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**Abstract:** The present experiment entitled “Evaluation of Wild and Cultivated germplasm of *Withania somnifera* (L.) Dunal (Ashwagandha)” was conducted during the year 2011 at nursery site of the Faculty of Forestry, Birsa Agricultural University, Kanke, Ranchi to carry out systematic research trial on wild and cultivated trial of the species with the objectives a) To evaluate the comparative growth pattern of wild and cultivated germ plasm of Ashwagandha (*Withania somnifera*). b) To evaluate comparative yield potential of wild and cultivated germplasm of Ashwagandha (*Withania somnifera*) and c) To evaluate the comparative alkaloid content of wild and cultivated germplasm of Ashwagandha (*Withania somnifera*). In the present study, the wild and cultivated germplasm of *Withania somnifera* (L.) Dunal (Ashwagandha) are taken for experiment. The wild germplasm collected from Khunti forest area and the cultivated germplasm are JA-20, JA-134, Poshita. The experiment was conducted in Randomized Block Design (RBD) to know the growth and yield parameters of different germplasm of the Ashwagandha. The experiment was replicated five (5) times. The total numbers of treatments were four (4). The total area of the plot was 4m X 3m and number of plant in each plot was 100. Number of plants to be used for collection of data from each plot was ten (randomly). The growth parameters of Ashwagandha like Plant height (cm), Number of main branches, Number of berries per plant, Leaf length (cm), Days to flower initiation (days), Days to seed harvest (days), and the yield parameters like Number of seeds per berry, Seed yield per plant (gm) are recorded as per NBPGR format. The yield parameters of Ashwagandha like Main root length (cm), Main root diameter (cm), Number of secondary roots per plant, Fresh root weight per plant (gm), Dry root weight per plant (gm) were taken on final harvesting. The alkaloid content (%) and Fiber content (%) in root are estimated through HPLC method in the laboratory. Average value of pH, organic carbon, available nitrogen, phosphorus, and potassium of the soil of research area was estimated before plantation of Ashwagandha. The recorded value of different chemical parameters of soil are as follows pH (6.80), organic carbon (0.78), available nitrogen (345.25 kg/ha), available phosphorus (120.50 kg/ha) and available potash (252.60 kg/ha). The soil of the sites is sandy loam having water holding capacity (%) as 40.50 and moisture content (%) as 10.82. Maximum plant height among the germplasm was found in Poshita i.e. 98.00 cm whereas minimum height obtained in wild variety i.e. 68.40 cm. Number of primary branches at full bloom stage varied from 4.00 to 5.00. Increasing order of the number of main branches is as follows: T1<T2<T3<T4. Maximum number of berries per plant among the germplasm was found in Poshita i.e. 137.40 whereas minimum number of berries per plant obtained in wild variety i.e. 104.00. Maximum days to flower initiation and days to seed harvest among the germplasm was found in Poshita. Maximum number of seeds per berry among the germplasm was found in JA-134 i.e. 37.80 whereas the minimum number of seeds per berry obtained in wild germplasm was 34.80. Maximum main root diameter (mm) among the germplasm was found in Poshita i.e. 21.26 mm whereas minimum main root diameter (mm) obtained in wild variety i.e. 13.00 mm. Number of secondary root per plant at harvesting stage varied from 2.04 to 5.32. Maximum fresh root weight per plant (gm) among the germplasm was found in Poshita i.e. 38.84 gm whereas minimum fresh root weight per plant (gm) obtained in wild germplasm i.e. 20.80 gm. Dry root weight per plant (gm) at harvesting stage varied from 6.84 gm to 12.88 gm. Out of four germplasm of Ashwagandha, maximum dry root weight per plant (gm) was found in Poshita i.e. 12.88 gm whereas minimum dry root weight per plant (gm) obtained in wild germplasm was 6.84 gm. Seed yield per plant (gm) varied from 6.90 to 11.76. Increasing order of the seed yield per plant (gm) is as follows: T1<T2<T3<T4. The alkaloid content (%) in root varied from 0.20 % to 0.35 %. Maximum alkaloid content (%) in root among the germplasm was found in JA- 134 whereas minimum alkaloid content (%) in root obtained in wild germplasm. The fiber content (%) in root varied from 18.76 % to 32.04 %. Maximum fiber content (%) in root among the germplasm was found in JA-134 whereas minimum fiber content (%) in root obtained in wild germplasm. It is concluded that for the production of root and seed, Poshita variety may be adopted for commercial cultivation under the edapho-climatic conditions of Jharkhand. However from the active principles point of view, JA- 134 variety may be adopted, because its recorded value was found significantly superior than other variety.

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