



# Enhancing Agri-Food Tech Innovation through Intellectual Property Rights in Singapore

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**SOUTH-EAST ASIA  
IP SME HELPDESK**



# Speaker's Bio

**Name:** Chan Wai Yeng

**Firm:** GHOWS LLC

**Location:** Singapore

Wai Yeng has over 14 years of experience in Intellectual Property. Prior to joining Ghows, Wai Yeng worked in the IP department of a number of law firms in Singapore and acquired significant experience in patent work including drafting of patent specifications, patent registrations and advising clients in relation to patent infringement and freedom to operate.

She advises businesses on both obtaining and enforcing IP rights and partners with incubators, accelerators as well as government agencies to provide technology-focused IP strategies, particularly in the area of patents.

Wai Yeng has also accumulated extensive experience in building and protecting brands in emerging markets. In a previous role, she headed the IP practice of the largest foreign law firm in Myanmar that supported rights owners in relation to the enforcement, border control, due diligence and protection of trade mark rights.



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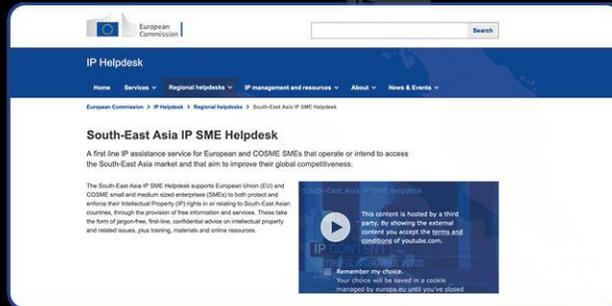
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## IP business tools



## Publications



# Agenda

- 1. Snapshot of Agri-Food Tech innovation in Singapore**
- 2. IP Fundamentals**
  - *What is IP?*
  - *Relevance of IP to businesses*
- 3. IP Considerations before entering a new market**
- 4. Case Study**
- 5. Takeaways**



# 1. Snapshot of Agri-Food Tech innovation in Singapore

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IP SME HELPDESK**

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[www.sea-iphelpdesk.eu](http://www.sea-iphelpdesk.eu)

# SFS R&D Programme 2.0 'Seed' Grant

Launched on 2 Oct 2023. Grant call with focus on four R&D domains

## AquaPolis (Aquaculture)



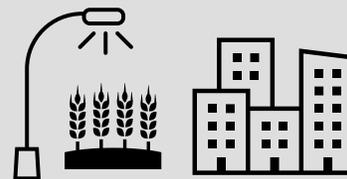
## Food Safety



## Future Foods



## Sustainable Urban Agriculture



<https://www.sfa.gov.sg/food-farming/singapore-food-story/singapore-food-story-r-d-grant-call>

# Agritech startup landscape (SEA)

**01 Urban Farming**

**Infrastructure**

+ 22 more

**IoT-based Farming Systems**

+ 39 more

**IoT-based Farming Systems**

**04 Future Foods**

**Insect**

**Plant-based**

**Cellular Agriculture**

**Meal Replacement**

**Algae**

# Recent Agri-food tech news

THE STRAITS TIMES APR 26, 2023



Why it's timely, critical for SMEs to go digital

Read the story on StraitsTimes.com

Victoria Beckham breaks silence on husband David Beckham's alleged affair in...



'Worst experience': Johor Crown Prince recounts Bangkok's Siam Paragon...



Singapore Let the journey of Skyscanner

Dutch firm's vertical mega farm to produce up to 500 tonnes of leafy greens in Singapore



THE STRAITS TIMES JUL 31, 2023

TRUE CRIMES OF ASIA – the dark side of societies

to 'mitigate environmental impact' of 2030 World Cup



Bangkok's Siam Paragon shooting: Chinese killed in attack was hiding in restroo...



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Barramundi Group stops farming sea bass in S'pore due to deadly virus outbreak



South China Morning Post AUG 9, 2022

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LIGHT UP

Country Reports

**OTS Holdings bridges plant-based meat frontier with ANEW brand**

- One of Singapore's biggest manufacturers of chilled, frozen, dried and canned meat products, OTS now eyes the global market for its 100 per cent plant-based proteins

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Published: 11:20am, 9 Aug, 2022 -

Why you can trust SCMP



# Recent Agri-food tech news

**THE STRAITS TIMES**

APR 7, 2023

Singapore to approve 16 species of insects like crickets and grasshoppers to be sold as food



**THE STRAITS TIMES**

SEP 2, 2023

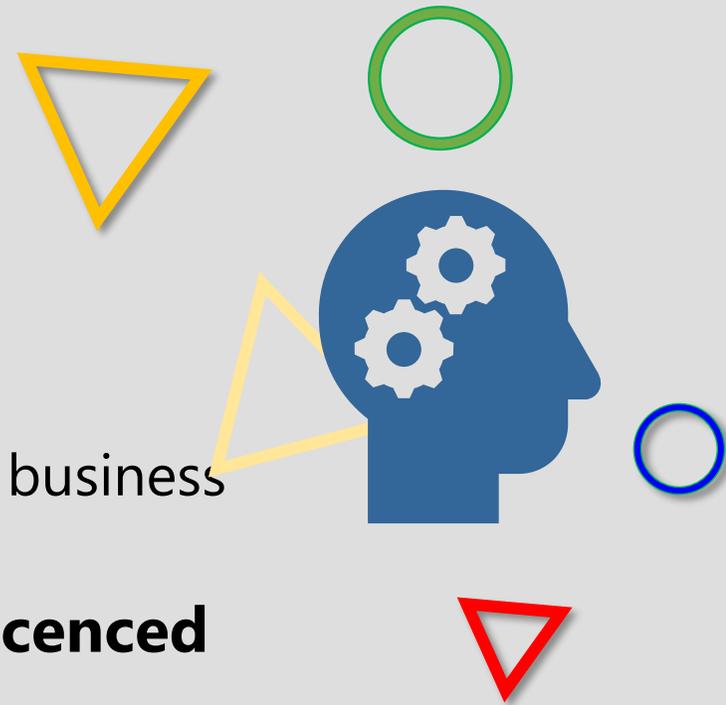
Singapore Food Agency unveils options to boost output under Lim Chu Kang masterplan



## 2. IP Fundamentals

# IP Fundamentals

- **What is IP?**
  - A product of the human mind/ intellect/ skill
  - It comes in many forms, technical innovation, trading logo, business know-how, dance sequence, new plant variety, song lyrics
- **IP (and their rights) can be valued, sold, transferred, licenced**
- **Main categories of IP**
  - Registrable IP, non-registrable IP



# Relevance of IP to a business

## Examples of tangible assets



Building & equipment



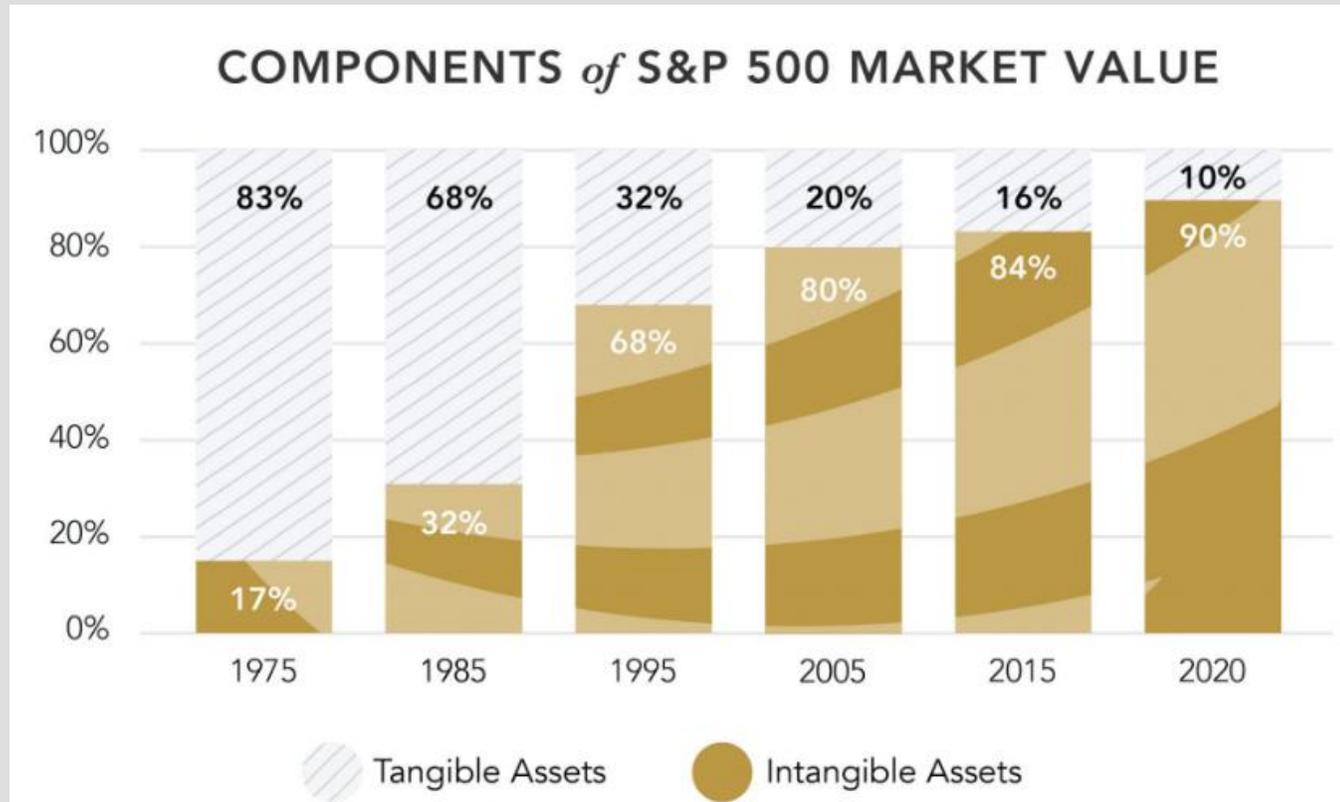
Cash & bonds



Inventory



Land



## Examples of intangible assets



Patents



Brand value



Customer data



Regulatory approval

Source: Ocean Tomo - Intangible Market Value Study 2020

<https://oceantomo.com/intangible-asset-market-value-study>

# AgriFood x IP

Geographical indications

Plant Breeders' rights

Trademarks

Designs

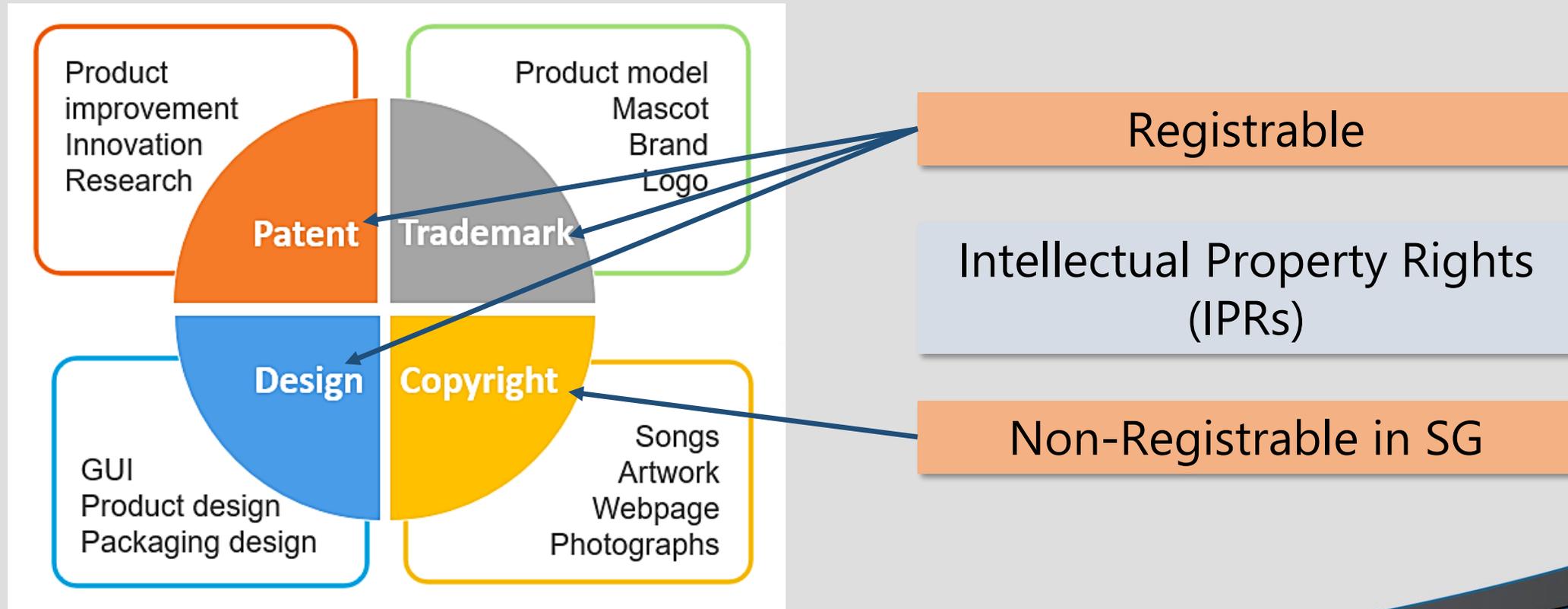
Patents

Copyright

Trade Secrets



# Key Intellectual Property Rights (IPR)



# Other Agri-Food IPR

## Geographical indications



## Plant Breeders' rights



# Relevance of IP to a business

## What does it mean to you?

IP that is proprietary to you – IP protected by **trademarks, patents, designs** and other **registrable IP rights** must be registered at the relevant IP offices, before they can be enforced against third parties for unauthorised use.

**It is your sole responsibility to register, maintain and enforce your IPRs in all the territories that IP protection is needed**



# 3. IP Considerations before entering a new market

# IP Considerations before entering a new market

## Your competitors

- What services and products are they offering?
- Which brands have been trademarked?
- What designs/technologies have been protected through IP registrations by these competitors?
- What designs/technologies have not been protected by them?

## Have you taken steps to secure/protect your IP in the new market

- Have you filed trademarks for your brand/company name?
- Are your designs and technologies protected? How are they being protected?

# Scenario 1 – introducing a new brand into SEA



PH

- currently distributed in the EU market
- vegan food product range

**VEGO**

VN

**VEG-O!**

VN



PH

**Vigo Max**

MY

**Veego**

MY, TH, ID, SG

# Checking the products/services listed in the trademark registration

The logo for 'Veego' is displayed in a large, black, sans-serif font on a white rectangular background.

## Specification of Goods or Services

S/N	Class No.	Goods/Services	Class Status	Class Expiry Date
1	29	Soya-based preparations; Eggs; Edible oils and fats; Vegetable-based snack foods; Prepared meals consisting principally of vegetables; Dairy products; Edible seeds; Edible nuts; Dairy-based beverages; Edible oils and fats; Vegetable-based snack foods; Prepared meals consisting principally of vegetables; Soya-based preparations; Processed legumes.	Registered	01/07/2030
2	30	Carbohydrate based preparations for foods; Bakery products; Snack foods prepared from grains; Noodle-based prepared meals; Rice-based prepared meals; Vinegar, sauces and other condiments; Rice; Noodles.	Registered	01/07/2030

# Scenario 2 – EU (irrigation tech) company expanding into the Singapore market

Search Result for  
"irrigation"

Show  entries [Track Selected IP](#) [Export](#)

<input type="checkbox"/>	S/N	IP Type	Application No	Image	Title of Invention	International Patent Classification No.	Application Status	Filing Date	Lodgement Date	Applicant / Proprietor Name	Case No.	Abstract / Description / Claims
<input type="checkbox"/>	1	Patent	10202114125R	-	AN IRRIGATION SYSTEM AND METHOD	A01G 25/16; G05B 19/00	Pending (Published)	20/12/2021	20/12/2021	PANASONIC APPLIANCES R&D CENTER SINGAPORE	-	-
<input type="checkbox"/>	2	Patent	11202250964V	-	IRRIGATION SYSTEM FOR A VERTICAL GROWTH TOWER	A01G 9/24; A01G 31/06	Pending (Published)	09/02/2021	30/06/2022	INTELLIGENT GROWTH SOLUTIONS LIMITED	-	-
<input type="checkbox"/>	3	Patent	10201900732X	-	APPARATUS FOR GROWING PLANTS, AND IRRIGATION APPARATUS OF THE APPARATUS FOR GROWING PLANTS	-	Pending (Published)	25/01/2019	25/01/2019	Agrilution Systems GmbH	-	-
<input type="checkbox"/>	4	Patent	11202004099U	-	VERTICALLY MOUNTED CROPPING AND IRRIGATION SYSTEM	A01G 9/02; A01G 9/00; A01G 9/08; A01G 9/12	Pending (Published)	06/11/2018	05/05/2020	AGSTACK, INC.	-	-
<input type="checkbox"/>	5	Patent	11202000812P	-	SUBSTERRANEAN IRRIGATION SYSTEM.	A01G 25/06	Patent In Force	27/07/2018	29/01/2020	ELEMENTAL ENGINEERING AG	-	-

# Freedom to operate searches - patents

Secretion of heme-containing polypeptides filed by Impossible Foods Inc.

Countries that patents have been filed – CN, EP, PL, IT, RS, ES, SI, HU, DK, PT

**Technology is free to use in South-East Asia (and other countries)**

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
19 March 2015 (19.03.2015)

WIPO | PCT

(10) International Publication Number  
WO 2015/038796 A2

(51) International Patent Classification: Not classified

(21) International Application Number: PCT/US2014/055227

(22) International Filing Date: 11 September 2014 (11.09.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
61/876,676 11 September 2013 (11.09.2013) US  
61/908,689 25 November 2013 (25.11.2013) US

(71) Applicant: IMPOSSIBLE FOODS INC. [US/US]; 525 Chesapeake Drive, Redwood City, California 94063 (US).

(72) Inventors: FRASER, Rachel; 3653 24th Street Apt. 2, San Francisco, California 94110 (US). DAVIS, Simon Christopher; 104 Winfield Street, San Francisco, California 94110 (US). BROWN, Patrick O'Rielly; 76 Peter Coutts Circle, Stanford, California 94305 (US).

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

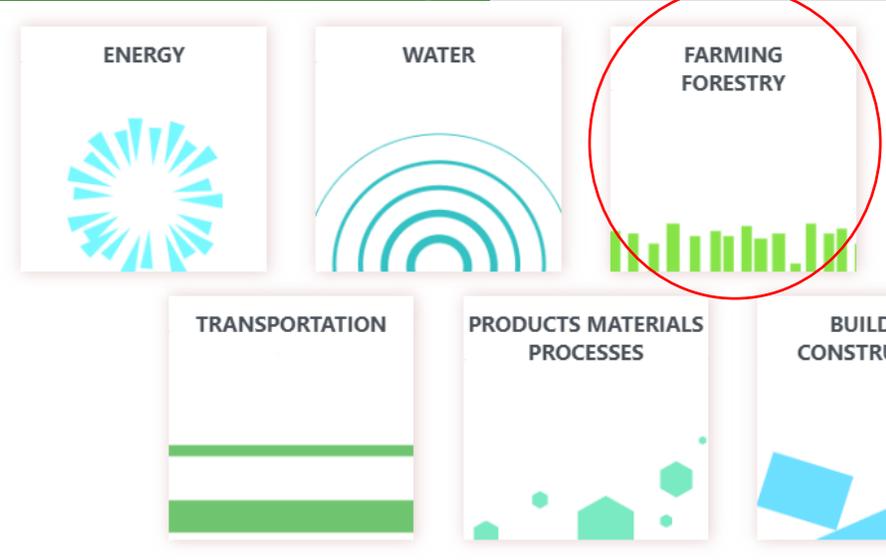
Published: — without international search report and to be renubished

(54) Title: SECRETION OF HEME-CONTAINING POLYPEPTIDES

(57) Abstract: This disclosure provides for methods and compositions for the expression and secretion of heme-containing polypeptides.

# IP Marketplaces

**WIPO | GREEN**  
The Marketplace  
for Sustainable Technology



<https://wipogreen.wipo.int/>



### Submit a technology

Your account has not been verified or you are under admin revision state, your submission will be available as draft until admin approval

Please make sure that you do not inadvertently disclose any confidential business, information that you should keep secret

Use this form to upload your technology for display in the database. Increase your visibility by including as much information as possible. Upload pictures, drawings, company logos, and even videos if you have them. However, uploading does not provide any intellectual property rights protection, so please make sure that you do not inadvertently disclose any confidential business information that you should keep secret. Once such information has been shared, it may not be possible to prevent its use by third parties. Moreover, your submission may constitute online disclosure, thus making it impossible to obtain a patent in the future unless you have already applied for or secured patent protection for your invention. You will find more information about trade secrets here: <https://www.wipo.int/tradesecrets/en/>

### Contact information (if different from person uploading)

Are you uploading technologies on the behalf on another entity that would want to be contacted directly for business opportunities? If yes, please fill in with contact information of the technological owner

Yes  No

### Technology Features

Title \*  Maximum 1000 characters

from the pyrolysis process is liqued through a condensation process. The resulting liquid smoke or wood vineg...

TRL3-4    TRL5-6    TRL7    TRL8    TRL9

Uploaded by	ade sri rahayu
Type	Technology
Source	User uploads
Published	Aug 3, 2021
Developed in	Indonesia

ID 101323

# IP Marketplaces



## TECH OFFERS

TechInnovation Tech Offers

Tech Needs

Innovation Challenges

International Co-innovation Funding Calls

Tech Experts

Tech Bundles

Keywords [Reset](#)

Technology Readiness Level (TRL)

All TRL

Categories

Food Security

Locations

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Create your free account to post Tech Offers or Tech Needs on our Innovation Marketplace, and receive our weekly Tech Alerts and newsletters.



Functional Instant Noodles Fortified with Shrimp Shells



Egg Alternative from Rice Bran Protein



Nano Delivery Technology That Increases Pest Management Efficiency in Food Crops



<https://www.ipi-singapore.org/>

# Protecting your IP in Singapore

## Registration at Intellectual Property Office of Singapore (IPOS)

## Registration not available

### Trademark

- \*S\$380 per class
- Reduction to \*S\$280 for pre-approved list of goods/ services
- Continual protection, subject to renewal every 10 years

Approx 10 - 12 months to registration

### Patent

- Filing fee \*S\$170
- Examination fee \*S\$1,420 - S\$2,050
- Grant fee from \*S\$210
- Valid for 20 years, subject to payment of annual renewal fee

Typically 2.5 - 3.5 yrs but can be shortened to 6 months to grant

### Registered Designs

- \*S\$200 per design
- Valid for 15 years subject to payment of renewal fees

Approx 2 - 3 months to registration

### Copyright

- Copyright subsists automatically for original work without registration
- Author's lifetime + 70 years

### Confidential Information / Trade Secrets

- Establish security controls (physical and tech) & policy
- NDAs, marking of confidential documents, restriction of access
- Contractual obligations
- As long as secrecy is maintained

*\*Fees payable to IP Office. Does not include fee to engage IP professional*

# 4. Case Study

# Cultivated meat industry in Singapore

## Esco Aster Receives Food Processing License to Manufacture Cell-Based Cultivated Meat from Singapore Authorities

September 15, 2021



The signing of the MOU between Aleph Farms and ESCO Aster was witnessed by the Ambassador of Israel to Singapore, HE Sagi Karni, and the Non-Resident Ambassador of Singapore to Israel and Chairman of the Singapore Food Agency, HE Lim Chuan Poh. Image credit: Aleph Farms

has signed a memo of understanding with Eat Just to make cultivated meat.

### Mosa

### Aleph Farms strikes deals in Singapore and Israel to advance

In 2021, Esco Aster had the [world's first licensed commercial facility](#) in Ayer Rajah Crescent to produce cell-cultured meat for Eat Just's Good Meat division.

A spokesman for Esco Aster said the company is working to get the Changi plant certified by the Singapore Food Agency (SFA).

It now produces small batches of cultivated chicken cells from an 80 sq m space in Ayer Rajah Crescent to help make chicken nuggets, fillets and satay skewers for Good Meat.

### Meatable announces partnership with

to become  
icer in

*Partnership with Esco Aster marks Mosa Meat's global expansion as the company continues to scale production and works to achieve regulatory clearance in Europe and abroad*

# Cultivated meat industry in Singapore

## IP portfolio of Aleph Farms in Singapore

### Patents

SG 11**2019**14083T (CULTURED MEAT)  
SG 11**2023**05713P (3D-PRINTABLE SCAFFOLD)  
SG 11**2023**03264U (SCAFFOLD SYSTEM)  
SG 11**2023**03262Q (EDIBLE PROTEIN)

### Trademarks



ALEPH FARMS



### Copyright, trade secrets

# 5. Takeaways

# Key takeaways



- Multiple forms of IP rights are available to Agri-food tech businesses.
- Speak to an IP professional during early stages of your business, and especially before entering any new markets.
- Are there existing 3<sup>rd</sup> party IP rights that can obstruct your business such as blocking patents?
- Determine which IP rights are relevant for protection in SEA and register them as soon as practicable.
- Monitor for infringement once applications have been filed.

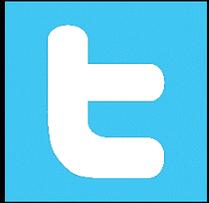
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# PRACCSIS



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