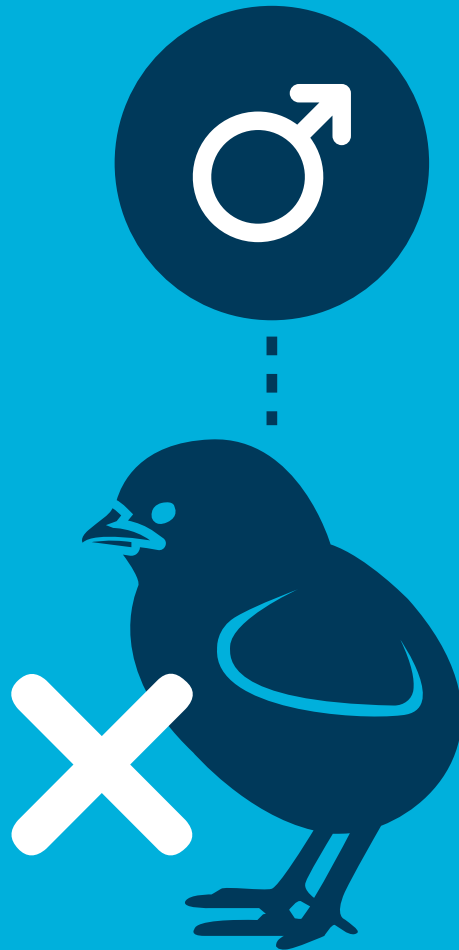


# SYNTHETIC BIOLOGY: Eliminating the culling of male chicks in the egg-laying industry

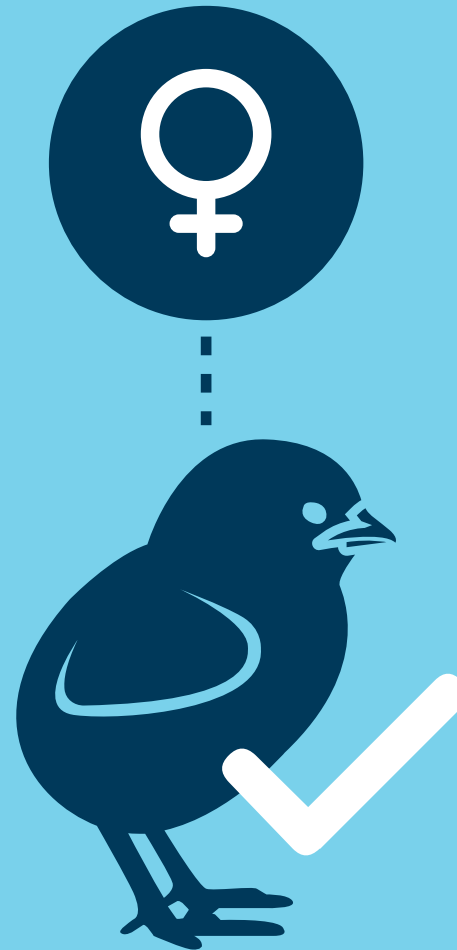


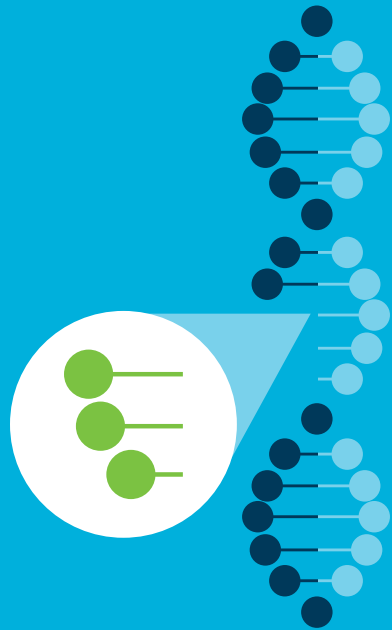
# In the egg-laying industry, day-old male chicks are culled soon after they are hatched and only female chicks are kept.

Growing male chicks is not sustainable for meat production and they cannot lay eggs

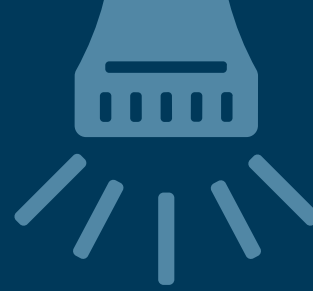


Female chicks will grow up to be suitable for egg-laying

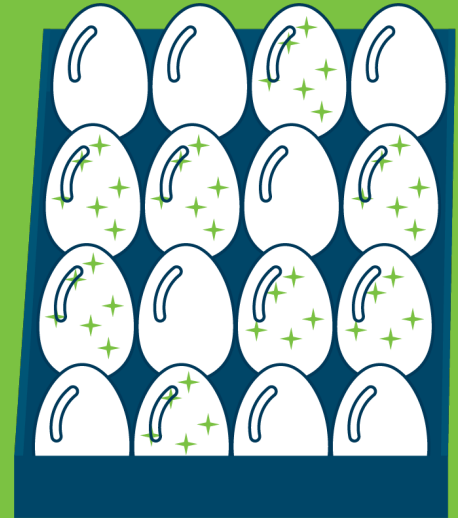




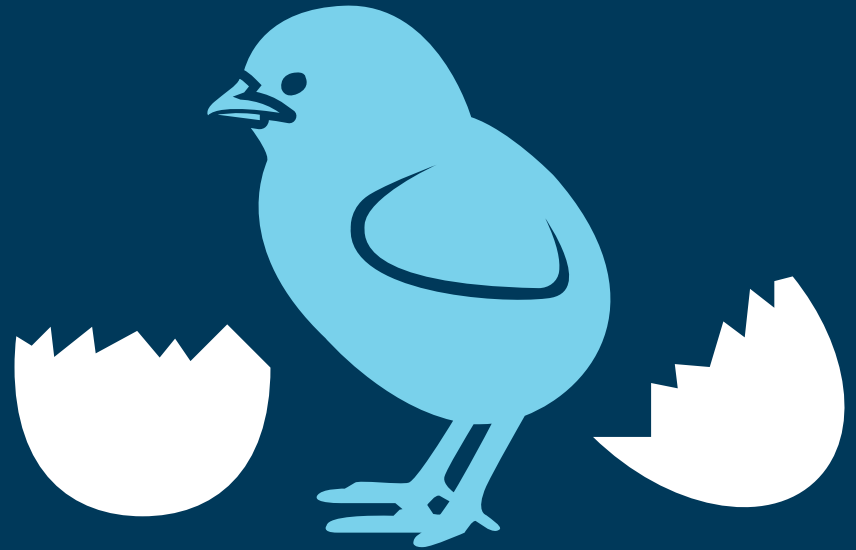
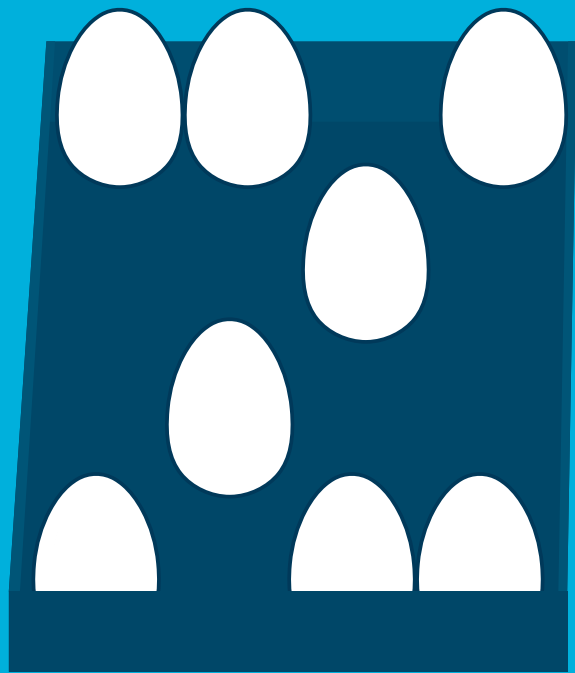
With new synthetic biology technology, it is possible to introduce a special fluorescent gene on the male chromosome.



This marker gene glows green when illuminated by UV-safe light.

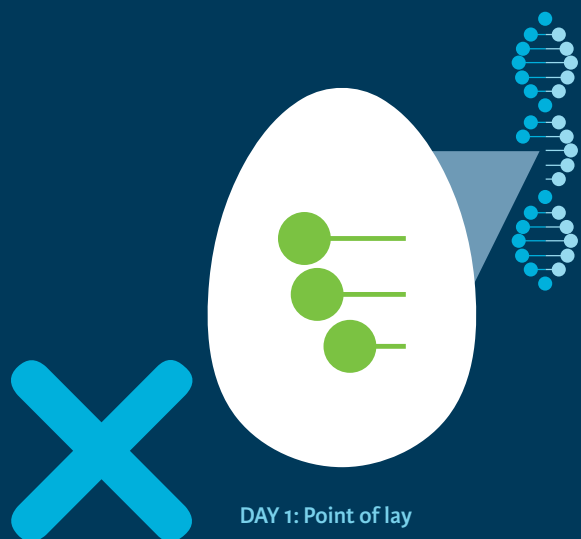


This would enable the identification and removal of male eggs as soon as they are laid, rather than waiting for male chicks to hatch.

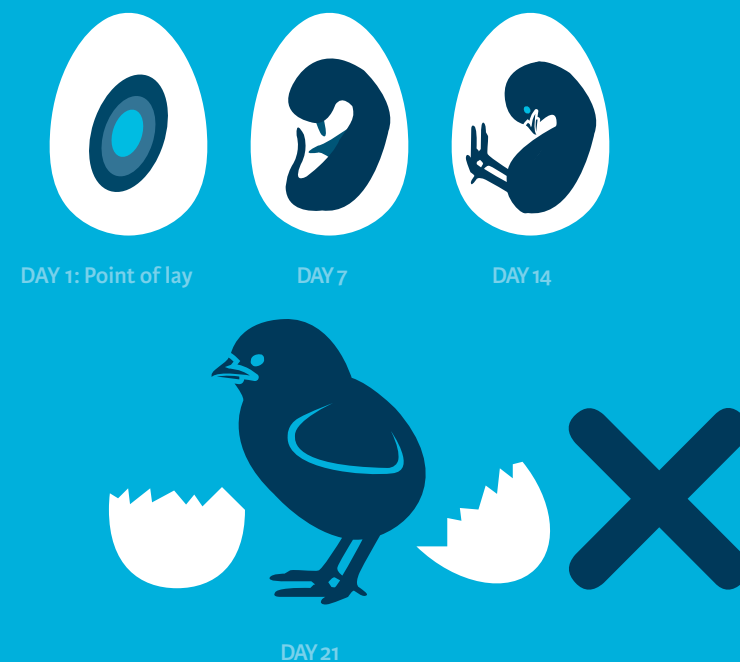


**The selected female eggs are incubated and hatched as usual (and do not carry the special genetic marker). The female chicks then go on to become egg-laying hens.**

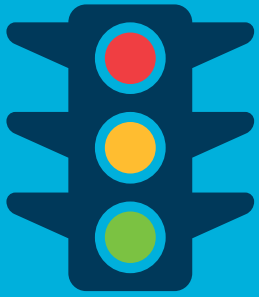
# It takes 21 days on average for an egg to hatch once incubation begins.



By introducing a green gene marker, the removal of male eggs could occur before incubation...



...rather than when they hatch, eliminating the culling of day-old male chicks.



## This technology would likely be approved and/or regulated by:

The Office of the Gene Technology Regulator

Food Standards Australia New Zealand

Together these regulatory bodies and standards would ensure that:

- The research and development occurs under controlled laboratory conditions, and
- Any environmental and health risks or concerns are properly reviewed and addressed.



## Australian residents like you may have the opportunity to ...

Take part in public events where scientists share their research on the technology

Participate in online or face-to-face discussions to ask questions and share your thoughts about the technology

Sign up to receive regular updates on the technology development

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