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PLNT 310

Propagation of the Jade plant by cuttings

Background:

Crassula ovata is a succulent ornamental species native to South Africa and Spain. Jade requires specific environmental conditions to thrive such as an arid climate of around 40°C and relatively constant amounts of water. If Jade becomes dehydrated it may become spotted, dwarfed or even lose leaves. It needs direct sunlight, but too much sun may cause its leaves to become shriveled and dark red. In the wild, it grows best in well drained, large-particle soils composed of sands and/or loams (CABI, 2016). Succulent species have proven to be fairly simple to propagate by cuttings, which is why I decided to attempt two types of stem cuttings. In addition, rooting hormones, and bottom heat are known to have various effects on root growth.



Objective:

My goals for this experiment were to compare the difference between rooting successes of several-node and single-node stem cuttings and leaf cuttings with or without bottom heat, rooting hormone, and a callusing period following cutting.

Methods:

1. I chose a healthy source plant for cutting stems and leaves. Stem cuttings measured 5 cm each and there were 16 stems and 32 leaves per replicate.

- Treatment 1: No bottom heat, no hormone.
- Treatment 2: No bottom heat, with hormone.
- Treatment 3: Bottom heat, no hormone.
- Treatment 4: Bottom heat, with hormone.

2. I prepared succulent potting mix, made of 1 part turface: 1 part soil: 1 part sand: 2 parts Agro-Mix. Two flats were filled and labelled. Each treatment had two replicates; in one replicate the cuttings were planted immediately and in the other, time before planting (3 days), allowed callus to form.

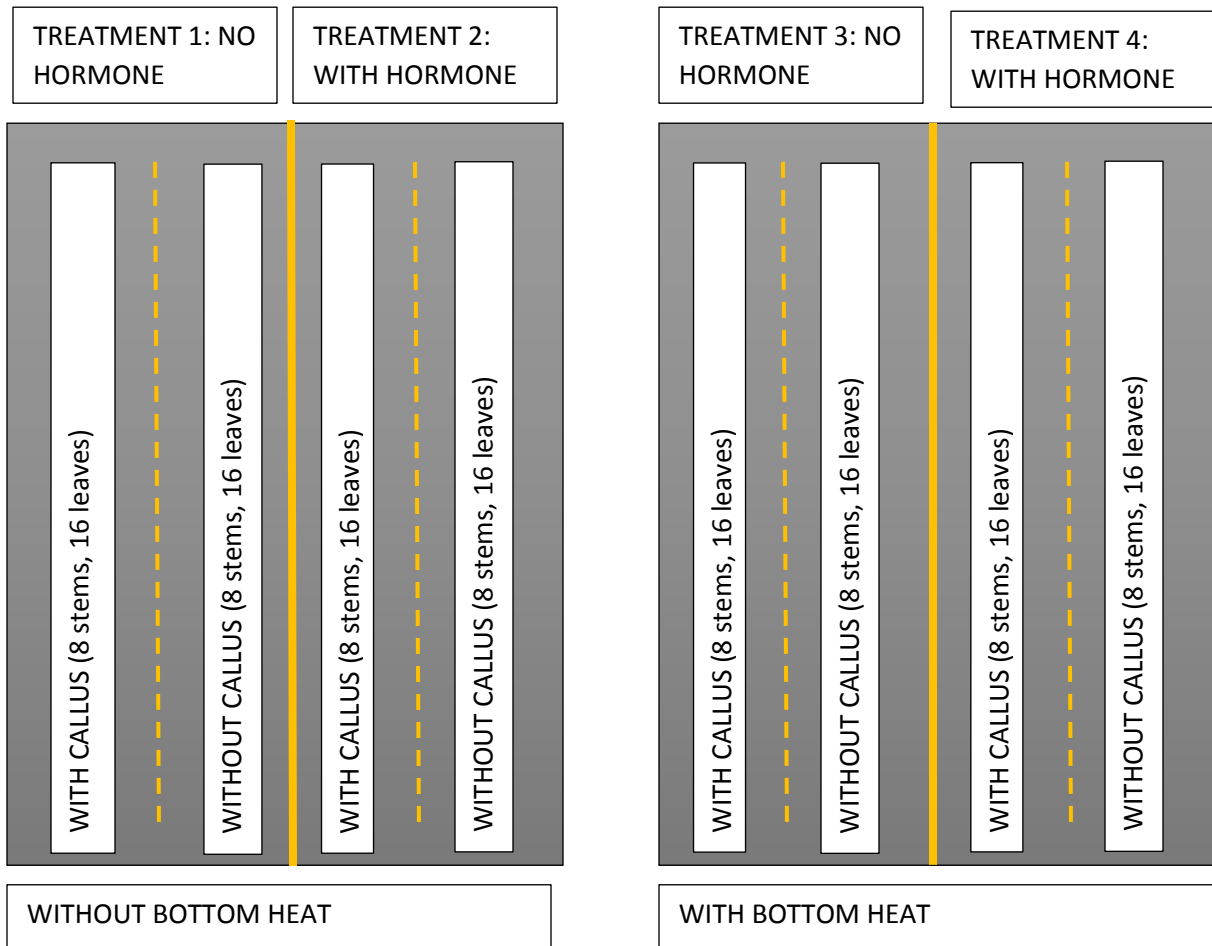
3. Cuttings for treatments 2 and 4 were dipped into rooting hormone powder (Stimroot #1).

4. For each treatment, half were planted right away half were left for 3 days to callus before planting.

Results:

Overall, the cuttings exposed to rooting hormone had the greatest rooting success which would be expected. However, although bottom heat may simulate their growth under natural conditions, the leaves in the bottom heat flat were less healthy looking, showing signs of dehydration. This may be because they were also closer to the window next to the greenhouse steam heater. Therefore, the flat with no bottom heat was more successful than the one with bottom heat. Callus formation did not show signs of improving root formation.

Experimental design:



Conclusion:

The best method for propagating the Jade plant would be the addition of hormone, without a callus period on an open, unheated bench.

Literature Cited:

CABI, 2016. *Crassula ovata*. In: Invasive species compendium. Wallingford, UK: CAB International. www.cabi.org/isc.

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