

## **Degraded dryland rehabilitation: boosting seedling survival using zeolitic tuff**

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More than 90% of Jordan is broadly defined as rangelands. Most rangelands are located within the arid zone of the country. Extensive grazing occurs across much of the natural pastures resulting in serious environmental degradation of natural resources in these rangelands. Several programs were carried out for rangeland conservation and rehabilitation in the country. However, these programs face a major challenge of the low survival rate of transplanted shrub seedlings. Seeking innovative approaches to assure healthy establishment of seedling is a big challenge to achieve successful rehabilitation programs. Drought is considered one of the major problems in rehabilitation. Promoting survival and growth, using zeolitic tuff added to planting holes is suggested to be a possible solution. The experiment was conducted on a factorial arrangement within RCBD design. Two shrub species (*Atriplex halimus*, *Atriplex nummularia*) were transplanted into holes prepared with three levels of tuff treatments (mulching, mixing and control) under rainfed condition.

The result showed insignificant effect of tuff on seedling survival percentage, when mixing tuff with plantation soil or adding tuff as mulch. Also, the two species showed similar survival percentages over two measured dates. However, mixing tuff with soil during hole preparation significantly enhanced seedling heights. Further, The Australian atriplex (*Atriplex nummularia*) species significantly grow higher than *Atriplex halimus*. The study results suggested that mixing zeolitic tuff with soil during transplantation of seedling is promising in improving the success of rangeland rehabilitation in dry areas in Jordan.