

**PC-9**

## Changes in $\beta$ -glucan Content of Oats according to Cultivars, Grain Filling Stage, and germination Conditions

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### [Introduction]

Consumption of oat-based food is rapidly increasing due to consumer preference for functional foods.  $\beta$ -glucan is a soluble fiber that lowers the blood lipid concentration, the occurrence of cardiovascular disease and reducing the severity of stress ulcers and allergic reactions. This study examined the  $\beta$ -glucan contents according cultivars, grain filling stage, germination conditions.

### [Materials and Methods]

The oat 4 cultivars (Daeyang, DY; Choyang, CY; Jopung, JP; Highspeed) used in the experiment were grown in the Suwon test field in 2014, 2016, and 2018, and the  $\beta$ -glucan content was analyzed using the  $\beta$ -glucan kit (K-BGLU, Megazyme, Ireland).

### [Results and Discussion]

Total  $\beta$ -Glucan contents ranged from 3.4 to 4.1 g/100 g in oat flours. The DY (4.10 g/100 g, naked) and JP (4.09 g/100 g, hulled) showed high levels of  $\beta$ -Glucan contents.  $\beta$ -Glucan content by grain filling stage (25-40 days after heading stage) were 2.7 g/100 g on the 25 days and then peaked at 40 days (4.59 g/100 g). During storage period after harvesting,  $\beta$ -glucan content of DY did not change until 63 days of storage; However, that of CY and JP increase slightly.  $\beta$ -glucan content of the seeds according to the germination time in the water spray treatment device (at 21°C) was the highest at 4.41~4.78 g/100 g when germinated for 24 hours. When the germination continued under different temperature conditions,  $\beta$ -glucan content was highest at 15°C (sprouts, 2.41±0.12 g/100 g; roots, 1.40±0.05 g/100 g, and seeds 1.24±0.06 g/100 g). Findings of the study will provide useful information in extending the use of oats for fiber-based food.

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