

Aspirin aids Middle East plant restoration project

April 13 2015, by Brooke Hunter



Desert restoration in progress during the scientific trial at Thumama Nature Park, Saudi Arabia

Kings Park scientists have found a key ingredient in aspirin and anti-pimple products, salicylic acid, is a cost-effective plant growth and survival improver during a world-first desert restoration trial in Saudi Arabia.

For more than two years, Kings Park horticulturists and [restoration](#) scientists have been leading the systematic approach enabling plant restoration in the Thumama Nature Park near Riyadh.

To help reverse environmental degradation due to pressure from overgrazing, the trial encompasses seed collection, processing and plant production in arid sites.

Approximately 103,000 plants were installed to answer questions about the establishment of three species of Acacia (Fabaceae) native to Saudi Arabia.

Using Kings Park restoration principles, project partner Arriyadh Development Authority (ADA) are undertaking 40,000 environmental plantings across approximately 10 hectares.

Kings Park plant development manager Patrick Courtney says treatment combinations are showing positive results in regards to arid climate survival.

"We have shown the plants are water limited and respond to treatments that facilitate more efficient water use," he says.

"Delivery of water to depth and some anti-stress chemicals are giving early indications of improved survival."

But, he says the most exciting discovery to date has been the application of the anti-stress agent [salicylic acid](#) to seedlings prior to planting.



Scientific trials at Thumama Nature Park, Saudi Arabia. Credit: BGPA

Using plant ecophysiological techniques, researchers have shown aspirin protects the photosynthesis system—allowing for growth under severe water stress.

Kings Park scientist Jason Stevens says aspirin is applied as a foliar spray for plants and as a coating for seeds.

"This assists plants in regulating water loss from the leaf by controlling stomatal apertures as well as assisting in normal membrane functioning and overall water relations," he says.

"Transpiration is an inevitable consequence of leaf photosynthesis because as stomata open to fix carbon they also allow for water loss.



Kings Park staff and local contractors monitor a scientific trial at Thumama Nature Park, 100 kilometres north of Riyadh, Saudi Arabia. Credit: BGPA

"If aspirin can assist the plant in regulating stomatal openings, it goes a long way to protecting the plant from losing too much water."

Mr Courtney says during the trials, approximately 40 per cent of plants survived on as little as 1L of water per month, compared with 3 per cent survival in untreated [plants](#).

"This is a remarkable outcome showing a conservative approach to [water](#)

use can still result in restoration success," he says.

Despite the program being in its early stages, ADA is already conducting active restoration programs using the knowledge gained through the trial.

Provided by Science Network WA

Citation: Aspirin aids Middle East plant restoration project (2015, April 13) retrieved 11 August 2024 from <https://phys.org/news/2015-04-aspirin-aids-middle-east.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.