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Effect of mechanical and chemical scarification on germination of dodder (*Cuscuta campestris* Yunck.) seed

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xperiments were carried out to evaluate the effect of seed treatment on germination of Cuscuta campestris. This may provide the Dossible ways to overcome the problem of dormancy in *Cuscuta campestris*. The experiment were conducted in the Laboratory of Crop Production and Horticulture, Modibbo Adama University of Technology, Yola, Adamawa State, using wet heat treatment, mechanical scarification, gibberellic acid (GA₂) and tetraoxosulphate (VI) acid (H₂SO₄). For wet heat the treatments were control, 1 second, 2, 3, 4, and 5 seconds. For the mechanical scarification the treatments were unscarified, scarified using sandpaper and scarified using gravel arranged in a completely randomized design (CRD) replicated four times. For the tetraoxosulphate (VI) acid (H₂SO₄) scarification the treatment were control, 9:1,7:3, 1:1, 4:6, 3:7, 2:8 and 1:9 H₂SO₄ laid out in a Split plot design replicated three times, while for gibberellic acid (GA₃) the treatment were control, 50, 100, 150, 200 and 250 ppm laid out in a Split plot design replicated three times. The results showed that wet heat treatment for 5 seconds significantly produced the highest germinated C. campestris seeds (36.53%) than the control treatments. Though mechanical scarification was not significant (P<0.05), a rapid increase of germination from day 3 to day 9 was observed, with the highest rate of germination percentage (14 - 22%) obtained on day 9. Tetraoxosulphate (VI) acid treatment of 4:6 concentrations significantly gave the highest C. campestris seeds germination percentage (40.07%) compared with the rest of the treatments, while the time of soaking the seeds in the tetraoxosulphate (VI) acid showed that soaking the seeds for 1 second significantly gave the highest percentage germination (39.98%) of C. campestris compared with the 3 and 5 seconds soaking treatments. The effect of interaction between the giberrellic acid (GA₂) and the soaking time shows 250 ppm GA₂ and soaking time of 36 hours had significantly the highest germination percentage (4.50%) of C. campestris seeds compared with the control (0.79%), 50 ppm (0.99%) and 200 ppm (1.98%) treatments. It can be concluded that wet heat for 5 seconds, sulphuric acid of 4:6 concentrations and of 250 ppm GA₃ and soaking time of 36 hours treatments has the potentiality to break dormancy of C. campestris seeds.

Biography

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