

# Bitter chemical coating leads to quinoa success

July 27 2016, by Science Network Wa

---



Quinoa crop. Credit: Essence Photography

The challenge posed by removing a chemical compound from their 'superfood' crop to create a market for WA quinoa led three innovative farmers to build Australia's largest quinoa processing plant in the state's south-west.

Highbury farmer Ashley Wiese, Dumbleyung farmer Megan Gooding

and Narrogin agronomist Garren Knell began trialling quinoa (*Chenopodium quinoa*) in 2009 to diversify into a more profitable cereal.

C. quinoa originated in the Andean mountains and has been cultivated for thousands of years.

The grain's popularity surged between 2006 and 2013 after being touted for its nutritional value, with prices tripling and the United Nations General Assembly declaring 2013 International Year of Quinoa.

However, Mr Wiese says it's an extremely difficult crop to grow.

"Quinoa is very set in its way—you have to give it what it wants or it will give you nothing," he says.

While Narrogin's winter is similar to an Andean summer in temperature and rainfall, quinoa won't set seed under hot conditions.

On the upside, quinoa is drought and frost resistant and has developed a chemical defence mechanism called saponin.

Saponin is a bitter coating that acts as a natural insect and bird repellent.

It's a soap-like substance and specific washing and drying processes are required to make the grain edible.



Three Farmers Ashley Wiese, Megan Gooding and Garren Knell. Credit: Essence Photography

Narrogin's low-lying altitude means the golden quinoa variety has high saponin levels, to protect the grain against more birds and insects than found at elevated altitudes.

The trio chose to build mainland Australia's first quinoa processing plant—Tasmania has a smaller facility—instead of shipping their crop offshore.

The \$1.5 million facility in Highbury, 15km south of Narrogin, began operations in January.



Mr Wiese says it's been a steep learning curve but rewarding.

"There's been a lot of trial and error in developing our own machines to remove the saponin without damaging the grain," he says.

Their system involves softening the saponin through scarification, removing about 70 per cent in a dry dust form, then washing, rinsing and drying the seed.

They currently process 400 tonnes of quinoa a year but have the capacity to expand tenfold.



Processed golden quinoa grain. Credit: Essence Photography

Their grower network of 16 farmers between Kununurra and Esperance

has ramped up plantings from 200 hectares three years ago to 1700ha this year to meet growing demand.

Three Farmers' first quinoa hit supermarket shelves in April.

Since then, Coles has replaced imported quinoa with the WA product, which Mr Wiese says is very encouraging for the future of the emerging Australian crop.

*This article first appeared on [ScienceNetwork Western Australia](#) a science news website based at Scitech.*

Provided by Science Network WA

Citation: Bitter chemical coating leads to quinoa success (2016, July 27) retrieved 18 April 2024 from <https://phys.org/news/2016-07-bitter-chemical-coating-quinoa-success.html>

<p>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.</p>
--