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**Journal of Weed Science and Technology**

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[\[PDF \(583K\)\]](#) [\[References\]](#)**Weed Management Issues and Dynamics During Establishment of Phlox (*Phlox subulata* L.) Ground Cover Using Geotextile Mulch**Tatsuichiro Kaku<sup>1)2)</sup>, Misako Ito<sup>1)3)</sup> and Kanji Ito<sup>4)</sup>

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**Summary:**

Geotextile mulch has become popular recently in the installation of landscape ground cover, because it provides both suppression of weeds and maintenance of soil conditions desirable for cover-plant growth. However, competition caused by weeds emerged from the planting holes is one of the most serious problems related to this method. A water- and air-permeable black polypropylene fabric was laid on the surface of a field, and young *Phlox subulata* plants were transplanted into round holes cut in the fabric. Spring (late May) and autumn (late September) plantings were conducted. Weed control treatments were applied on the surface of the holes just after planting. They were applications of four different preemergence herbicides and placement of a small square fabric sheet. Hand weeding for one to 11 months were also compared to determine the necessary weed-free period. Weed emergence per hole was only two or less under spring planting and three or less under autumn planting, even for unweeded holes, but weeds grew quite vigorously under mulching conditions, severely competing with phlox plants, particularly under spring planting: one weed was able to kill the whole plant. A weed-free period after planting of at least one month was found to be necessary for normal canopy establishment of phlox, but a longer period of control resulted in greater development of the canopy. Weed control effects on phlox canopy size tended to appear several months after the weeding treatments were applied. Application of granules of isoxaben/trifluralin at 0.6/2.7 kg a.i. ha<sup>-1</sup> to the planting hole provided complete control of summer weeds in spring-planted phlox, and weeds of

winter and the following summer in autumn-planted phlox. The same herbicides at 0.32/1.44 kg a.i. ha<sup>-1</sup> also provided year-round weed-free conditions both in spring- and autumn-planted phlox when accompanied by the placement of the hole cover, although the cover alone showed insufficient control. Phlox grew most actively in early spring, and winter weeds were less vigorous than summer weeds. Therefore, autumn planting seems more successful than spring planting, from both the cultural and weed management standpoint.

**Keywords:** ground cover plant, geotextile mulch, *Phlox subulata*, planting hole weed control, isoxaben/trifluralin

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