The Future of Australian Grapevine Breeding

Current State

Wine Australia & CSIRO have collaborated on grapevine breeding since 1992. This research could play a critical role in ensuring the long-term sustainability of the Australian wine industry, from reducing the impact of major pests/ diseases (including downy and powdery mildew and phylloxera) to capturing new markets.

$168 MILLION is spent per year on downy & powdery mildew management

$1 BILLION is the estimated financial impact of phylloxera management in Victoria

We engaged the Australian wine supply chain to direct grapevine research that can help overcome current challenges and create opportunities. Through deeply understanding industry needs and requirements, we established a future vision for grapevine breeding in Australia...

1. Wine Australia, CSIRO and the industry collaborate through formal, ongoing communication channels and partnerships.

2. New grapevine materials are trialled in different regions, and their field performance and taste quality exceed expectations, providing growers & wineries with confidence to invest.

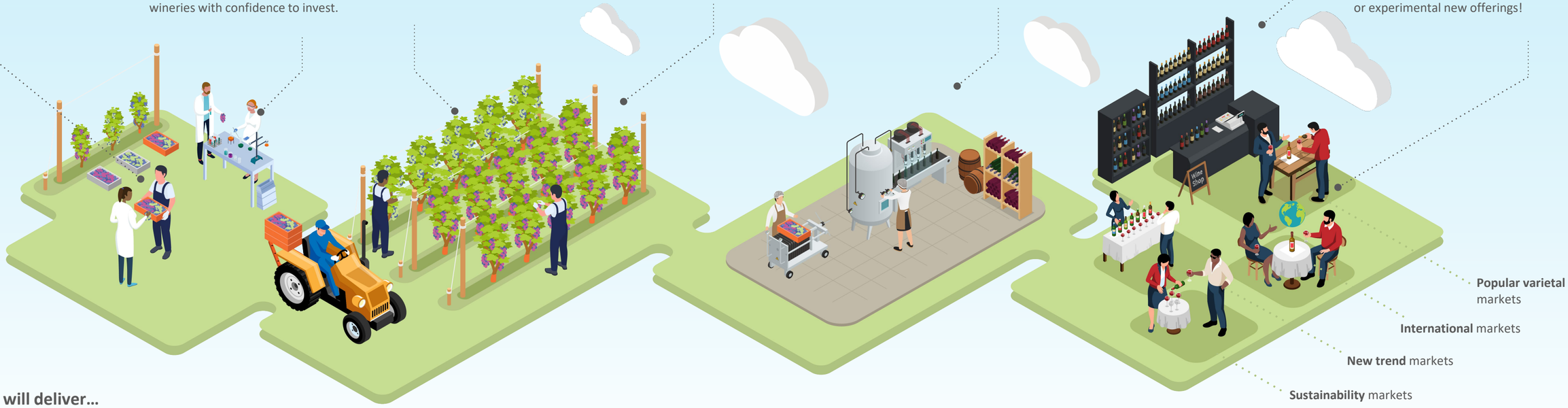
3. Through consultation with the propagation sector, new, high health grapevines are supplied on demand to industry via the propagation supply chain.

4. The impacts of pests, diseases, and climatic conditions are reduced, and vineyard inputs minimised.

5. Wineries have access to grapes that eliminate problematic processing traits, and/or have improved desirable traits.

6. There is greater security across the supply chain, leading to less market volatility and more profitability.

7. Consumers have access to wines that are more environmentally friendly (low carbon, low/no spray) and meet their purchasing needs; well-known varieties, or experimental new offerings!



The program will deliver...

Gene-edited clones

- The primary research focus area will be developing gene-edited* clones of popular varieties.
- Fungal disease resistance will be targeted in first generation clones, as well as flavour and wine quality taints.
- Future work is aimed at increasing tolerance to other biotic stresses, as well as improving production and consumer traits.

Approximate release date | 2032-2037, dependent on research success and licencing negotiations

** The specific gene editing process used here generates organsims which are not considered to be GMOs under current Australian regulations.*

New varieties

- Created through traditional crossing using multiple varieties.
- New varieties currently in field trials (Gen 1 and Gen 2) have resistance to mildew, unique flavour profiles, and are suited to Australian environments.
- Gen 1 and Gen 2 provide an opportunity for wineries to bring new products/varieties to market, and use grapes from new varieties for blending new wines.
- Import of innovative new varieties, developed internationally, provides further opportunity for the Australian wine sector.

Approximate limited release date Gen 1 | 2024-25
Approximate release date Gen 2 | 2030

Rootstocks

- Previous iterations of CSIRO rootstocks (C-series rootstocks) are more suitable for Australian regions than common commercial rootstocks and have improved resistance to phylloxera and/or root knot nematode.
- Next generation rootstocks with durable resistance to root knot nematode species and phylloxera genotypes are now in development, providing industry with a robust long-term management solution.

Approximate release date C-series | 2024
Approximate release date Next Gen | 2032

Industry consultation report by TGD™ for Wine Australia CSIRO