

Jade Vine Propagation at The Living Rainforest

Jade vine - *Strongylodon macrobotrys*

Instantly recognisable by its luminescent jade and hook-shaped flowers on spikes up to 3m long, the Jade Vine is truly gorgeous.

Found only in the Philippines, where it grows alongside tropical streams, this plant is a member of the *Fabaceae* family. In the wild, the flowers primarily attract tropical bats, which carry pollen from one plant to the next. The bats are drawn to the glowing luminosity of the flowers at twilight and hang upside down to drink the nectar from them, pollinating as they brush their heads against the top of the flower.

The plant is becoming rarer in the wild as its natural habitat is affected by deforestation. In the Philippines, illegal and legal logging has resulted in a massive loss of rainforest; however, in cultivation, this plant can be seen in many botanical gardens.

The Living Rainforest

The Living Rainforest is a tropical glasshouse home to a rich variety of plants and animals, creating a unique rainforest ecosystem. Visitors can encounter free-roaming species as well as animals housed in enclosures, while discovering their conservation stories and how we can protect them for future generations. The Living Rainforest is located in Hampstead Norreys, a small village about eight miles from Newbury and fourteen miles from Reading. Originally Wyld Court Orchid Nursery, the site became the Wyld Court Rainforest visitor centre in the late nineties, and in 2000, the site became The Living Rainforest (TLR).



Strongylodon macrobotrys in full bloom 01.04.25

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The site is now an educational visitor centre featuring ecosystem and sustainability exhibits, owned by the Trust for Sustainable Living, a global educational charity. The Living Rainforest houses over eight hundred species of plants and forty species of animals, alongside plant displays and animal enclosures. Several individual plant specimens are displays in themselves. One of these is the 100-year-old Jade vine, which was introduced to the site when it was Wylde Court Orchid nurseries.

In 2021, I volunteered with the horticulture department at TLR. The focus of the work at the time was caring for the Jade vine, which was suffering from loss of leaves due to the Java sparrows (*Lonchura oryzivora*) which took a liking at first to the Jade vines new shoots, and then to all green material on it. Java sparrows are a small bird which are a native endemic of the islands of Java, Bali, and Indonesia. This is a popular cage bird, resulting in the wild populations not only being threatened by loss of habitat but trapping also. Balancing horticulture alongside our free roaming animals is a major part of work at TLR, and one I like as it is mimicking the plants in their natural ecosystem that much more. After much care from the horticulture staff and wonderful volunteers, years later, now a senior horticulturist at TLR, I have had the pleasure to see the Jade vine return to a thriving state and watch it bloom, produce seeds, and witness those seeds germinate. The site now has twelve seedlings propagating off-show to introduce to the glasshouses alongside the parent plant.

Bringing the Jade vine back to life

In the autumn of 2022, there was a grave concern that we would lose this plant from the collection, as it had only eight mature leaves.

The horticulture department implemented protective measures using draw string gift bags to protect new shoots and netted curtains to cover the main stems and what was left of the canopy of the plant. Feeds and watering were altered to ensure the roots did not rot and there was not an excess of nutrients given how few leaves there were.

In April 2023, the Java sparrows were removed from the animal collection. The Javas had been in the collection from November 2010 to April 2023, but only began eating the Jade vine in June 2020, so it was understood that the boom in the population was the cause of the influx of herbivory on the plant. With this species leaving the collection, it opened opportunities for the introduction of other species into the free roaming glasshouse, which the animal department carefully manage.

In November 2023, after sufficient foliage had grown back, a weekly feed of Universol 3:2:3, was implemented; this then changed to Universol's 2:2:6 when the first flower spike was spotted. Watering was increased to ensure the soil was kept damp, and in October 2024, the vine was pruned- keeping three nodes of that year's growth. All material from this pruning was propagated and now as of 11.09.25, of the over 150 cuttings I did, I have one successful cutting with new growth off the original material and three others that I am hopeful will send their own shoots off soon. Perhaps some jealousy watching the seedlings grow so quickly opposite them will spur them on. It was our aim this year to have a healthy plant, so when flower spikes were spotted on the 14th of March 2024, we were delighted.

Pollinating Jade vine

Jade vine flowers have evolved to be pollinated by bats, luring them in with a nectar reward- I can attest to the nectar being delicious; the staff at TLR were all honorary bats whilst the plant was being pollinated, and everyone had a taste.

The first flower spikes were seen 14.03.25; this was the first sighting of a flower spike on this plant in 4 years. There were two bouts of inflorescence, with two flower spikes being fully open and pollinated 01.04.25, and the third flower spike blooming 16.04.25.

To pollinate the plant, I made a C shape using my thumb and forefinger. I put my forefinger in the centre of the flower (in the nectar) and my thumb to the back of the keel (two fused petals which look like a hook that enclose the reproductive organs). As I pressed down lightly with my finger and forward with my thumb, mimicking the pressure a bat would make whilst drinking the nectar, the pollen was released from the anthers. I collected the pollen with my other hand. At the same time in the same location, the pollen was released, the stigma was exposed, where I dusted pollen from the neighbouring flowers. I continued this process with every single flower in the three flower spikes we had – around 240 flowers- moving pollen between the different flower spikes. The horticulture volunteers were part of the pollination team and made this process much faster.



Strongylodon macrobotrys flower. 01.04.25
© C McGiveron

Propagating Jade vine

On the 28th of April, we saw signs of successful pollination- tiny 2cm pods- originally eight on the first two flower spikes. Three pods made it to maturity and were harvested on the 29th and 30th of July. They had grown to be 745g and 758g, holding four seeds each. The final seed pod of the third flower spike held only three seeds and was harvested on the 18th of August. These were the first seeds harvested from this plant in 18 years.



Successful pollination and maturing of 3 *Strongylodon macrobotrys* pods, photos taken 28.04.25, 01.05.25, and 29.06.25 - these were the first seedpods harvested from the plant in 18 years © C McGiveron



Successful germination of twelve of the 15 *Strongylodon macrobotrys* seeds sown, seedlings with roots exceeding the bottom of the pot and shoots over 30cm long. 25.08.25 © C McGiveron

These seeds were soaked for 24 hours, and half were lightly scarified and half not. After soaking the seed, the seed coating was released from the embryo therefore, on reflection, the scarification did not seem necessary- the germination timing was the same as well, so this step seems unnecessary. But perhaps on a seed being sown that is not as fresh, this may be required. One pod I did decide not to soak, the result was that the seeds germinated, and shoots appeared 3 days after the seeds which were soaked. Any future seed I have decided not to scarify, and to soak for 24 hours.

They were sown in a wood fibre soil with perlite, sat on a heated sand tray under a growth light in a glasshouse at a temperature of 24 degrees Celsius.

The last time this plant was recorded to produce pods was in 1999, at this

time a pod was stolen from the plant. Then in 2000 and 2007, seedlings were given to the Eden Project and Birmingham Botanical Gardens, so the total of fifteen seeds this year was well overdue.

Looking forward

The Jade vine at TLR is a key specimen in the collection, having it recovered to a healthy flowering state, and having seedlings to introduce to the main glasshouses has been a major achievement of the horticulture department this year - only made possible through the help of other departments and our excellent team of volunteers.

I look forward to the future with several mature Jade vine specimens around the glasshouses and to trying to acquire another species within the genus.

Chloe McGiveron
Senior Horticulturist, The Living Rainforest

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