

Investigating the potential for use of the endangered species, running buffalo clover (*Trifolium stoloniferum*) on reclaimed mine-land.

Running buffalo clover (RBC) is native to Ohio, however, loss of prairie habitat has resulted in it becoming a federal endangered species. Presumed extinct around 1940, researchers rediscovered small populations in the mid-1980s along the Ohio River corridor. Though the U.S. Fish and Wildlife Service implemented management plans and state agencies attempted reintroductions, the species remains in a perilous state in the wild. The objective of this study is to determine the tolerance of RBC to acidic and sulfuric/ferrous soil. The hypothesis is that a commercial or private utility may encourage larger reintroductions and invigorate new interest in a deserving, endangered endemic species. Previous research has investigated the forage potential of RBC, however, it has failed to outperform its 'cousin', white clover (*Trifolium repens*). In this study, three strains of RBC were treated with nutrient solutions in a factorial arrangement of two pH (5.0 and 6.0) and two FeSO₄ levels (0 and 1000 mg/L) in the Kottman greenhouse. The experimental design was a 4 x 2 x 2 factorial treatment structure, with a randomized complete block arrangement for the four replications (64 pots in total). Plants were established from stolons on 16 December 2016, and grow in vermiculite to facilitate measurements on roots. . The responses for RBC were compared with comparative *Trifolium repens*, treatments. The nutrient solution treatments began on 20 January 2017, at which time RBC plants averaged 0.549 g of shoot, and 0.481 g of root, whereas white clover averaged 0.0825 g of shoot, and 0.0694 g of root. The persistence of running buffalo clover in vermiculite medium—a first in its research history—as well as the prolific root mass suggest a suitability for reclamation applications. Month-old root-balls display a firm establishment in destitute media. After a two months pH and sulfur treatments, root mass and aboveground growth will be measured. Should running buffalo clover outperform white clover, it might recover as a species with introduced, reclamation populations serving to revegetate their endemic range on protected habitat.