

Impact of seedling characteristics, outplanting time, and container size on early establishment of aspen (*Populus tremuloides*) on reclamation sites

Javier Rodriguez-Alvarez

Abstract

Aspen seedlings often suffer from transplant shock after outplanting. The influence of seedling characteristics and time of outplanting (spring, summer and fall) on field performance was examined on mining reclamation sites. Seedling characteristics were modified by inducing premature bud set using blackout (B), artificial growth retardants (H) and naturally reduced photoperiod (C). Some seedlings were also shortened by clipping their shoots (CL). Seedling characteristics were also manipulated by growing them in two container sizes and moving them outside the greenhouse at different times of the growing cycle. Results indicated that stock types with high root to shoot ratio (RSR) and root reserves (TNC) that were outplanted in the spring or fall had greater growth and reduced dieback. Seedlings moved earlier outside the greenhouse showed also better height growth, while container size had little effect, as long as RSR and root TNC were high.