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## Evaluation of the Growth and Yield of Oat According to Differences in Bird Netting Coverings

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### [Introduction]

Oats are a crop with the lowest cold resistance among winter cereal. Vinyl mulching may be used to overcome damage during wintering, but vinyl is difficult to recycle and causes environmental pollution when discarded. On the other hand, using a bird netting for the warming is easy to recycle. Therefore, we evaluated the growth and yield characteristics according to the difference in bird netting covering treatment.

### [Materials and Methods]

Oats were sown in the late fall 2021 at upland field by drill seeding in Wanju region and overwintered after microfiber bird netting (PE) treatment (0, 1, 2 layers) for two varieties of naked oat cultivars 'Joyang' and 'Daeyang', respectively. Sowing amount was 19kg per 10a and standard fertilizer level was 7.2 kg(N-P-K=15-14-6) per 10a. After wintering, we investigated the growth and yield characteristics of naked oats.

### [Results and Discussion]

In both cultivars, the plant height, number of leaves increased and ratio of dead leaf decreased after winter when treated with bird netting compared to those without bird netting. In particular, the ratio of dead leaf decreased significantly as the number of bird netting increased. Significant increases were observed in culm length, spike length, number of grains per spike, and number of spikes per m<sup>2</sup> in 'Joyang' according to the treatment of bird netting, however, there was generally no significant difference in 'Daeyang'. Both the heading and maturing date showed a tendency to become faster in both varieties according to the treatment of the bird netting. There was no difference in Liter weight and Thousand grain weight between the non-net and the bird netting in both varieties. The yield was found to be more than 300kg per 10a in the treatment of the bird netting, however, there was no statistical significance in 'Joyang' and a significant increase in yield was observed in 'Daeyang'. It is thought that 'Daeyang' has stronger cold resistance than 'Joyang' and has a synergistic effect due to the warming effect of the bird netting. To summarize the results, the treatment of bird netting before wintering is more beneficial to growth after winter than in the case of no nets, it can lower the ratio of dead leaf, and it will help increase the yield.

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