

# Physical Purity Analysis and Germination of *Salvia sclarea* L. a Medicinal Plant

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**Abstract:** *Salvia sclarea* L. belongs to family Lamiaceae, commonly used for medicinal purposes. Clary sage has been used in treatment of cancer. The present investigation was conducted with an objective to assess the real value of the seed lot and effect of temperature in germination. The seeds were collected from Tehri Garhwal region of Uttarakhand in 2008. Seed sample was divided into four replicates. Seed quality was evaluated by physical purity, standard germination, seed vigour test and pure live seed. Experimental results has shown that, seed sample recorded the purity of seed (93.20 %) and seed sample showed the maximum germination percentage 42% at 25<sup>0</sup>C temperature followed by 40% at room temperature (30<sup>0</sup>-35<sup>0</sup>C). The results indicates that the *Salvia sclarea* show better response in low temperature. [Nature and Science. 2010;8(1):68-69]. (ISSN: 1545-0740).

**Keywords:** *Salvia sclarea*, Germination, Purity, Vigour

## 1. Introduction

*Salvia sclarea* L. belongs to Lamiaceae family, have 900 species around the world. *Salvia sclarea* is a biennial very easy to cultivate, triangular to egg-shaped leaves with leaf stems. The entire plant is hairy and has a strong odor due to an essential oil (Tutin et al. 1972; Bianchini and Corbetta 1975). *Salvia sclarea* is easy to grow from seeds. Cold periods may improve germination.

## 2. Material and Methods:

The investigation was conducted at the Seed Testing Laboratory of Division of Seed Science and Technology, Indian Agricultural Research Institute, New Delhi.

The seed lot of *Salvia sclarea* L. was collected from Tehri Garhwal region of Uttarakhand in 2008. Seed lot divided into four replicates. The work consists of purity test, standard germination test, seed vigour test and pure live seed.

Purity analysis is sorted out three components; inert matter, other seed and pure seed. The three components were weighed by using the electronic balance having the accuracy of ±0.001g and expressed in percentage. Standard germination test was conducted on a 100 seeds per replicate at 25<sup>0</sup>C for 5 days in germinator and Room temperature (30<sup>0</sup>-35<sup>0</sup>C) for 5 days using filter paper as a substratum. Pure live seed (PLS) percentage represents the amount of pure seeds in a seed lot that are capable in producing seedlings. It is calculated by using the formula:

$$PLS = \frac{\text{Germination \%} \times \text{Purity \%}}{100}$$

Seedling length was taken after the completion of germination period (5 days) in randomly selected 10 seedlings from each replication. The dry weight of the 10 randomly selected seedlings for each replicate was measured after it was dried on oven at 80<sup>0</sup>C for 18 hrs.

## 3. Result and Discussion:

As quality is considered superior, if pure seed percentage is above and other seed and inert matter percentage as low as possible. Germination test are based on pure seed component, this has been shown by observations recorded and that purity analysis and germination tests compliments each other. Thus the actual planting value of seed lot can determined only when the purity analysis and germination tests are consider together. Vigour test has been used as complimentary information to the germination test.

Table 1: Mean value of physical purity analysis of the *Salvia sclarea* L. seed lot.

IM (gm)	OS (gm)	PS (gm)	P%
0.55	6.25	93.20	93.20

Acronym used: IM= Inert matter, OS = Other seed, PS= Pure seed, P= Purity

Table 2: Mean value of analysis by different tests methods of *Salvia sclarea* L. seed germination, root length, shoot length and seedling dry weight. In the table seed lot recorded maximum germination in 25°C temperature

T	G%	DTG	RL (cm)	SL (cm)	SDW (gm)
25°C	42	5	3.06	1.28	0.0101
RT	40	5	2.29	1.06	0.0098

Acronym used: T= Temperature, G= Germination, DTG = Days taken to germination, RL= Root length, RT= Room temperature, SL= Shoot length, SDW= Seedling dry weight.

Recorded experimental finding (Table1) showed that the purity percentage of the seed lot is 93.20% and (Table 2) showed that the germination percentage, root length, shoot length and seedling dry weight was observed maximum in low temperature.

Thus, from the discussion it may be concluded that the seed lot of *Salvia sclarea* L. showed good response at low temperature (25°C) followed by room temperature. The PLS value depend on both germination and purity analysis.

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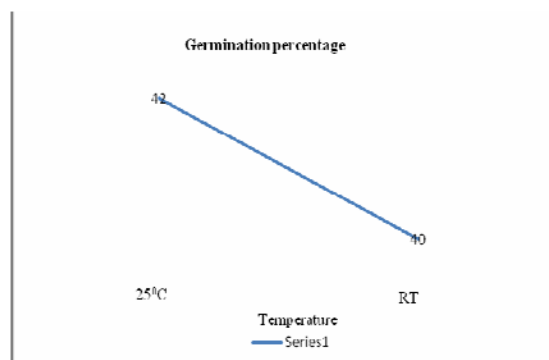


Fig.1.Graphical representation of *Salvia sclarea* seed germination

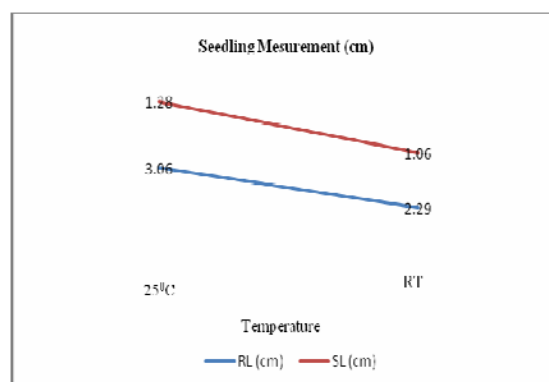


Fig.2.Seedling measurement of *Salvia sclarea*

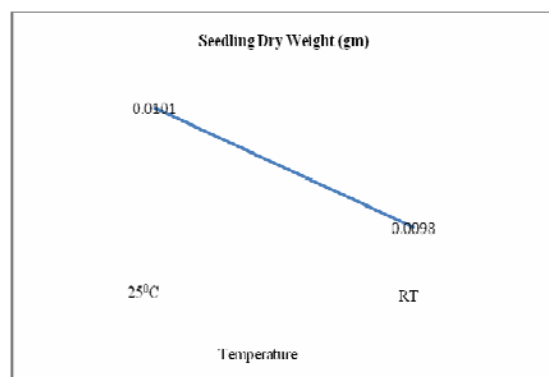


Fig.3. Graphical representation of *Salvia sclarea* seedling dry weight