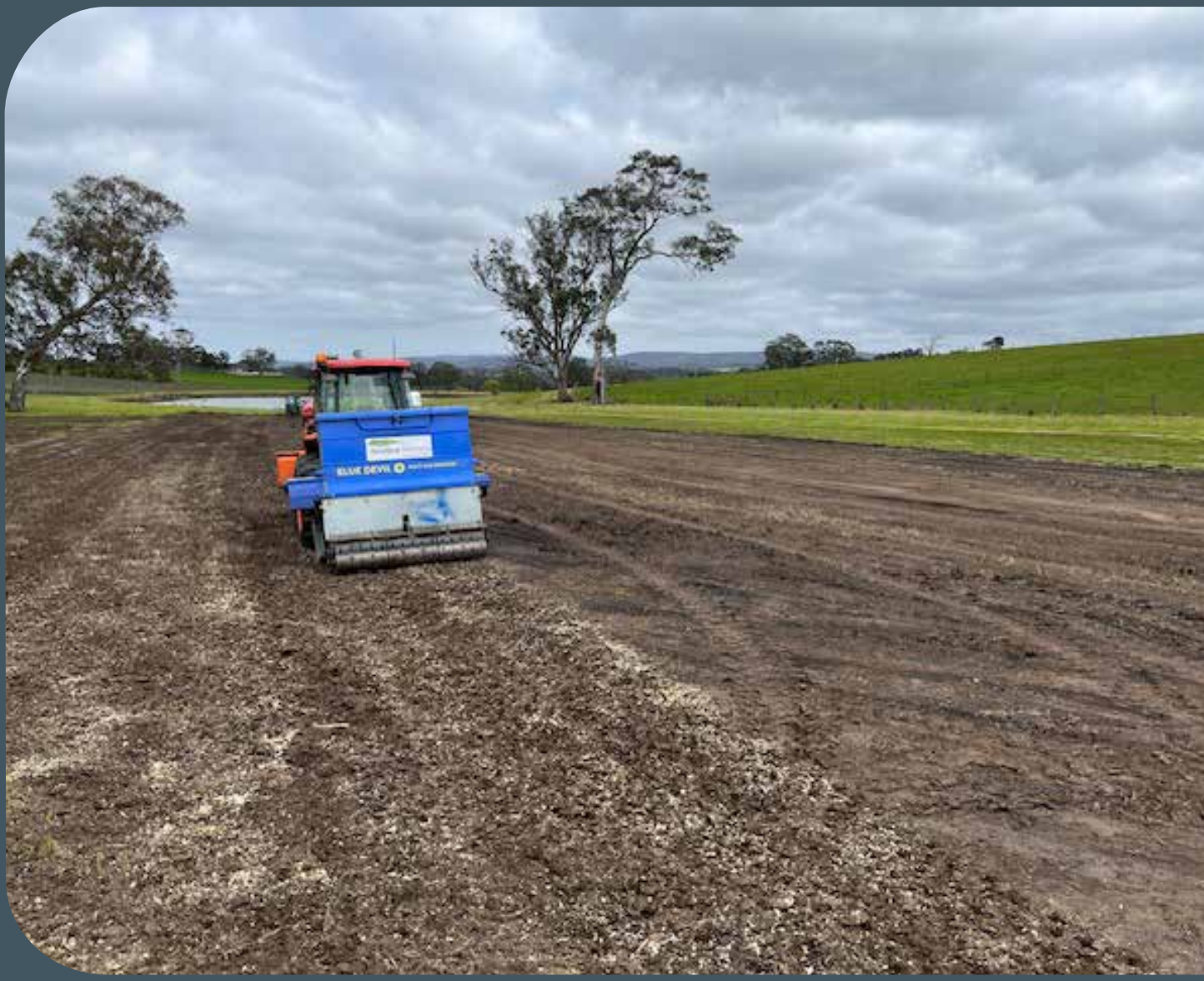
ECO VINEYARDS
GROWING RESILIENCE NATURALLY

CASE STUDY

CREATING A NATIVE KNEED WALLABY GRASS SEED PRODUCTION AREA AT TOLLEY VITICULTURE, ADELAIDE HILLS, SA

By Simon Tolley, Tolley Viticulture; Janet Klein and Dr Mary Retallack, Retallack Viticulture Pty Ltd



Wine Australia

retallack viticulture

CREATING A NATIVE GRASS SEED PRODUCTION AREA

Background

The property is located at 72 Drummond Rd Woodside. Local plant communities comprise *Eucalyptus leucoxylon* ssp. leucoxylon woodland over a grassy and herbaceous understorey and *Eucalyptus camaldulensis* var. camaldulensis, red gum woodland adjacent to waterways.

> ***"The EcoVineyards demonstration project has elevated my thinking beyond the normal vineyard practices to consider the benefits of the native environment to viticulture. While this requires a long term approach, I have been happy to tackle the challenge. I also believe in the promotional benefits it will bring to our brand and in responding to increasing consumer interest in sustainable practices."***
>
> **Simon Tolley, Tolley Viticulture**

Project description

We established a 0.7 ha *Rytidosperma geniculatum*, kneed wallaby grass trial source block adjacent to our Woodside vineyard. We chose wallaby grass given its once widespread occurrence across our area:

- its low growth habit (< 15 cm)
- relationship with mychorrizal fungi
- capacity to harvest native grass seed as a stacked enterprise
- its ability to attract beneficial insects
- provide habitat to attract biodiversity to the vineyard.

The associated benefit of lower soil moisture requirements compared to introduced cover crop species is also promising.

Establishing the trial source block is Step 1 of a number of steps leading to a greater vision of wallaby grass across our entire 40 ha properties. Once successful, we intend to use the seed from this trial block to increase the source block area to 1.5ha from which we plan to harvest the seed for use increasingly throughout both our vineyards, and to potentially sell.

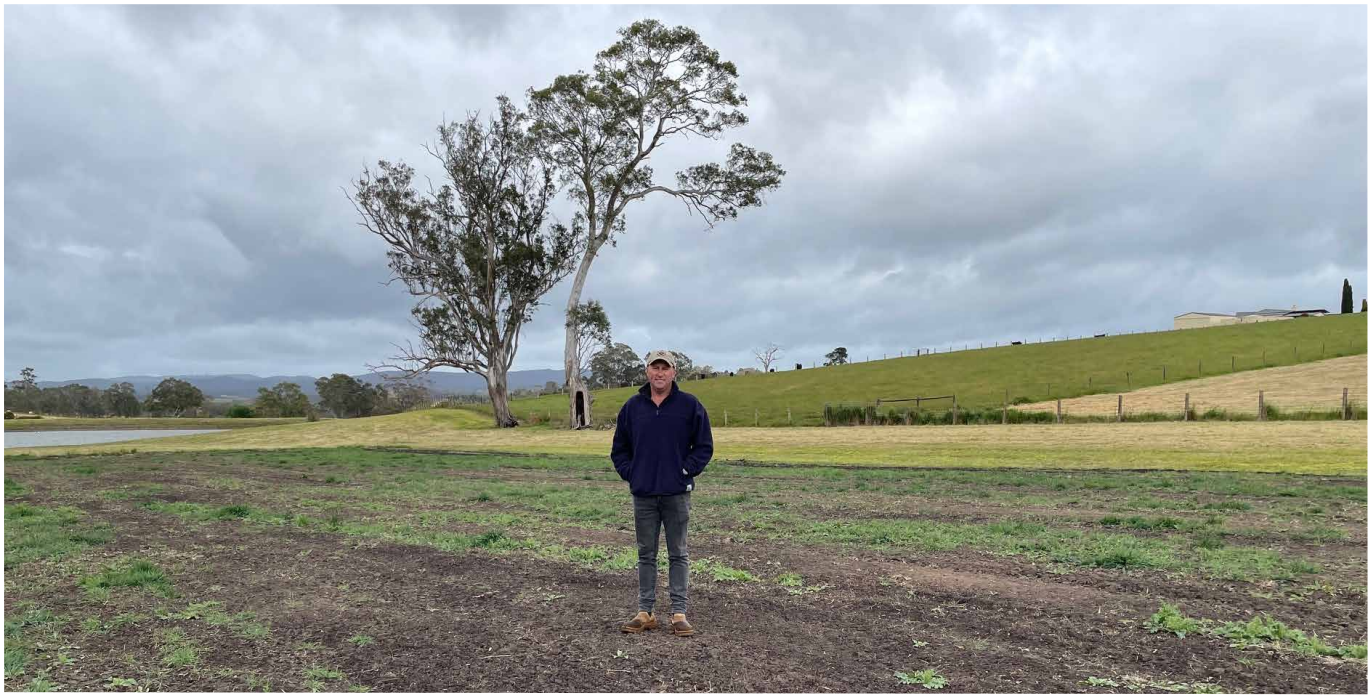


Figure 1: Simon Tolley standing in the 0.7 ha area prepared and seeded to wallaby grass 6 months post seeding. The image shows the weed pressure prior to weed-wipe management [Photo: Janet Klein].

What did you do and when?

- **June and July 2024:** We prepared the area by initially applying herbicide to remove weeds
- **14 September 2024:** We emulated the action of a moldboard plough by using a grader blade, to invert the weed seed bank
- **8 October 2024:** Seeding Natives, broadcast prepared area with wallaby grass seed using their specialised 'Blue Devil' native grass seeder
- **15 January 2025:** Due to the dry summer, the area remained relatively bare until mid-summer 2025. Herbicide was applied using a wick wiper by Seeding Natives, selecting the weed growth based on their height and leaving any small sensitive native grass seedlings unaffected
- **1 June 2025:** We will continue to spot spray the currently paths of weeds as needed and intend to make up our own wick wiper equipment for future requirements.

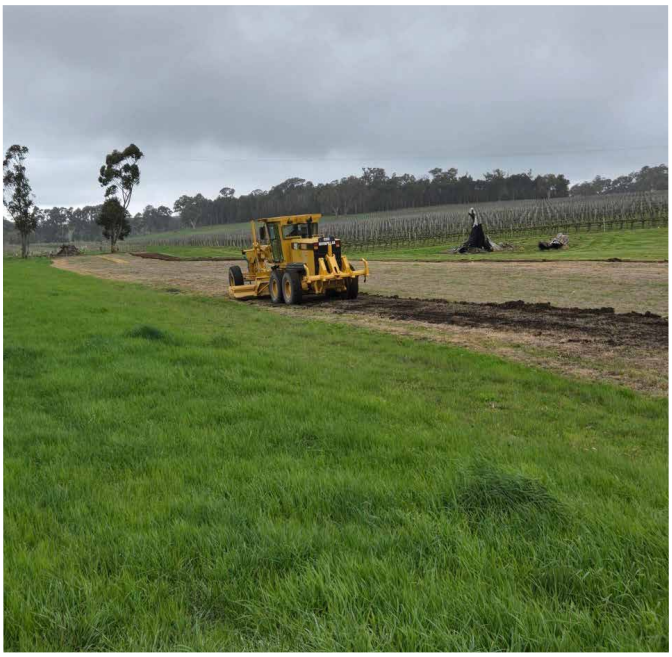


Figure 2: Soil preparation using a dozer to emulate the seed-burying moldboard plough action prior to seeding by Earthworks Tarra Civil [Photo: Simon Tolley].

Figure 3: Soil preparation using a dozer to emulate the seed-burying moldboard plough action prior to seeding by Earthworks Tarra Civil [Photo: Simon Tolley].

Figure 4: Seeding Natives broad-casting wallaby grass seed using the 'Blue Devil' unit [Photo: Seeding Natives].

If you changed your project, what was the reason for the change?

We originally planned to also establish wallaby grasses in the midrow of our cellar door vineyard also. The timing available for soil preparation within the timeframe of the EcoVineyard grant period and the considerations of future seed harvesting from within the vineyard led us to concentrate our efforts on establishing a source block only as the first step.

Figure 5: Wallaby grass seed – light, fluffy and with an awn which requires specialised broad cast equipment [Photo: Seeding Natives].

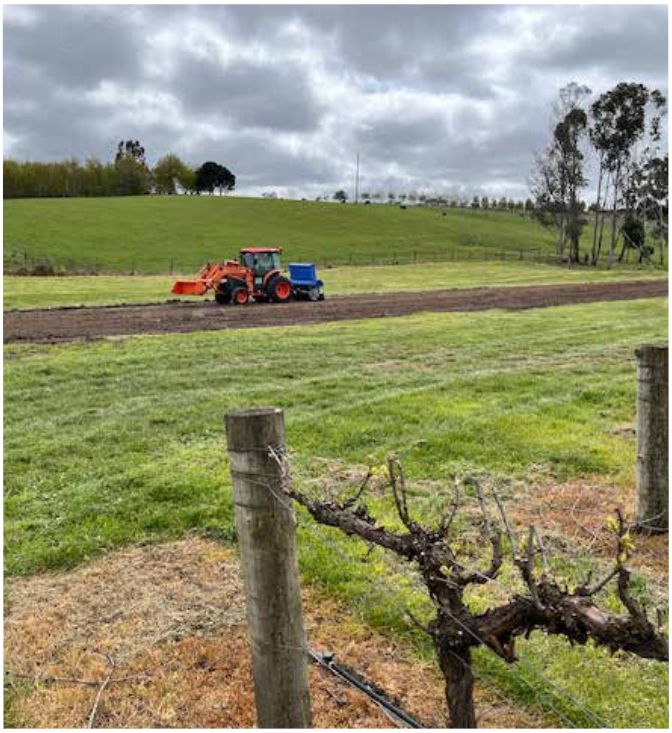


Figure 6: Seeding Natives broad-casting wallaby grass seed using the 'Blue Devil' unit [Photo: Seeding Natives].

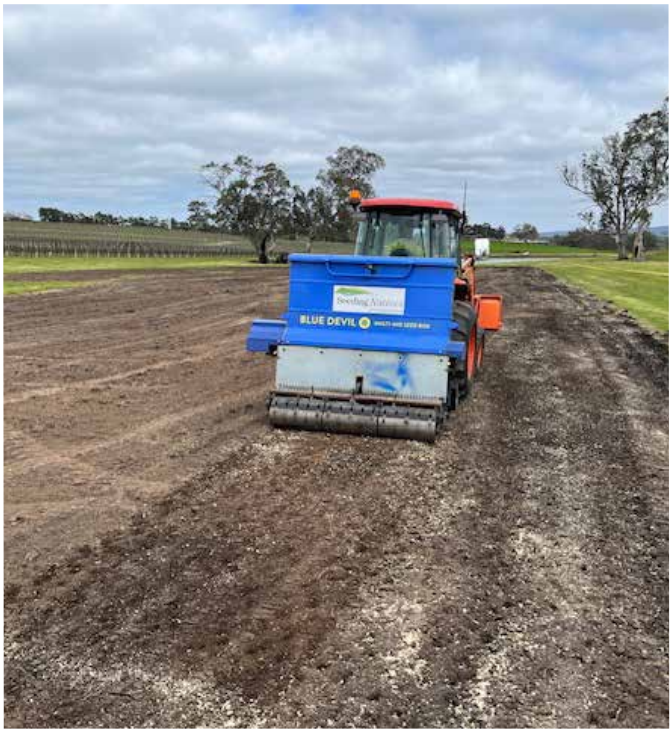


Figure 7: Seeding Natives broad-casting wallaby grass seed using the 'Blue Devil' unit [Photo: Seeding Natives].

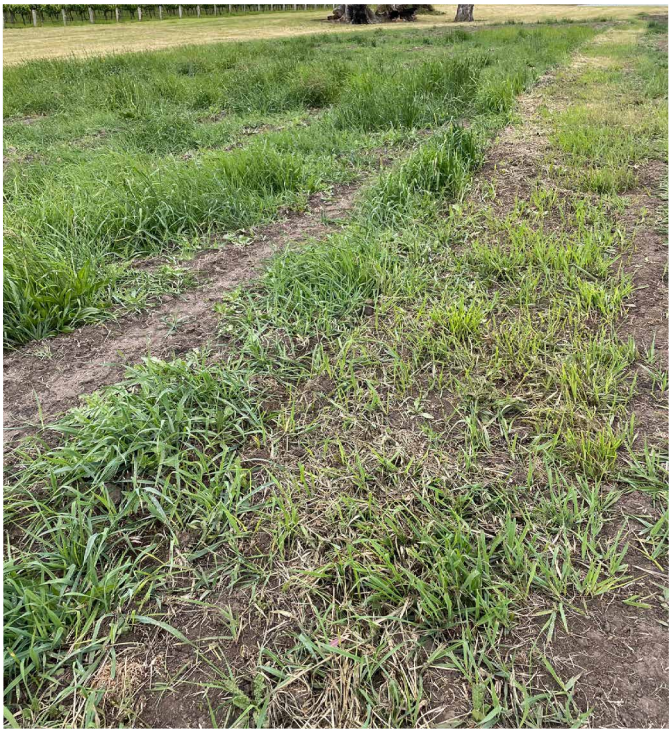


Figure 8: Weed growth 3 months post seeding with a clear line showing where ground preparation had occurred (on right) and where additional seed was spread on ground which had no herbicide or scraping (on left) [Photo. Janet Klein].

What worked well?

While we have only had a small number of wallaby grass plants germinate to date and so haven't as yet been able to assess the full success of the project, we feel our ability to follow the proven processes of soil preparation and application to a reasonably timely schedule worked well. Our ability to work closely with the EcoVineyards and Seeding Natives teams has also worked well.

Any pitfalls to avoid?

To date, our success has been hampered by the unprecedently poor seasonal rain. While this is difficult to predict, it is potentially a significant issue for the successful establishment of native grasses at scale.

Based on weed growth experienced since seeding the wallaby grass, we will likely adapt our soil preparation for future expansion of wallaby grass. We will likely extend the time allocated to reducing the weed seed bank across two seasons to encourage additional weed germination and subsequent herbicide rounds.

We also intend to construct our own weed-wiper implement given the success observed with Seeding Natives and our new understanding of the importance of post-seeding weed management.

Highlights

Our understanding of the behaviour of native grass seed to sit 'patiently' in the soil waiting for adequate soil moisture conditions, even over consecutive years, is a valuable insight we have gained from this project. And most importantly, as a result of this behaviour, we have a new level of respect for the need for vigilant soil preparation and weed management.

The small level of germination seen so far is encouraging. We expect to see consistent germination across the site following reasonable rainfall this winter and next.

Where to from here?

We intend to keep focussed on establishing wallaby grass across our properties, increasing from the current 0.5 ha area to ideally, the entire 40 ha property, replacing entirely, the conventional vineyard sward mix. We will be among the first vineyards in the Adelaide Hills to do so.

We have gained valuable insight in to the processes needed to establish native grasses at scale. And were initially inspired by learning of the insectary and biodiversity benefits grasses bring to viticulture.

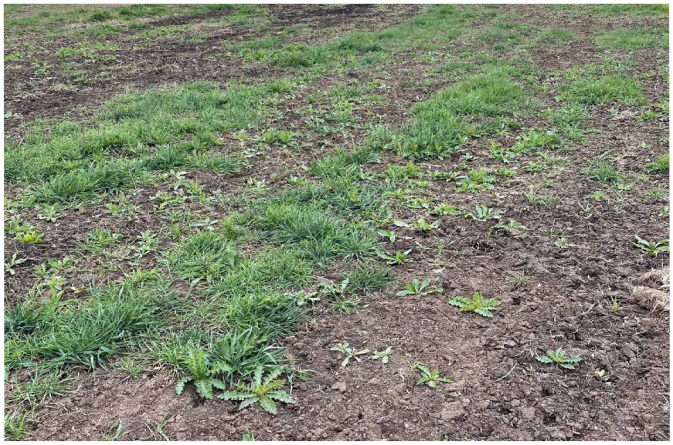


Figure 9: The site 6 months post seeding (May 2025) with reduced weed growth following weed-wipe treatment in January 2025 [Photo: Janet Klein].

Figure 10: The first wallaby grass seedlings visible, May 2025 [Photo: Janet Klein].

Expenses

Date	Item	EcoVineyards costs (ex GST)	Co-contribution (landholder contribution)	In-kind (time)
1/9/2024	Weed control	$300		2 hrs
12/09/2024	Impact Ecology - Microbat call analysis	$124		1 hrs
14/09/2024	Earthworks Tarra Civil		$1,500	
8/10/2024	Seeding wallaby grasses @ 20kg/ha – Seeding Natives	$3,484		
15/01/2025	Wick spray – Seeding Natives			
1/06/2025	Spot spray – Tolley Viticulture	$320		5 hrs
	EcoGrower contribution		$3,000	
	Total	**$3,928**	**$4,500**	**8 hours**

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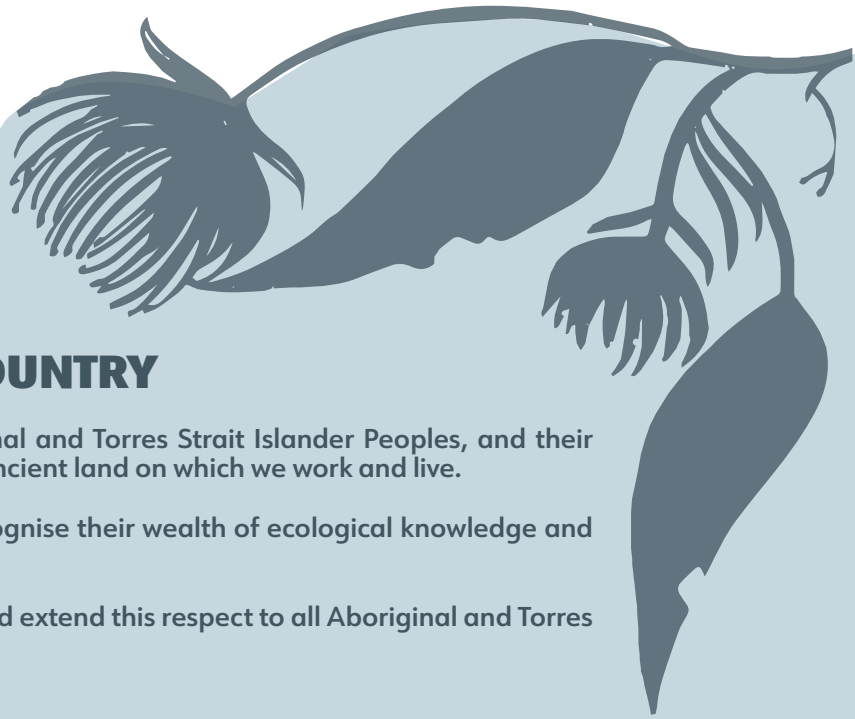
The National EcoVineyards Program is funded by Wine Australia with levies from Australia's grape growers and winemakers and matching funds from the Australian Government.



ACKNOWLEDGEMENT OF COUNTRY

EcoVineyards proudly acknowledges the Aboriginal and Torres Strait Islander Peoples, and their ongoing cultural and spiritual connection to this ancient land on which we work and live.

As the Traditional Custodians of this land, we recognise their wealth of ecological knowledge and the importance of caring for Country.

We pay our respects to elders past and present and extend this respect to all Aboriginal and Torres Strait Islander Peoples.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