

CONCERNING SEED SPOTS.

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In connection with the sowing of Yellow pine, White pine and Western larch on The Blackfeet National Forest during the seasons of 1911 and 1912, seventeen and one-half acres were sowed directly in seed spots. The total of this sowing is divided into:

- A. 10 acres of Yellow pine (Black Hills) spring 1911.
- B. 5 acres of Yellow pine (Black Hills) spring 1911.
- C. 2½ acres of Western larch (Blackfeet) spring 1912.

Each area covered burns of the season 1910 and each area lying on a different watershed draining south, north and east respectively.

On area A where every bit of humus, sod and other material had been consumed, and where all the methods of direct seeding used were eminently successful, every one of the seed spots had seedlings. On area B where there was considerable sod everything failed but the seed spots. While on C with all humus, litter and brush removed the 15 acres sowed to White pine with cornplanters and broadcast failed, and the 2½ acres of seed spots proved successful.

Various reasons contributed toward the failure of the cornplanter method, such as sod, rodents and lack of moisture.

Before undertaking this work the writers entertained some skepticism as to the success of the seed spots method, largely because of the numerous failures of earlier experiments at large; but our results have shown it to be safer than sowing with cornplanter.

On the land where the soil had been burned off completely the spots were made with a garden rake, and in the presence of sod a mattock was used. After the litter had been removed from a spot from eight to ten inches wide the soil was loosened and mashed up to a depth of from one-half to one inch, whereupon a handful of loose soil picked up from the spot was strewn over the seed after it had been firmly pressed into a flat surface with the foot. Where the lay of the ground did not dip over 15% the seed were stuck in-

to a surface which had a slope equal to the general slope of the land, but where the land sloped more than this these spots were given a lesser slope, enough to allow good drainage. Moreover the seed was set firmly into a compact surface of loosened soil and this again allowed close contact with the underground, leaving no loose or unpacked soil under the seed and thus no obstacle to percolation by evaporation of the soil moisture. Since the snow had barely disappeared the ground was very wet and the evaporation of this moisture was depended upon to germinate the seed, which it did, germination of the Yellow pine seed being in progress within 10 days after sowing.

By the method described the surface of the seed spots was well drained and remained moist as long as there was moisture in the earth. The water from occasional rain was thus applied gradually, having to evaporate first. The loose earth thrown over the seed kept dry most of the time. It assisted in keeping the seed damp during periods of evaporation, prevented rapid drying, equalized the temperature by day and night and prevented drying and cracking of the seed spot surface, simultaneously hiding it from rodents and birds.