

A new *Atractylodes* spp. hybrid cultivar ‘Manchul’ with high yielding and disease tolerance

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Abstract

Atractylodes japonica and *Atractylodes macrocephala* belongs to *Atractylodes* genus and their roots are used as ‘Baek-chul’(White *Atractylodes* rhizome) in Korea Pharmacopoeia. ‘Baek-chul’ widely used in traditional herbal remedies in Asia. Concurrently, the ‘Baek-chul’ demand enormously increased in the market due to the growing interest in favoring health benefits but it is depend on import from China. Thus we conducted breeding research to solve the problems associated with domestically cultivated ‘Baek-chul’ such as low productivity and low disease tolerance. We crossed *A. japonica* (female parent) and *A. macrocephala* (male parent) in the greenhouse in September 2000. the next season 119 crossed line seeds were collected and germinated in the green house. Among them we selected the good lines in the same season. then conducted replicated yield trials (RYT) in 2014 to local adaptability test (LAT) in 2015-2016. The results showed that the ‘AJM16’ line has beneficial characters like, increased plant height, large rhizome diameter, narrow leaf width compared with a ‘Sang-chul’ (check cultivar) and varied flower color from *A. japonica* (female parent). The line ‘AJM16’ was also exhibited decreased anthracnose symptoms(*Colletotrichum gloeosporides* Penz.). Simultaneously the root yield of AJM16 was 2,409 kg per are, which was increased 130% higher yield compared to ‘Sang-chul’ (check cultivar) at three various regions from 2015 to 2016. Therefore, we named AJM16 as new cultivar ‘Man-chul’. According the results, we have developed a new *Atractylodes* spp. hybrid cultivar ‘Man-chul’ with high yielding and disease tolerance by National Institute of Horticulture and Herbal Science, RDA, in 2016.

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