

GROWTH OF TREE SEEDLINGS IN PEAT PELLETS

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The planting of potted seedlings has the principal advantage of transplant shock being eliminated. Survival, especially on severe sites, is generally far better for potted than for bare-rooted seedlings. Peat pellets, marketed by the jiffy-Pot Company of America as jiffy-7's, are a recent and promising addition to the variety of containers available for producing potted planting stock. We grew Douglas-fir and ponderosa pine seedlings in peat pellets to test whether the roots of these species would penetrate the plastic net around the pellets and whether the seedlings would be large enough for transplanting before their roots emerged from the pellet.

The jiffy-7 peat pellet is a small, easily stored disk of compressed peat encased in a thin plastic net. When water is applied, the disk expands in a few minutes to form a pellet about 1 3/4 inches in diameter and about 2 inches high (fig. 1). The pellet is then ready to receive a seed or small seedling.

We placed one seed directly into each of the pellets, which stood in a shallow pan of water to insure continuous moisture supply. After seeds had germinated, 100 pellets with Douglas-fir and 100 pellets with ponderosa pine were planted in con-

tainers 8-inch deep filled with forest soil and kept outdoors.

An additional 100 pellets containing seedlings were left in pans so that we could easily observe the growth of roots through the netting. Roots of ponderosa pine grew out of the pellet within 3 to 5 weeks. Roots of Douglas-fir took 3 weeks longer, on the average, to reach this stage. Roots of both species were not hindered by the netting (fig. 2).

Seedlings planted with the pellets in soil-filled containers were removed from the containers after 3, 6, 12, and 24 months to check root development. Three-month-old seedlings had vertical roots 7 to 12 inches long (fig. 3). Lateral roots were also beginning to come out of the pellet. None of the seedlings died or showed that the plastic netting had become restrictive, although it had not deteriorated even after 2 years in soil (fig. 4).

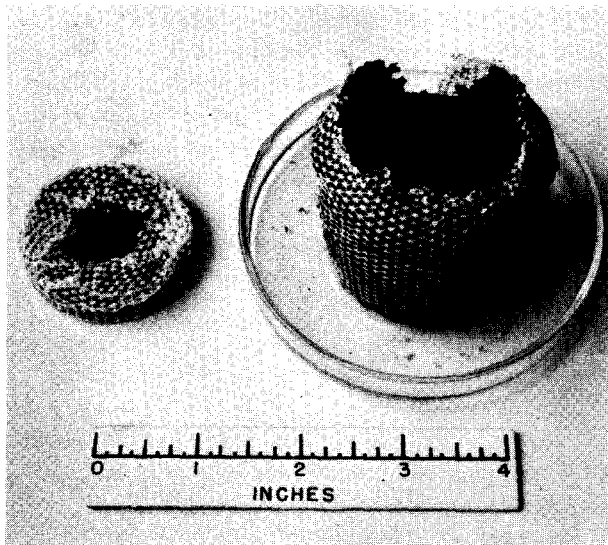


Figure 1.—Pellet: *left*, in disk form; *right*, expanded.

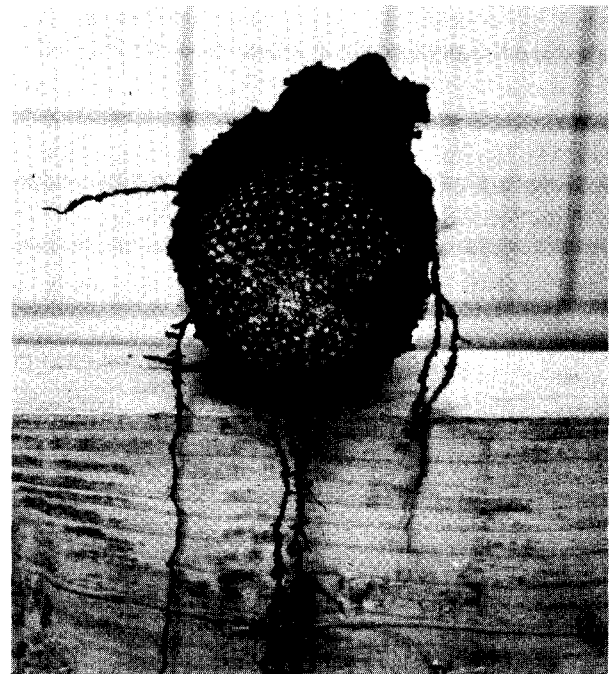


Figure 2.—Penetration of roots of 3-month-old Douglas-fir through plastic netting of pellet. Note that roots came through the center where net overlaps.

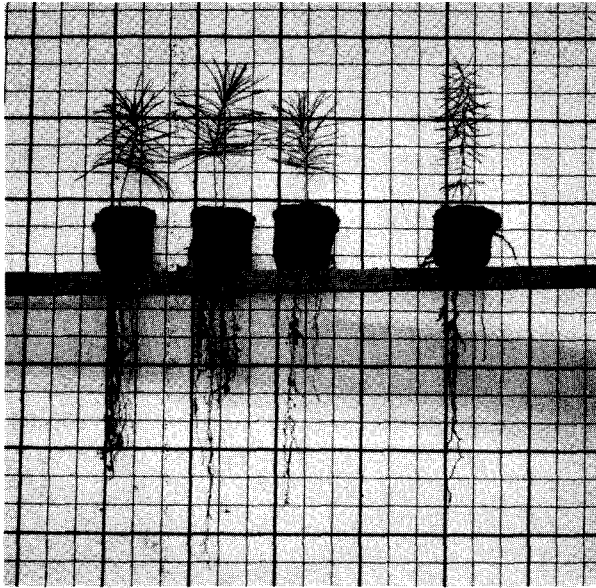


Figure 3.—After 3 month's growing in pellets: *Left*, ponderosa pines; *right*, Douglas-fir.

From these observations we concluded that seedlings of ponderosa pine and Douglas-fir raised in these pellets should be transplanted after about 1 month and 6 weeks, respectively. So many roots had emerged from the pellet after these periods that root systems would be severely damaged if the seedlings were transplanted. Trees at this age are not recommended for planting on reforestation areas in the Northwest, because they are susceptible to various kinds of damage. When limited amounts of valuable seed are to be raised, however, planting in pellets would be advantageous. Seedlings could be raised individually under the protection of a greenhouse and then easily transferred to a nursery or special planting area

