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Harvesting period management for production of quality roots of Ashwagandha (*Withania somnifera*.Dunal)

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ABSTRACT

A field experiment to study the effect of time of harvest on root yield and quality of Ashwagandha (*Withania somnifera* Dunal) was conducted at Nagarjun Medicinal Plants Garden, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (Maharashtra) during 2003-04. The treatments were comprised of five harvesting time viz., T₁-At flowering initiation, T₂- 50% flowering, T₃-100 % flowering, T₄-Berry ripening and T₅ -At maturity tried in Randomized Block Design with four replications. Significantly highest root yield was recorded with the harvesting at 100% flowering stage over all the treatments except berry ripening stage. The crude fibre content was also found to increase with the harvesting time and the highest fibre content was recorded at maturity stage. The total alkaloids content was significantly highest at 50% flowering stage followed by 100% flowering stage. The graded root yield was also influenced by harvesting time and significantly highest root yield of A grade was obtained at 100% flowering stage.

Key words : *Withania somnifera*, Root grading, Root quality

INTRODUCTION

Ashwagandha or Asgandh (*Withania somnifera* Dunal) is the member of nightshade family *i.e.* Solanaceae. It is an erect, herbaceous, evergreen, tomentose shrub with 13 to 50 cm height. The crop is being commercially cultivated on an area of around 10,000 ha in India mostly in Madhya Pradesh. Traditionally as a medicine Ashwagandha has been used in many ways, as a sedative, diuretic, a rejuvenating tonic. Ashwagandha roots are also used for a wide range of ailments including arthritic inflammation, insomnia, cough, nervous disorders, gynecological disorders, especially functional female and male fertility and impotence.

Ashwagandha has assumed great importance now a day due to its good domestic market value and potential. In market the roots are being sold in four grades on the basis of root quality. Roots with pencil thickness are the good quality roots, fetches fair prices in the market. The research work on the stages of harvesting and its effect of root quality is very meagre. Due to its constant demand, good market price and important medicinal value, area under Ashwagandha is increasing day by day.

The time of planting and harvesting of medicinal and aromatic plants are most crucial and important factors for

synthesis of secondary metabolites *i.e.* alkaloids. Besides that it is necessary to process a crude drug so as to preserve it for a longer time with quality and also to acquire better pharmaceutical elegance and therefore, to determine the stage of harvesting for maximum good quality root yield of Ashwagandha roots, the present investigations was undertaken.

MATERIALS AND METHODS

A field experiment to study the effect of time of harvest on root yield and quality of Ashwagandha (*Withania somnifera* Dunal) was conducted at Nagarjun Medicinal Plants Garden, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (Maharashtra) during 2003-04. The treatments were comprised of five harvesting time viz., T₁-At flowering initiation, T₂- 50% flowering, T₃-100 % flowering, T₄-Berry ripening and T₅ -At maturity tried in Randomized Block Design with four replications.

The harvesting of Ashwagandha for roots is usually done after 140-160days of sowing. The maturity of the crop was judged by drying of the leaves and turning of entire berries to red colour. In the present study the harvesting was done as per the treatments. The dried roots were beaten with a club to remove the adhering soil and

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