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## **Study on Bioactive Property of a Naked Oat Cultivar, Daeyang (*Avena sativa* L.), Which is Enhanced by Spring Seeding**

Dea-Wook Kim<sup>1\*</sup>, Yu Young Lee<sup>2</sup>, Hyeonsoo Jang<sup>1</sup>, Yun-Ho Lee<sup>1</sup>, Jong Tag Youn<sup>1</sup>, Hee Woo Lee<sup>1</sup>, Hak Yong Lee<sup>3</sup>, Young Mi Park<sup>3</sup>

<sup>1</sup>Crop Production & Physiology Div., NICS, Wanju, Jeonbuk 55365, Republic of Korea

<sup>2</sup>Dep. of Central Area Crop Science, NICS, Suwon, Gyeonggi 16613, Republic of Korea

<sup>3</sup>Invivo Co. Ltd., 121 Deahak-ro, Nonsan, Chungnam 32992, Republic of Korea

### **[Abstract]**

This study was aimed to investigate the content of avenanthramides(AVNs) and other phenolic compounds in the grains of a naked oat cultivar, Daeyang, which were seeded in the fall and spring, and examine the effects of alcohol extracts from the grains on natural killer(NK) cell activity in vitro. The content of AVN-A, AVN-B, and AVN-C in the spring-seeded oat grains was 2.2 folds higher than the fall-seeded oat grains on average. Among these AVNs, the content of AVN-C was 1.9-folds higher in the spring-seeded oat grains(66.1 $\mu$ g/g), comparing to the content in the fall-seeded oat grains(34.8 $\mu$ g/g). The content of other phenolic compounds, such as phenolic acids and flavonoids in the spring-seeded oat grains was 1.1 ~4.7-folds higher than the fall-seeded oat grains. In particular, sinapinic acid was the most abundant phenolic acid in the spring-seeded oat grains(50.0 $\mu$ g/g) and its content was 2.4-folds higher than its content in the fall-seed oat grains. Furthermore, NK cell activity in vitro treated with the spring-seeded oat grain extracts was 158%, and it was 18%p higher than NK cell activity treated with the extracts from the fall-seeded oat grain extracts. Our finding suggest that the bioactive properties of naked oat grains would be enhanced by spring seeding.

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\*Corresponding author: E-mail, dwkim08@korea.kr Tel, +82-63-238-5274