Widespread use of chemical pesticides became a necessity for the growth of high-yielding varieties of crops which was highly 'susceptible to pests and diseases'. Continued application of chemical pesticides induced 'biological resistance' in crop pests and diseases and lograthmatically much higher doses are now required to eradicate them. Soil and water pollution due to seepage and drainage especially after heavy rainfall were other ill-effects on farmlands. Studies indicate that there is significant amount of 'residual pesticides' contaminating our food stuff long after they are taken away from farms for human consumption and also reported residues of pesticides in meat, fish, eggs, butter, milk including in mother's milk and human fat (Rao and Narsimha, 1993).

Vermiculture was practiced by traditional and ancient farmers with enormous benefits accruing for them and their farmlands. There is need to revive this 'traditional concept' through modern scientific knowledge-a 'Vermiculture Revolution'. Sir Charles Darwin called the earthworms as 'farmer's friends'. There is great wisdom in this statement of the great visionary scientist who advocated to use the earthworms, the 'nature's gift' in farm production.

## Materials and methods

In order to test the effect of cow dung vermicompost, live earthworms with vermicompost and garden soil as control on germination, growth and chlorophyll of

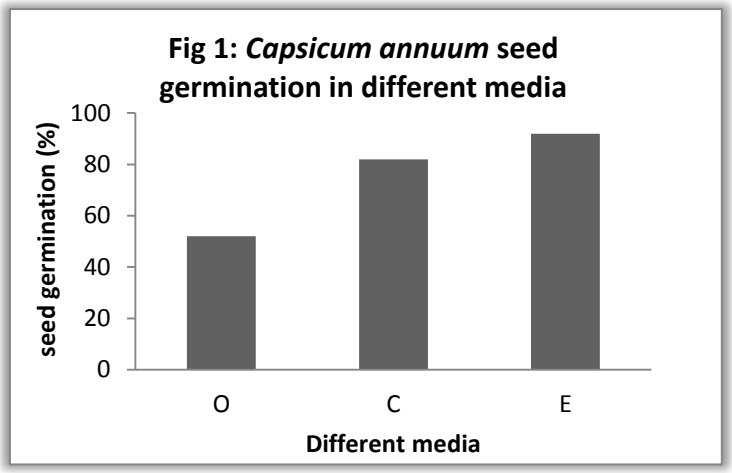
*Capsicum annuum* (Chilli plant).The growth parameters such as root weight stem weight and mass production or leaves weight.

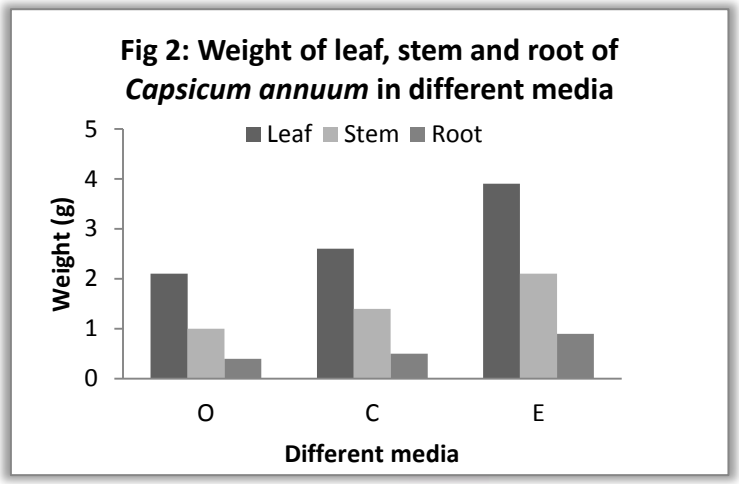
Vermicompost prepared by *Eudrilus eugeniae* with cow dung. Three Plant media were set with three replications. Cow dung vermicompost (C) medium prepared with cow dung vermicompost and garden soil in the ratio of 3:1. Live earthworm medium (E) was prepared with live earthworms cultured in plant medium and garden soil as control (O) was also set with above media

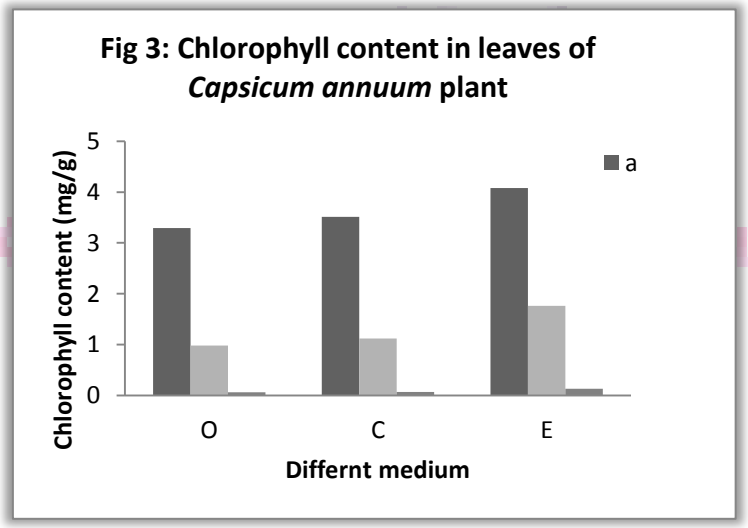
**Results and Discussion**

The germination was found to be 92±1.2%, 82±1% and 72±1.2% in *Capsicum annuum* seed was recorded in E, C and O media respectively (Fig 1). The highest leaf, stem and root weight were observed in the medium of earthworm with vermicompost medium (3.9g, 2.1g and 0.9g) followed by cow dung vermicompost (2.6g, 1.4g and 0.5g). The least weight was observed in control (2.1g, 1.0g and 0.4g) (Fig 2). The maximum content of chlorophyll a, b and c was present in the leaf *grown from earthworm with vermicompost medium and the values are* 4.08mg/g, 1.76mg/g and 0.13mg/g; followed by cow dung vermicompost (3.51mg/g, 1.12mg/g and 0.07mg/g) and in control (3.29mg/g, 0.98mg/g and 0.06mg/g) (Fig 3).

There have been several reports that worm worked waste and their excretory products (vermicast) can induce excellent plant growth (Arancon et al., 2006). It has been found to influence on all yield parameters such as-improved seed germination, enhanced rate of seedling growth, flowering and fruiting of major crops like wheat, paddy, corn, sugarcane, tomato, potato, brinjal, okra, spinach, grape and strawberry as well as of flowering plants like petunias, marigolds, sunflowers, chrysanthemums and poinsettias.




Earthworms when present in soil inevitably work as 'soil conditioner' to improve its physical, chemical and biological properties and also its nutritive value for healthy plant growth. Live earthworm with vermicompost medium is slightly best method comparing of adding only vermicompost. Sinha and Bharmbe (Sinha and

Bharmbe 2007); Chauhan (Chauhan and Krunal 2009) and Valani (Valani and Dalsukh 2009) also reported extraordinarily good growth of potted corn & wheat crops on worm with vermicompost as compared to conventional composts and chemical fertilizers. In live earthworm plant medium, the fresh enzymes, minerals and plant hormones are ready to utilize by plants. So compare then vermicompost, live earthworm with vermicompost are best to quality and quantity of plant growth and productivity.

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