

BLACKBRUSH, *Coleogyne ramosissima*,
PROPAGATION AND REVEGETATION

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Objectives

The focus of this research is two-fold. First it is to develop a methodology for the asexual production of blackbrush (*Coleogyne ramosissima* Torr.) propagules. Furthermore, these propagules are to be evaluated for their use in revegetation of disturbed areas within Canyonlands National Park.

Methods

Cuttings were collected from two sites, one on the island itself, the other on the white rim. Collections were carried out in April (spring) and July (summer) of 1989 with a third sampling in October (fall). Cuttings were returned to Colorado State University where they were prepared, given one of four treatments and placed in a propagation bed. Evaluations were conducted eight weeks after collection. The data consisted of the numbers of plants rooted, the numbers of roots produced and a class designation to evaluate the development of the roots.

The second investigation initiated in March 1989 involved the planting of our cuttings rooted during the 1988 season. Thirty-nine plants were planted in an abandoned road bed near Grandview Point on the island in the sky. All plants were planted with a small amount of peat moss (1:5) incorporated into the soil with backfilling and all were watered thoroughly following planting. These plants were randomly assigned one of three treatments. The first, to serve as a control, received only natural precipitation as the sole water source. The second treatment involved use of a gravity-fed irrigation system to provide approximately one liter of water at two-week intervals in addition to precipitation. The third treatment involved incorporation of a water-retaining compound (Hydrosorce) with the backfilled soil in addition to one liter of water at two-week intervals.

Results

The propagation aspect of this project has been completed. Analysis was carried out on a number of factors involved in the rooting of cuttings. The factors found to significantly affect rooting were the age of the material used for rooting (one-year old growth rooted better than older material), and the season of collection of cutting material (the material sampled in spring rooted more readily than that collected in summer or fall).

No significant findings can be reported for the reestablishment aspect in 1989 due to an inadequate sample size. A non-statistical comparison of the cuttings planted in March 1989 versus the survival of blackbrush seedlings planted at the same site by a private contractor in fall 1988 was made. Ten percent of the cuttings which received supplemental irrigation survived through October when final evaluation was carried out while none of the seedlings were found alive. There are a great number of variables involved in this comparison including planting date, plant material and planters. However, we would assume that irrigation influences the survival rate. The reestablishment aspect of the project will be repeated in spring 1990 with a larger sample size.

Future

A report to be submitted to the National Park Service Research is forthcoming and results of the cutting aspect of the project will be submitted to the International Plant Propagators Society.

The cutting aspect of this project is complete. The establishment aspect will be repeated in spring 1990 when the remainder of the cuttings produced in the 1989 season are planted into the field. A complete proposal for 1990 will follow this report.

Conclusions

Young stem cuttings of blackbrush root readily under mist. Cuttings collected in spring rooted more readily than when collected at other times. Although transplants survived one season in the field, further studies with a larger sample size must be made before making conclusions.