

Growth of *Salix gracilistyla* Miq. Originated from Provenance in Gangwon-do, Korea for Bioenergy Resource

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Salix gracilistyla has a characteristic of fast growth especially in the river side or infertile soil, showing a lot of lateral branches and a strong root system among the *Salix* spp. On the basis of results observed, we provide several growth characteristics of *S. gracilistyla* among some selected provenances. In two-year results, root collar diameter ranged from 33.5 mm to 56.7 mm. Taebak showed the lowest value, and Jeongseon and Hoengseong were higher than the other areas in the traits above. Height growth was the lowest in Samcheok and the highest in Wonju. To examine growth and development of lateral branches is important because *S. gracilistyla* has a lot of lateral branches which account for high biomass production. Length of lateral branch showed high variation, in which the highest number was observed in Yeongwol and the lowest in Samcheok. Many lateral branches were shown in Wonju.

Preliminary study on biomass resources evaluation, we analyzed correlation between volume and length, and volume and root diameter. High correlation was observed between root diameter and plant volume. And we compared the observed volume with the calculated volume by regression formula. To evaluate *Salix* species as biomass resources, it is needed to survey growth characteristics continuously and adopt selection of individuals or families of high biomass and caloric values by reliable data. In addition, *Salix* spp. can be also applicable to selection breeding regime because of feasible propagation and fast growth.

Key words: Selective breeding, Biomass resources, *Salix gracilistyla*, Provenance test