

In the tobacco seedling production system, water moves up by capillary action from the water bed to the surface where it evaporates. Salts that accumulate after evaporation cause injury of plants. Some of the well noted effects include ion toxicity and reduction in seed germination, plant growth, and reduced crop yields. An experiment was carried out at Kutsaga Research Station in Harare to optimize mulch quantities in tobacco float seedlings for the control of salt injury and improvement of seedling quality. Vlei grass mulch was applied on experimental plots at 0 kg/ m² (0 % mulch), 58 kg/ m² (50 % mulch), 1.16 kg/ m² (100 % mulch) and 1.74 kg/ m² (150 % mulch) in two seasons; 2012 and 2013 in July and in August. Germination percentage, survival counts and seedling damage assessments were measured at 7, 21 and 28 days after sowing (d.a.s). Growing media samples were collected for electrical conductivity (EC) and pH measurements at the same time. In both the July and the August sowings, germination increased with increasing mulch levels. The highest germination percentage (80%) was attained in August at the 100% mulch covering. Growing media pH did not significantly differ under different mulch levels but increased with days after sowing in both July and August. Media EC increased with days after sowing, generally, but lethal levels were reached on August sown seedlings at 0% and 50 % mulch rate. Seedling stem diameter increased with mulch rate in both sowing times, with the maximum attained at 100 % mulch rate. Stem height decreased with increasing mulch rate in the July sown, while the reverse was true in the August sown, where the maximum stem height was attained at 100 % mulch rate. The results show that mulch at the rate of 1.16 kg/ m² (100 % mulch) is required for salt injury control in the floatbed for the improvement of seedling survival and seedling quality, measured as stem height and stem thickness during the warmer times of the seedbed season