ABOUT US

Ann-Rose Uhland and Myriam Ouardani are two McGillian students respectively in U3 and U2. They are studying in Agro-Environmental Sciences and specializing in ecological agriculture. They are both avid plant collectors and therefore were really enthusiastic to learn more about plant propagation.

OBJECTIVES OF THE PROJECT

TO STUDY THE EFFECT OF IBA ROOTING HORMONE POWDER AT VARIOUS CONCENTRATIONS AND THE EFFECT OF THE CUTTING TYPE ON ROOTING OF STEM CUTTINGS OF SERISSA JAPONICA.

Softwood and hardwood cuttings are a common propagation method for *Serissa japonica*, which is also commonly called tree of a thousand stars. The available literature did not record the effect of rooting hormones on *Serissa japonica*, but other members of the Rubaceae genus that have the reputation of being more difficult to root have succeeded best with a 1% IBA concentration (Dhiman and Gupta, 2013). However, as *Serissa japonica* is described as an easy to root species (Morris and Wolff, 2008), it is possible that it does not absolutely need the hormone powder to root. For this experiment, the hardwood and softwood cuttings were 5cm long, approximately 5-6 nodes. We used 10 cuttings per treatment and had 2 replicates for each of them.

PROCEDURES OF THE EXPERIMENT

SOFTWOOD AND HARDWOOD CUTTINGS TREATED WITH IBA AT 0% (CONTROL), IBA AT 0.4% (STIM-ROOT #1), OR AT IBA 0.8% (STIM-ROOT #2).

The media used was a mix of 50% perlite and 50% peat moss. Our treatments were randomized across 3 Styrofoam flats with ten cuttings per row. The root hormones used were Stimroot #2 and #3. *S. japonica* is a plant that should be kept in a humid environment, it is recommended to spray the foliage daily. Therefore, the cuttings remained in the mist frame with a bottom heat (25°C) throughout the experiment. Mist frequency was 10 s every 15 min.
RESULTS

We started to collect data as soon as we noticed the first sign of root initiation, 3 weeks after we started the experiment. We recorded the rate of root formation weekly by sampling 2 or 3 cuttings per treatment. We used a 3-score scale to classify them. A root score of 0 meant no root, 1: few roots, 2: significant amount of roots, and 3: a lot of roots.

In overall, hardwood cuttings took longer to initiate their root formation. The use of IBA #3 allowed root formation to be quicker but showed the same results at the end than no IBA treatment. There was no difference between no IBA and IBA #2 treatments, the no IBA treatment was even more effective for the softwood cuttings than the IBA #2.

For the final results, we compared all the 20 cuttings from the 2 replicates of each treatment. We used a more precise scale to grade them based on a 4-score system. A root score of 0 meant no roots, 1: starting to root, 2: few roots, 3: significant amount of roots, and 4: a lot of roots. We selected the best rooted cuttings to transplant them.

We observed that even if the softwood cuttings were the first to root, hardwood cuttings were the ones with the most root formation. The use of IBA did not seem to have a concluding effect on root formation, we could not define a trend in the results. The no IBA showed even more positive results.
CONCLUSION

IBA did not seem to have a significant impact on the root development of *Serissa japonica*, however it did improve the rate of root formation. Root formation was faster with IBA #3, while IBA #2 had no noticeable effect. Hardwood cuttings showed better root development than softwood cuttings, despite they took longer to initiate their root formation.

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REFERENCES