# P.13 벼 箱子育苗에서 부직포 種類가 苗素質에 미치는 影響

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## Effect of Thickness of Polypropylene Spunbonded Fabrics(PSF) on Growth Characteristics of Rice Seedling

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### Objective

In order to the elucidate the effect of labor and cost saving on new nursing method of rice seedling using polypropylene spunbonded fabric(PSF) and determine the optimum thickness of PSF to raise the healthy seedlings

### Materials and methods

- Cultivar : Namgangbyeo, Georubyeo
- Sowing dates : April 20 & April 30 for single cropping, June 1 for double cropping
- *Thickness of PSF* : *40, 60, 80, 100 g/㎡*
- Nursery period : 30 days for single cropping , 20 days for double cropping

### Results

○ Mean, maximum and minimum temperature in PSF covering during 20 DAS on April 20 and April 30 were 0.7~2.3℃, 1.3~8.1℃, and 0.9~2.4℃ lower than those in PE film covering nursery, respectively.

○ Plant height of 20- and 30- day old seedlings was slightly taller as the increase of PSF thickness from 40 g/㎡ to 100 g/㎡, but number of leaves and shoot dry-weight of the seedlings was reduced.

○ Root solidity of seedlings grown in lighter PSF (40~60g/㎡) covering nursery was more favorable than that in relatively heavier PSF(80~100g/㎡).

○ The optimum thickness of PSF for the raising of healthy seedlings was 40~60 g/㎡ PSF at sowing on April 20 and April 30 for single cropping, and 40g/㎡ PSF on June for double cropping based on the growth characteristics of seedlings investigated at seedling nursery covered with different thickness of PSF

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**Table 1. Seedling growth in different covering materials and sowing date**

| Sowing date | Covering materials | Plant height (cm) | | | Number of leaves (No.) | | | Dry weiget (mg/seedling) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 10DAS | 20DAS | 30DAS | 10DAS | 20DAS | 30DAS | 10DAS | 20DAS | 30DAS |
| April 20 | PSF 40g/m² | 7.3 | 14.1 | 18.6 | 1.7 | 2.6 | 3.7 | 6.2 | 9.4 | 19.3 |
| | PSF 60g/m² | 7.3 | 14.5 | 19.1 | 1.7 | 2.6 | 3.3 | 6.2 | 9.4 | 17.2 |
| | PSF 40g/m² | 7.2 | 14.6 | 19.4 | 1.7 | 2.4 | 3.1 | 6.3 | 9.2 | 17.0 |
| | PSF100g/m² | 7.2 | 14.6 | 20.5 | 1.7 | 2.2 | 3.3 | 6.2 | 9.0 | 16.8 |
| | PEF0.03mm | 8.6 | 13.2 | 18.8 | 2.4 | 3.1 | 4.1 | 6.8 | 11.7 | 20.2 |
| April 30 | PSF 40g/m² | 7.5 | 14.4 | 19.3 | 1.8 | 2.7 | 3.8 | 7.1 | 9.7 | 19.0 |
| | PSF 60g/m² | 7.5 | 14.7 | 21.6 | 1.8 | 2.7 | 3.6 | 7.1 | 9.6 | 18.5 |
| | PSF 80g/m² | 7.0 | 14.8 | 21.8 | 1.8 | 2.5 | 3.5 | 7.1 | 9.3 | 16.3 |
| | PSF 100g/m² | 7.0 | 14.8 | 22.6 | 1.8 | 2.1 | 3.5 | 7.1 | 9.1 | 16.3 |
| | PEF 0.03mm | 9.0 | 13.6 | 18.0 | 2.5 | 3.1 | 3.9 | 7.5 | 11.9 | 20.7 |
| June 1 | PSF 40g/m² | 11.9 | 18.9 | - | 2.2 | 3.1 | - | 7.8 | 11.3 | - |
| | PSF 60g/m² | 11.8 | 19.1 | - | 2.2 | 2.9 | - | 7.6 | 11.2 | - |
| | PSF 80g/m² | 11.8 | 20.2 | - | 2.1 | 2.9 | - | 7.5 | 11.0 | - |
| | PSF 100g/m² | 11.8 | 20.5 | - | 2.1 | 2.8 | - | 7.5 | 11.0 | - |
| | PEF 0.03mm | 11.9 | 18.8 | - | 2.1 | 3.1 | - | 7.8 | 12.5 | - |

※ PSF : Polypropylene spunbonded fabric
※※ PEF : Polyethylene film

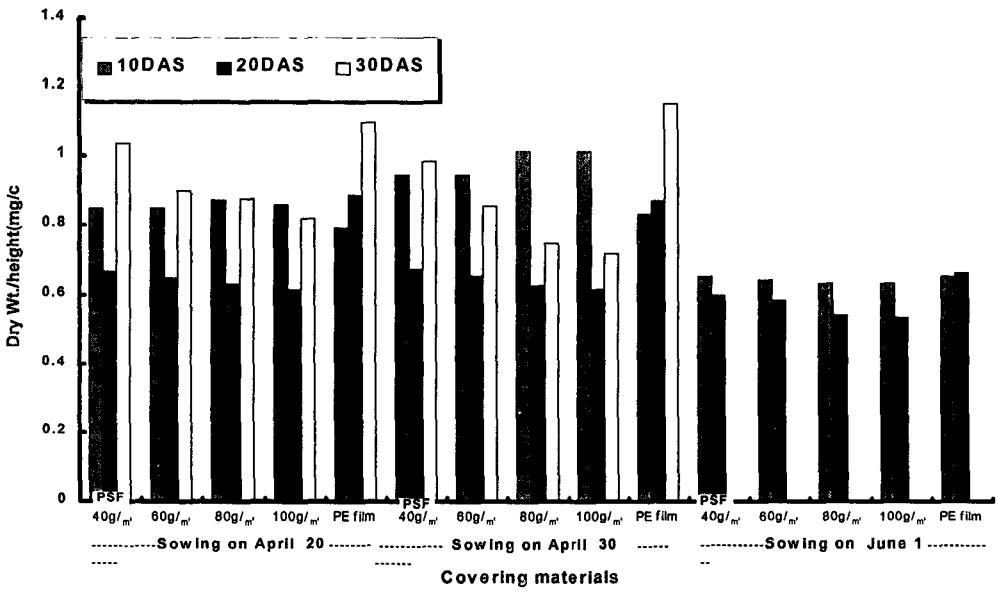


Fig. 2. Comparison of dry weight / height ratio at different covering materials according to sowing date.
※ PSF : Polypropylene spunbonded fabric
※※ PE film : Polyethylene film