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Update on the Animal Biotechnology Regulatory Considerations in Asia-Oceania

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ANIMAL BIOTECHNOLOGY RESOURCES

2nd IWRAAAAB

August 18 - 21, 2014
Brasilia, Brazil

West Africa Workshop

July 23 - 25, 2018
Dakar, Senegal

4th IWRAAAAB

September 12 - 16, 2022
Sao Paulo, Brazil

2011

2014

2017

2018

2020

2022

2024

1st IWRAAAAB

September 5 - 9, 2011
Buenos Aires City, Argentina

3rd IWRAAAAB

June 26 - 30, 2017
Charlottesville, Virginia, USA

Virtual Series Workshop

September 08 -
December 08, 2020
Online

5th IWRAAAAB

August 19 - 22 &
26 - 28, 2024
Online

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GENE-EDITED ANIMAL DATABASE

Gene-Edited Animals for Agricultural Applications Database

Managed in collaboration with UC Davis, USA, this database features a compilation of animals developed through gene editing for agricultural applications.

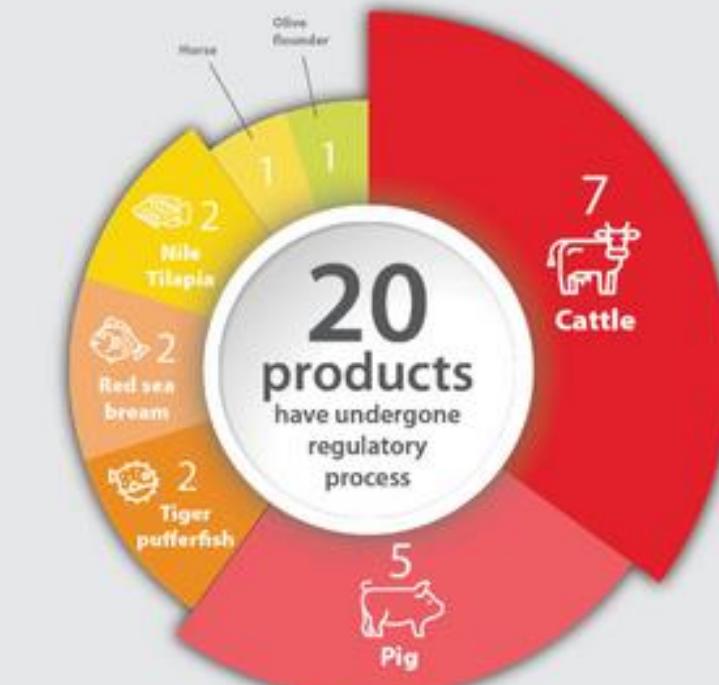
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Based on Van Eenennaam, AL. 2023. New Genomic Techniques (NGT) in animals and their agri/food/feed products. *ESFA Supporting Publications*, Vol. 20 (Issue 9). <https://doi.org/10.2903/sp.efsa.2023.EN-8311>

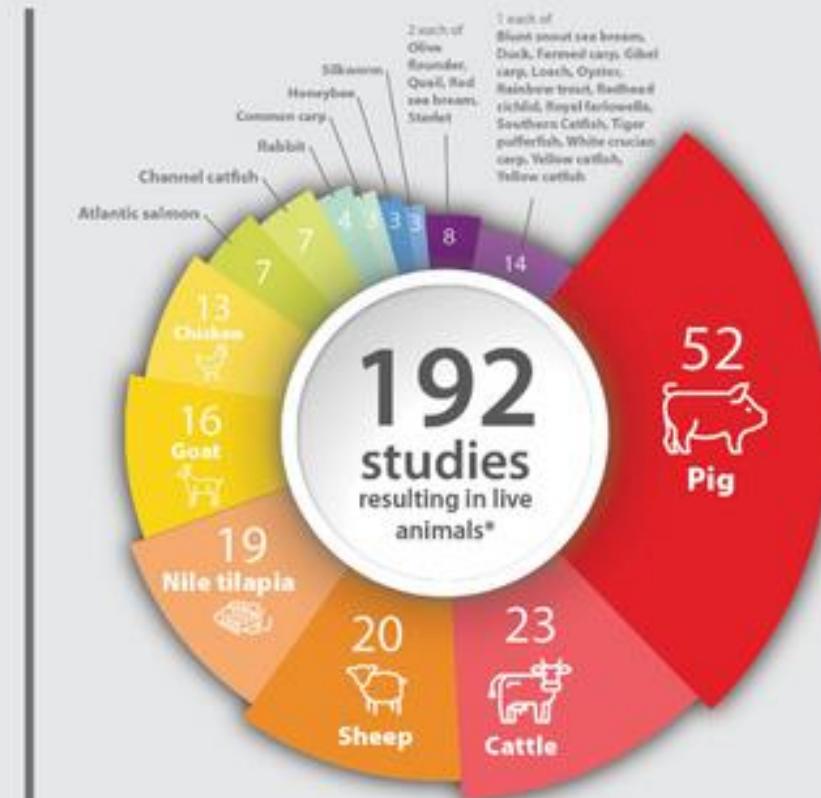


Gene-Edited Animals for Agricultural Applications



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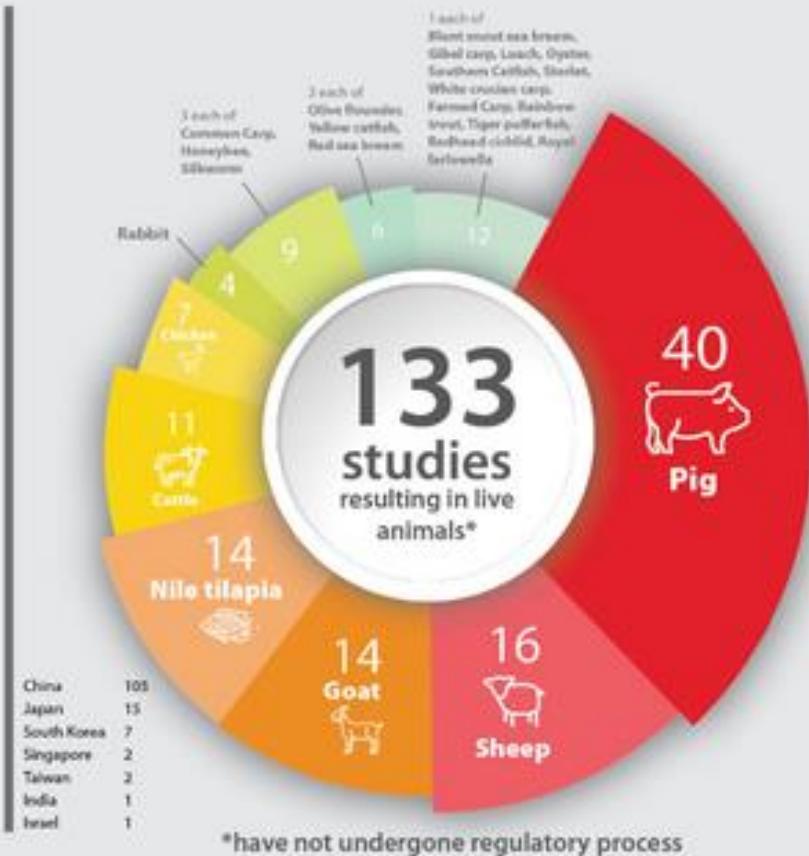
Data based on the scientific report: Van Eelenraam, AL, 2023. New Genomic Techniques (NGT) in animals and their agri/food/feed products. ESFA Supporting Publications, Vol. 20 (Issue 8). <https://doi.org/10.2903/sp.esfa.2023.EN-8311>



*have not undergone regulatory process

data as of Sept 2025

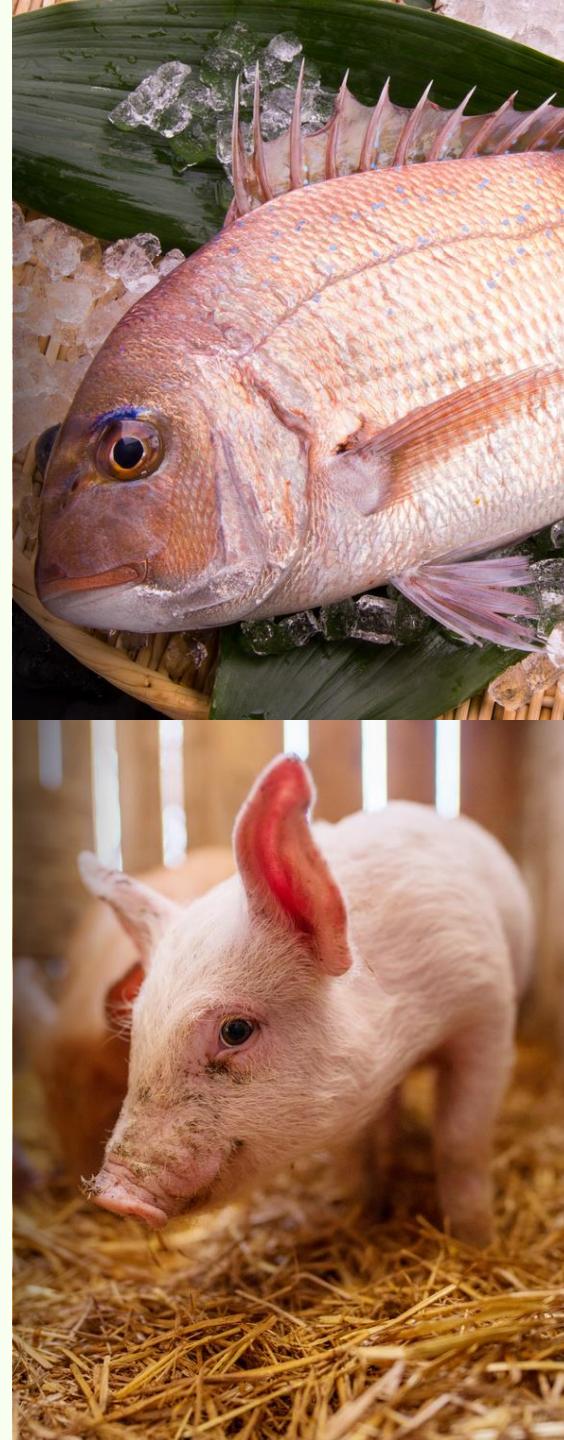
Gene-Edited Animals for Agricultural Applications in Asia



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Data based on the scientific report: Van Eemmen et al., 2023. New Genomic Techniques (NGT) in animals and their agri/food/feed products. ISAAA Supporting Publications, Vol. 29 (Issue 9). <https://doi.org/10.2903/spaifa.2023.EN-8311>.

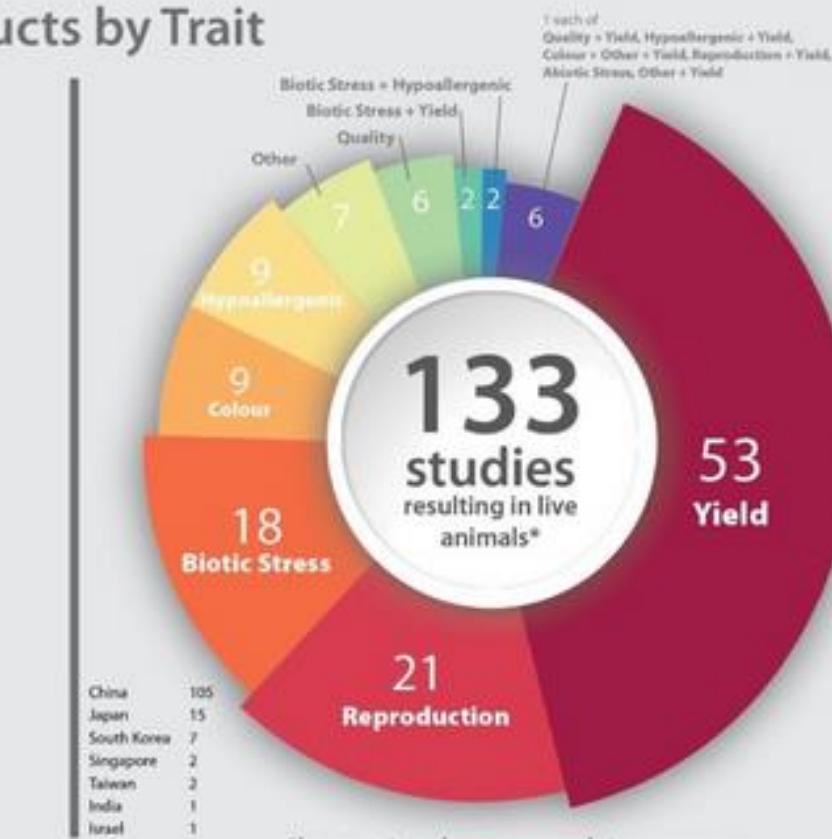
data as of Sept 2025





Gene-Edited Animals for Agricultural Applications in Asia

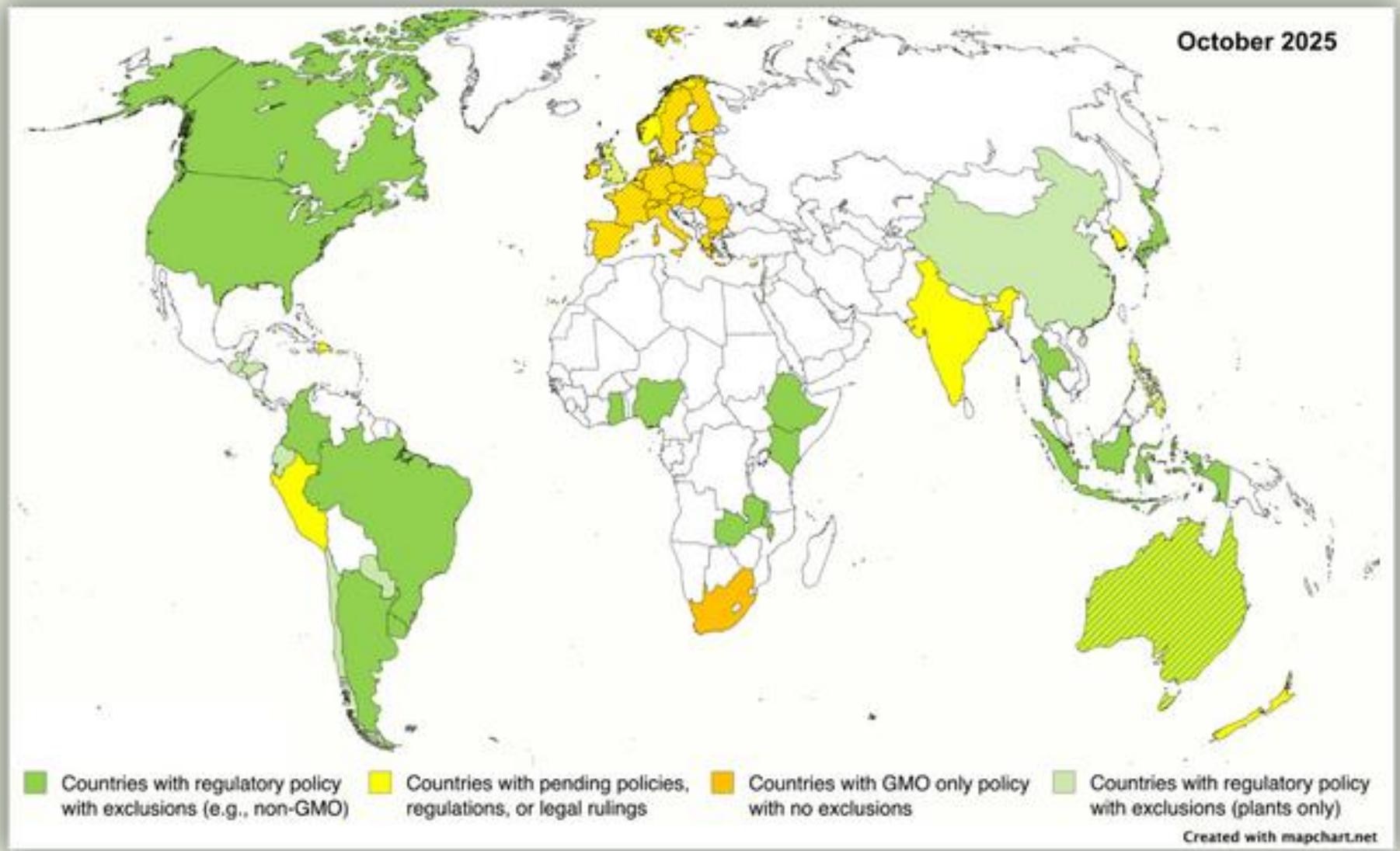
Products by Trait



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Data based on the scientific report: Van Eeuwennaam, AL. 2023. New Genomic Techniques (NGT) in animals and their agri/food/feed products. EEA Supporting Publications, Vol. 20 (Issue 9). <https://doi.org/10.2903/sp-efha.2023.EN-8311>

data as of Sept 2023



Global Approaches to Regulation of Gene-Edited (GnEd) Animals

and whether GnEd Food Animal Applications have been received

Category defining questions	Categories of products of precision breeding techniques				Null segregant
Could be obtained via conventional cross-breeding or via mutagenesis	Yes	Yes	Yes	No	Yes
Nucleic acid template	No	Short	Long	Yes	N/A
“Foreign” DNA (synthetic or transgenic)	No	No	No	Yes	N/A
	No nucleic acid template	Short ^a nucleic acid template	Long nucleic acid template	Foreign DNA Synthetic/ Transgenic	Null Segregant Offspring
	Not GMO	Not GMO	Likely not GMO	GMO	Not GMO

^aNo more than 20 genetic modifications.

Oceania

Country	Policy	Nucleic Acid Templates		
		None	Short ^a	Long
Japan	MAFF - Environment	Not GMO	GMO	GMO
	MAFF - Animal Products	Not GMO	Likely not GMO	Likely GMO
	Ministry of Health, Labor, and Welfare	Not GMO	Likely not GMO	Likely GMO
Australia	Environmental release	Not GMO	GMO	GMO
Australia/ New Zealand	Proposal P0155 (FSANZ)	Not GMO	Likely not GMO	Likely not GMO
New Zealand	Current legislation	GMO	GMO	GMO
	Proposed legislation	Not GMO	Risk-tiering system proposed	

^aNo more than 20 genetic modifications.

Asia

Country	Policy	Nucleic Acid Templates		
		None	Short ^a	Long
Indonesia	Regulation No. 19/2024	Not GMO	Not GMO	Likely not GMO
Thailand	B.E. 2567 (2024)	Not GMO	Not GMO	Likely not GMO
Philippines	Technical Working Group (TWG) convened for technical, legal, economic, and socio-cultural considerations	Not GMO	Not GMO	Likely not GMO
China & Singapore	Policies in place for GnEd plants and animal GMO regulations are not yet in place	Not GMO	Likely not GMO	Likely not GMO
Vietnam	Technical discussions	Not GMO	Likely not GMO	Likely not GMO

^aNo more than 20 genetic modifications.

Asia and Oceania Considerations for Gene Edited Animals



Bangladesh, India, and South Korea are starting discussions on GM and GnEd animals.



Decisions for commercialization are made in Japan only.



Gene-edited animals with foreign DNA are considered GMOs and should undergo risk assessment.



Null Segregant Offspring are considered NOT GMO.

Challenges in Research and Regulations of Animal Gene Editing



GM regulations in plants and animals are not in place yet.



Research and regulatory expertise are lacking, needs networking and partnership.



GM research and product acceptance are still a problem.



Laboratory infrastructures and containment facilities need improvement.



Changing political will as government executives change.



Lack of appreciation on the benefits of science innovations.



Thank you!

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