



ARC GRANT AWARDED TO UNLOCK WA'S FLORAL EMBLEM

A research project inspired by Kings Park's ground-breaking blue kangaroo paw development has been awarded an Australian Research Council grant to uncover the mysteries behind kangaroo paw flower colour expression.

Nearly a decade of plant hybridisation at Kings Park resulted in the release of the unique Kings Park 'Masquerade' blue kangaroo paw in 2021.

Blue flowers are so rare in nature that the unique hybrid has begun an interdisciplinary collaboration to map the first entire kangaroo paw genome.

A partnership between the Botanic Gardens and Parks Authority, Department of Biodiversity, Conservation and Attractions and Edith Cowan University, along with other collaborators and funding from the Friends of Kings Park, the project is examining unlocking the genetic and biochemical potential of this iconic WA species.

Kings Park Senior Plant Breeder Digby Grows said mapping the genome of Western Australia's floral emblem would open up the possibilities for kangaroo paw research for years to come.

"Nobody's ever done work to uncover the science behind colours in *Anigozanthos* and therefore we don't know how they're expressed," he said.

"This is really globally significant science that we're about to undertake that will further Kings Park's world-leading native plant development program."

Edith Cowan University Chief Investigator Dr David Field said the project would use cutting edge genomic sequencing technology integrated with biochemical analyses to uncover the genes behind the colours.

"The project expects to assemble the first kangaroo paw genome, identify the genomic regions driving colour variation in a cross-breeding programs, identify some of the biochemical compounds responsible and lastly, describe the genetic sources of these flower colour genes in nature.

"The complete 'genetic blueprint' held in the sequence of the DNA molecules in the genes directs all the biochemical processes required for life and biological diversity.

"An assembled genome for kangaroo paws will therefore provide a foundational resource required to map the location of genes responsible for traits of interest for horticulture and conservation."

The project will track genetic changes producing the colour by restarting the process of creating a blue kangaroo paw through cross-breeding red and green kangaroo paw and green kangaroo paw parents.

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Digby Gowns said science was a major part of the work done by Kings Park and the project funded by the ARC Linkage Program would not only develop new scientific techniques but also inspire more research into Australian plants.

“We're using techniques that have never been used in Australia before,” he said.

“There are many questions that can be answered once we map the genome, including the impact of variable colours on pollination and biodiversity.

“The ARC Linkage grant highlights that there's this amazing plant out there with a lot of questions around it, and through this brilliant team of collaborators we're hoping to answer them.

“By breeding plants with unique and striking colours, Kings Park aims to encourage gardeners to fill their backyards with WA native plants.”

Blue kangaroo paws will be available for sale in Western Australian retail nurseries in March 2022.

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