

Comparative study of Alliin containing different Varieties of Garlics (*Allium sativum* L.)

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Abstract- There are numerous herbs growing in India, some are cultivated and others are growing wild, among these herbs is well known name Garlic (*Allium sativum* L.) which is cultivated and consumed almost across the globe. People use Garlic as a spice / pickles.

Garlic contains medicinally active compounds like Alliin/Allicin, Di-allyl Disulfide, 2-vinyl-4H-1, 3-dithiin, Ajoene.

Alliin /Allicin is cholesterol lowering and antihypertensive (Ref. see Sukhdev, 1997, Sculz et al, 1998 and Hung, 1999).

Alliin is an amino acid, in presence of enzyme Alliinase, Alliin converted into Allicin and it has produce characteristic smell of garlic.

Various samples of Garlic (varieties) collected from various locations (Climatic Condition) and Alliin estimated.

Index Terms- Garlic (*Allium sativum* L.) Alliin, Allicin

I. INTRODUCTION

The Garlic (*Allium sativum* L.) is an erect herb of Alliaceae family, 30 to 60 cm tall bulb is on disc like stem, consisting of multiple cloves covered with common dry membrane. Each clove consists of a protective cylindrical sheath and small central bud. Leaf blade is linear, flat, and solid, 1 to 2.5 cm wide and 30 to 60 cm long, having an acute apex. Leaf sheaths form a pseudo stem, having smooth scup, round solid coiled at first, subtended by membranous, long beaked spathe splitting on one side and remaining attached to umbel. Flower mostly variable in number and some time absent: they seldom open and may wither in bud. Seeds are seldom – if ever produced. Herbal medicine is most ancient form of healthcare especially in India and china, where people known to use plants in systematic healthcare since long ago. Herbal medicine is safe, cheaper, and effective source of drug than allopathic medicine, as no side effects are generally observed. Global scenario is changing for herbal drugs; hence herbal medicine has been virtually **rediscovered** in recent years. The renewed interest in herbal drug is likely to continue the global south because of increasing population and better affordability, and in the north because of paradigm shift in attitude towards “ Alternative or complementary” medicine. Fresh market demands have not only brought in newer opportunities for herbal drug manufacturing Industry, but are also posing threats to the Phyto-resources, especially in the developing economics. Together with it the ancient knowledge system of traditional practitioners need to be protected. (Ref. Herbal medicinal plants).

There is therefore strong and urgent need to alter route for production of Medicinal compound i.e. Alliin/Allicin produced in the important endogenous medicinal plants.

The purpose of identification of high Alliin/Allicin producing varieties of garlic – various varieties of Garlic samples collected from several locations like local Subzi Mandies and others government authorized seeds shops. Alliin Estimated and Planted in same agro-climatic condition for further study.

II. MATERIAL AND METHODS

A. Collection of different Varieties of Garlic (*Allium sativum* L.)

Different varieties of Garlic were collected from different regions of the country along the states of Haryana, Himachal Pradesh and Uttarakhand.

B. Estimation and Quantification of Alliin-

The active secondary metabolite (Alliin/Allicin) was estimated and Quantified chemically by using nitrite titration method. Reference: USP 29 <451> Nitrite Titration and analytical results summarized in Table -1.

C. Cultivation of Garlic in pots/field conditions

The viable seeds of selected Variety were cultivated in small pots /field and various treatments were given in random block design within similar agro-climatic condition and treatment for all block varieties for further study.

III. RESULTS

Thus different varieties of *Allium sativum* L. (Garlic) were collected from different climatic conditions and were cultivated in different pots. Alliin from different varieties was quantified.

Table 1: Content of Alliin in different varieties of Garlic

Variety	Content of Alliin (%)
Agrifood-I (Seed shop Pinjore)	0.24
Sabji Mandi Kalka	0.096
Yamuna Hard Neck sabji mandi Pinjore	0.055
Kumaoni Garlic(Nainital)	0.085
Agrifood Parvati sabji mandi Kalka	0.046
Elephant Garlic sabji mandi Kalka	0.14
Pahari White Hard neck Sabji mandi Pinjore.	0.053

IV. DISCUSSION

Content of Alliin varies in different varieties of Garlic in which have collected from different agro- climatic conditions. Highest Alliin content was found in Agrifood-I Garlic and the minimum Alliin containing garlic is Agrifood Parvati Garlic.

V. CONCLUSION

From the obtained results we can conclude that Content of Alliin varies in different varieties of Garlic grown in different climatic conditions.

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