

FULL LENGTH RESEARCH PAPER

Study on Seed Germination and Growth Behavior of Brinjal *Solanum melongena* var. BR 112 in Admiration to Effect of C.M.L. (Country Made Liquor)

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Abstract

An experiment was conducted to study the seed germination and growth behavior of brinjal (*Solanum melongena* L.) with country made liquor under environmental conditions. Seeds of *Solanum melongena* L. var. BR 112, were sown at the depth of 2.5 cm. with different treatments i.e. S1 (Control- Without Country made liquor 36 %V/V), S2 (Soil + 10% solution Spray of Country made liquor at intervals of 03 days Original Concentration 36% V/V). 2000 replicates of each treatment were used for the study. Total numbers of germinated plants were counted from each set of all treatments, at the interval period of 5 days after sowing, and reported as emergence count. For growth study plant height, number of leaves, length and width of leaves and root length were measured from all the treatments.

Result revealed that CML treated batch showed maximum germination% i.e. 700 plantlets from 1000 seeds then control i.e. 500 plantlets. After 20 days of Growth plantlets also showed maximum plant height (7.1 cm.), number of leaves (4.5) length of leaves (2.5 cm.), width of leaves (2.6 cm.) and root length (4.3 cm.) in S2 treatment then control S1 plant height(6.5 cm), number of leaves(3.8), length of leaves(2.0 cm), width of leaves(1.0 cm), root length(4.7 cm).

Key Words: *Solanum melongena* BR 112, Country Made Liquor, Tharra.

Introduction

The **eggplant, aubergine, begun, or brinjal, or baygan** (*Solanum melongena*), is a plant of the family *Solanaceae* (also known as the nightshades) and genus *Solanum*. It bears a fruit of the same name, commonly used as a vegetable in cooking. As a nightshade, it is closely related to the tomato and potato and is native to India. *One of the Sanskrit names of brinjal, vartaku, is considered to be a pre-Sanskrit word, derived from an ancient Indian language spoken by the Mundas or Austrics (one of the oldest inhabitants of India), who now live mostly in the state of Jharkhand.*

In this study BR 112 variety was chosen to see the effect of country made liquor on its productivity. This variety of Brinjal is grown widely in the National.Capital Region of Delhi.

Recently an Article in a leading News Paper(Times of India,Dated: Feb 22,2010) published an unconfirmed report that farmers in and around Gurgaon are using C.M.L to increase the yield of brinjal crop. Farmers of every village growing the crop spray country-made as well as India-made foreign liquor (IMFL) on the soil and they claim that this practice not only results in better shape of the crop but also leads to increased yields. Farmers said that this practice of using alcohol had been going on for the past several years and that it ensured that there were more flowers on a brinjal plant thus boosting production.

"We sprinkle alcohol in the soil right from the time we sow the seeds. In the last few years, it was observed that the brinjal crop yield had increased manifold".

This study is focused on this aspect and to verify the effects of CML on seed germination and growth behavior of *Solanum melongena* BR 112 variety.

This variety is largely grown in the National Capital Region of India and well adapted to the environmental conditions of this region.

MATERIAL AND METHODS:

The present study was carried out with the objective to evaluate the effect of Country made Liquor on seed germination, growth of Brinjal cultivar BR 112. Following treatments were used for the study:

Control (Only Soil): S1

Soil + Spray 10 % solution of Country made Liquor (Original Concentration 36 % V/V) at intervals of 03 days: S2

1000 replicates for each treatment were used for the study. Some important descriptions of the layout are given below:

Total number of seeds used in the experiment: 2000

Number of plants used for each treatment: 1000

Country made liquor used in S2 treatment: 36 % v/v

The country made Liquor was sprayed before sowing of seed in S 2 treatment as well after every 03 days of interval. There was no use of country made Liquor in S 1 treatment. Total numbers of germinated plants were counted from all treatments at interval period of 5 days after sowing and reported as emergence count. Plant growths were observed with different parameters i.e. plant height, number of leaves, length and width of leaves and root length. Ten normal seedlings were randomly taken at the end of the germination count for the study of plant height (shoot length), length and width of leaves were measured in cm. The no. of leaves was counted after 20 days of germination. Three plants of each treatment were randomly selected to measure the root length, which were already used to measure the other growth parameter, and the mean values were arrived at different growth stages.

- Country Made Liquor (CML) **Tharra** is locally brewed alcoholic drink, or moonshine; from yeast fermentation of sugarcane, or wheat husk; in regions of northern India , especially Bihar, Uttar Pradesh, Punjab , Nasik (Maharashtra) and Haryana. Due to the pungent smell of the distilling process, **Tharra** is often prepared in remote fields, away from human settlements. It recycles some of the waste products of agricultural economy of the region. It is often consumed by poor or landless tillers as well as migrant laborers. It is typically distilled with connivance of officials and police officers, generating huge profit margins.

RESULT:

Germination Study: The germination was influenced by different treatments. Result shows that the maximum number of seedling emergence was in S2 treatment, which contains CML, in contrast to followed by S1 (Table-1).

Growth Study:

Plant height: Maximum plant height was recorded in S2 treatment, at 20 days after sowing which are higher than S1.

Number of leaves per plant: Number of leaves was recorded higher in S2 treatment in contrast to S1. (At 27 days after sowing).

Length & Width of leaves per plant: The leaf length and width were recorded up to 27 days after sowing of seeds in all the treatments. The length and width of green active leaves in S2 treatment is much higher than S1.

Root length: Three plants of each treatment were randomly selected to measure the root length, which were already used for other growth parameter. The root length in S2 treatment was recorded higher than all other treatments i.e. S1.

DISCUSSION:

The result of this investigation shows that the effect of the CML has been very much pronounced. The number of germinated seeds are 20% more in CML treated soil, plant height, Number of leaves, leaf width is also more in CML treated soil.

Day by day the use of CML has increased rapidly, in all Brinjal growing fields of National Capital Region of Delhi, India. Farmers are using CML in more quantity to increase the yield and economy, now the use of these is 6 to 8 times more than the time was first reported and growing with every passing season of Brinjal. The use of the CML, affect the soil as well as the crop characteristics and the product from the crop is also influenced. How CML influences the soil, seed germination and growth of the Brinjal plant is a matter of extensive research.

The main advantage of CML is that it doesn't pollute the soil and not give any negative effect to environment because of its biodegradable nature.

Also the effect of CML on other crops can be studied. Because of the use of CML is very cost effective.

The farmers reported that "Though the cost of production has increased a little, the high yield makes up for it." as far as Brinjal is concerned.

Table: 1 Effect of different treatments on germination:

| Treatments | Germination counts (%) | | | | TOTAL |
|------------|------------------------|-----------|------------|------------|-------|
| | 1-5 DAYS | 5-10 DAYS | 10-15 DAYS | 15-20 DAYS | |
| S1 | 0 | 200 | 100 | 200 | 500 |
| S2 | 0 | 200 | 300 | 200 | 700 |

Table: 2 Effect of different treatment on Seedling growth:

| S.N | Treatment | Plant height | No. of leaves | Length of leaves | Width of leaves | Root length |
|-----|-----------|--------------|---------------|------------------|-----------------|-------------|
| 1. | S1 | 6.0 ±0.5 | 3.0 ±0.8 | 1.53 ±0.5 | 0.9 ±0.1 | 4.05 ±0.7 |
| 2. | S2 | 7.0 ±1.0 | 4.0 ±0.5 | 2.0 ±0.5 | 2.0 ±0.6 | 4,0 ±0.3 |

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