

The IRAN-2022 Symposium on
Plasma Tech - Driving Sustainable Future



P L A S T E C H

C O R P O R A T I O N L I M I T E D



EDUCATION

- 1996 – 2008** Saint Gabriel's college
- 2008 – 2012** Undergraduate degree Thammasat University
- 2013 – 2015** Master degree Chiang Mai University
- 2016 – 2021** Ph.D. at Chiang Mai University

WORK

- 2018 - PRESENT** CEO at Plastech Corporation Limited
- 2021 - PRESENT** M.D. research and development at TURAM





The Plasma Technology
Empowering a Sustainable Future

PLASTECH
CORPORATION LIMITED



PLASTECH
CORPORATION LIMITED



Research to Market

R2M THAILAND

The IRN 2023 Symposium on Plasma Tech - Driving Sustainable Future



Research to Market

R2M THAILAND



STARTUP THAILAND

The IRM-2022 Symposium on
Plasma Tech - Driving Sustainable Future





Startup Thailand Scale Up Asia

QSNCC ศูนย์การประชุมแห่งชาติสิริกิติ์

DATE 6-9 JULY 17

STARTUPTHAILAND.ORG

สัมมนา จากวิทยากรชั้นนำ
PITCHING ถึงเงินรางวัลรวมกว่า 1,000,000 บาท เพื่อต่อยอดธุรกิจ
STARTUP Ecosystem Showcase

สํารทอภพ โททออบมต

STARTUP THAILAND

NATIONAL STARTUP COMMITTEE

GSB สติยดี
SMEs STARTUP club

Smart SMEs Smart STARTUP

ปลุกพลัง STARTUP ในตัวคุณ
ร่วมส่ง Project สุดยอด SMEs STARTUP

idea
Prototype
Products

OPEN

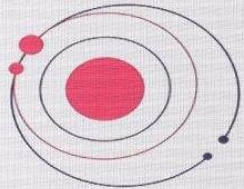
พีดเงินทุนมูลค่ารวมกว่า 3,000,000 บาท
ทำได้เลย ทำได้เร็ว ทำได้จริง
กับโครงการประกวด GSB สุดยอด SMEs STARTUP ตัวจริง

เพียงคุณอายุไม่เกิน 35 ปี ทีมละไม่เกิน 3 คน ส่ง Project ที่ดีที่สุดของคุณเข้ามาที่ www.gsb100tomillion.com
หมดเขตรับสมัคร 10 สิงหาคม 2561

สอบถามรายละเอียดเพิ่มเติมได้ที่ 092-247-0426-8 [f gsb100tomillion](https://www.facebook.com/gsb100tomillion) www.gsb.or.th admin@gsb100tomillion.com

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make the better world for the better life

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OSB
50,000 บาท

THE IRIT 2022 Driving Innovation on

นวัตกรรมที่เป็นจริงได้
โครงการ
SMART BUSINESS
ตัวจริง
เร็ว ทำได้



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chemical residue from

Pesticide



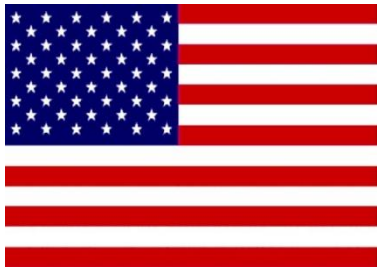


Trade barriers from chemical residue exceeds standard **damage to economy system** around **4,000 billion bath** per year

Trade Barriers



America



Thai banana is not allowed import to USA because of fungicide contaminated.



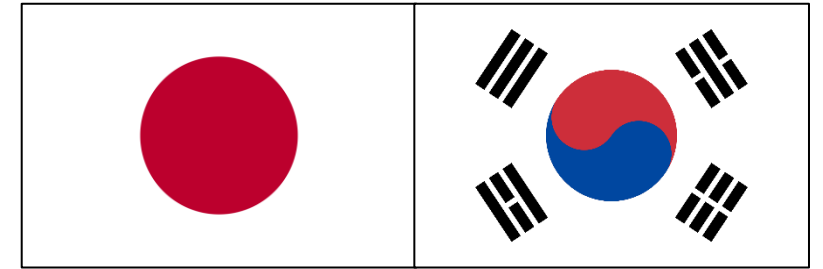
Europe



16 of Thai vegetable do not import, motive by highly chemical contaminant



Japan & South Korea



Strongly check about Thai tropical fruit cause of insecticide contaminant.

Thailand Export process

Exporters



Verify concession of association or establishment that concerned



Make sure about all documentary that import country needs



Checked all tax privilege and origin product certificated



Register of vegetable/fruit and ensure plant with department of agriculture



Customs Process



Export

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Thailand Certificate



Issue Date : November 04, 2015
 Report No : TR 58/40932 Rev.1
 Page : 1 of 2

TEST REPORT

Customer Name and Address	Yen din-dee Co., Ltd 187/9 Moo5,Seatakit Road,Tambon Nades,Amphor Muang, Samutsakorn
Sample Description	Supergreen (Khaikae) Sachet Humic Extra
Sample Code	5821764-001
Sample Characteristic and Condition	Sample Type: Soil Conditioner Packaging: zip lock plastic bag Quantity : 1 bag, Weight/Volume : 2 kg. Temperature : room temperature, in good condition when received
Received Date	October 26, 2015
Test Date	October 27, 2015 - November 03, 2015

Analysis Results

Test items	Test Results	Units	LOD	Reference Methods
Organic Matter	37.9	%	-	Manual on Organic Fertilizer Analysis, APSRDO, DOA/42551
Sulfur	0.6	%	-	Manual on Fertilizer Analysis, APSRDO, DOA/22551
Total Nitrogen (Total N)	2.8	%	-	In-house method TE-CH-211 based on AOAC (2012) 993.13
Total Phosphorus (TP ₂ O ₅)	1.9	%	-	In-house method TE-CH-183 based on AOAC (2012) 994.01
Arsenic (As)	3.553	mg/kg	-	In-house method TE-CH-151 based on Official Method of Analysis of Fertilizers, JAPAN (1987)
Cadmium (Cd)	0.182	mg/kg	-	In-house method TE-CH-151 based on Official Method of Analysis of Fertilizers, JAPAN (1987)
Calcium (Ca)	0.90	%	-	In-house method TE-CH-151 based on Official Method of Analysis of Fertilizers, JAPAN (1987)
Chromium (Cr)	20.363	mg/kg	-	In-house method TE-CH-151 based on Official Method of Analysis of Fertilizers, JAPAN (1987)
Copper (Cu)	33.291	mg/kg	-	In-house method TE-CH-151 based on Official Method of Analysis of Fertilizers, JAPAN (1987)

This report is certified only on the sample tested.
 This report shall not be reproduced, except in full, without prior approval of the company.

LAB Certificate

ORIGINAL

Ministry of Agriculture
Department of Agriculture and Cooperatives, Bangkok, Thailand
Phytosanitary Certificate

Plant Protection Organization of Thailand
TO: Plant Protection Organization of FRANCE
493/137

1. Issued name and address of exporter
2. Declared name and address of consignee
3. Place of origin: THAILAND
4. Issued name of government: ANNONA MURRAYATA
5. Number and description of packages
6. Description of goods
7. Date of issue: JUNE 15, 2015
8. Name and signature of authorized officer: M.S. CHIEF, PORT OF PHUKET PLANT QUARANTINE STATION
19. Date: JUNE 15, 2015

10. Date: ... 11. Treatment: ... 12. Chemical (active ingredient): ...
 13. Duration and temperature: ... 14. Temperature: ... 15. Additional information: ...
 16. Stamp of organization: ... 17. Place of issue: PORT OF PHUKET
 18. Date: JUNE 15, 2015

945243

Phytosanitary Certificate

DEPARTMENT OF LIVESTOCK DEVELOPMENT
MINISTRY OF AGRICULTURE AND CO-OPERATIVES THAILAND
OFFICIAL CERTIFICATE FOR ANIMAL REMAINS

1. Consignor (name and address in full): P&P PREMIER TRADE CO.,LTD 56/13 SOI RAMA 3 SOI 77 CHONGNONSEE YANNAWA BANGKOK 10120
2. Ship / Air-bill: PENANG BRIDGE Y.MBS COSCO OCEANIA Y.MBLL
3. Sea / Air-part of loading: LAEM CHABANG, THAILAND
4. Destination: ROTTERDAM, THE NETHERLANDS
5. Date of departure: November 3, 2011
6. Consignor (name and address in full): P&P PREMIER TRADE CO.,LTD 56/13 SOI RAMA 3 SOI 77 CHONGNONSEE YANNAWA BANGKOK 10120
7. Producer (name and address): P&P PREMIER TRADE CO.,LTD 56/13 SOI RAMA 3 SOI 77 CHONGNONSEE YANNAWA BANGKOK 10120
8. Marks and Brands: HOLLAND OVERSEAS B.V. QTY 300 CARTONS GREEN B (CUSTOMER)
9. Description of goods: DISH CODE 500 CARTONS DISH CODE 500 CARTONS
10. Net weight (kg): N.W. 3,600.00 KGS. N.W. 6,150.00 KGS.
11. I hereby certify that the goods specified above have been examined and found to be free from evidence of infectious or contagious diseases.
12. Remarks: THE ANIMALS FROM WHICH THE HIDES WERE DERIVED HAD BEEN EXAMINED AND FOUND TO BE FREE FROM EVIDENCE OF INFECTIOUS AND CONTAGIOUS DISEASES. FURTHERMORE, POST-MORTEM EXAMINATION OF THE PRODUCT IS SUCH THAT THERE IS NO EVIDENCE OF ANY CONTAMINATION. THE UNDERSIGNEE OFFICIAL VETERINARIAN CERTIFIES THAT THE UNDERMENTIONED PRODUCT FOR HETS MADE FROM SKINS OF UNGLAZED, WAS NOT PRODUCED FROM THE RAW MATERIAL, OBTAINED FROM THE BURNING, ORIGINATING FROM THE COUNTRY, IN THE TREATMENT OF WHICH BURNING POWDER(S) ENCAPSULATED, OXIDE SULPHUR AND PHOSPHORUS HAVE BEEN REGISTERED DURING LAST 5 YEARS. THIS DISH CODES ARE HEATED DURING THE PROCESSING AT A TEMPERATURE OF 120 DEGREES CENTIGRADE. LIST NO. 004-019/2011 DATE OF HEAT PROCESSING: OCTOBER 30, 2011

Health Certificate

Original Solutions



8 %

Baking Soda

20 %

Potassium permanganate

48 %

Vinegar

10 - 49 %

Tap Water

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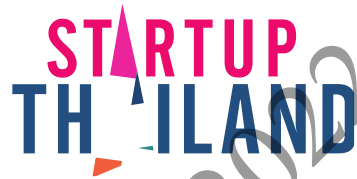
ที่มา : 58ทราจ

สังเคราะห์จาก Satpathy et al,2012 /อนุพันธ์ จรรณวิมลรัตน์ และคณะ- 2558/ Dikshit AK,2001 /Kadian et al,2001
Klinhom et al,2008 /Radwan,2005

ชนิดสารที่ตกค้างมากที่สุด

สังเคราะห์จาก Thai-PAN 2557-58 บท.๕๘. 2556-57 และ RASFF 2013-2014

Channels



Distributor

Our Customer

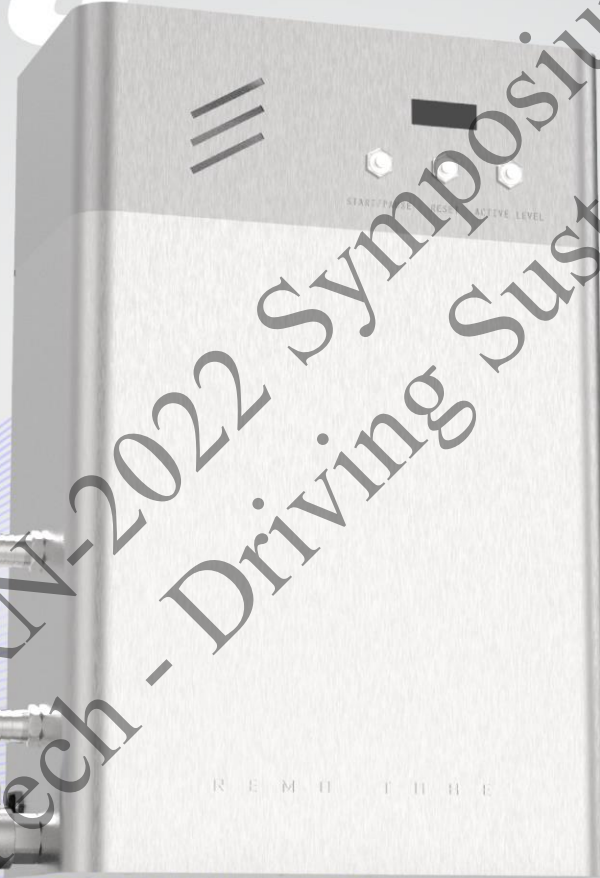


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REMO III

REMO III
BY PLASTECH



STAINLESS STEEL
FOR FOOD INDUSTRY

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PLASTECH
CORPORATION LIMITED

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TRIBIT TECHNOLOGIES

for Vegetable and Fruit Cleaning

- Eliminate chemical residue
- Eliminate microorganisms
- Expanding shelf-life



The IRK... Symposium on
plasma Tech - Building Sustainable Future



More than **9 billion** people in less than 40 years

It is the stark challenge for the **global food system**

www.environmentreports.com/

1 in 9

Almost **821 million people** in the world

do not have access to enough food

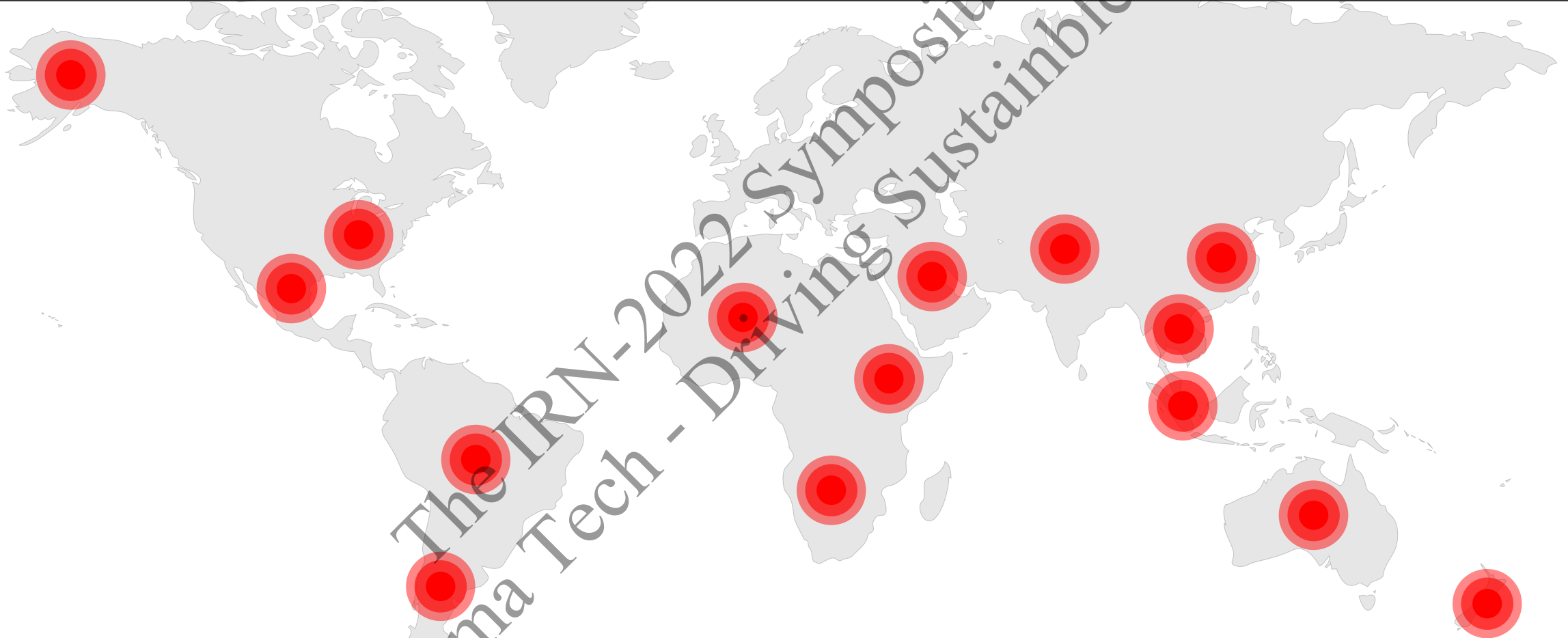
One Reason Came From

Plant Disease

Plasma Tech - Driving Sustainable Future

Causing Damage of Agriculture Product

[Impact to Quality & Quantity of Crops]



For **2 billion-plus people** who will live on the planet in 2050

Crop production will need to increase between



60 to 100 percent

Plasma System



(Prototype for research)



Growth rate increase 60%



Eliminate microorganism
(Decrease plant disease)



Environment & Human Safety



Plasma

Plasma is a hot ionized gas consisting of approximately equal numbers of positively charged ions and negatively charged electrons

The characteristics of plasmas are significantly different from those of ordinary neutral gases so that plasmas are considered a distinct **"fourth state of matter"**

How It Work

Natural Lightning Phenomenon
[One kind of plasma]





Normal
Urea Fertilizer



Nitrosomonas
bacteria

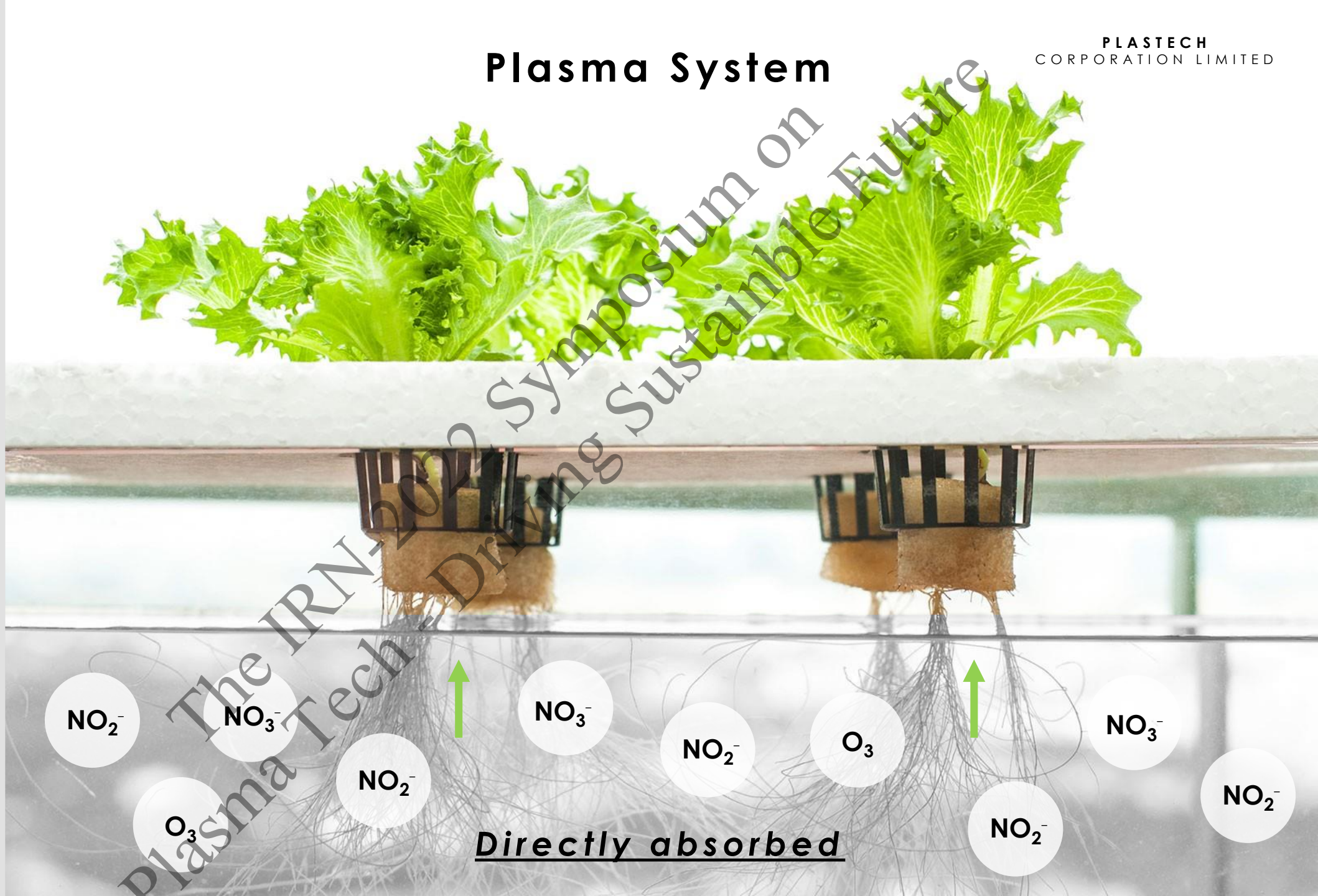


Nitrobacter
bacteria



Plasma System

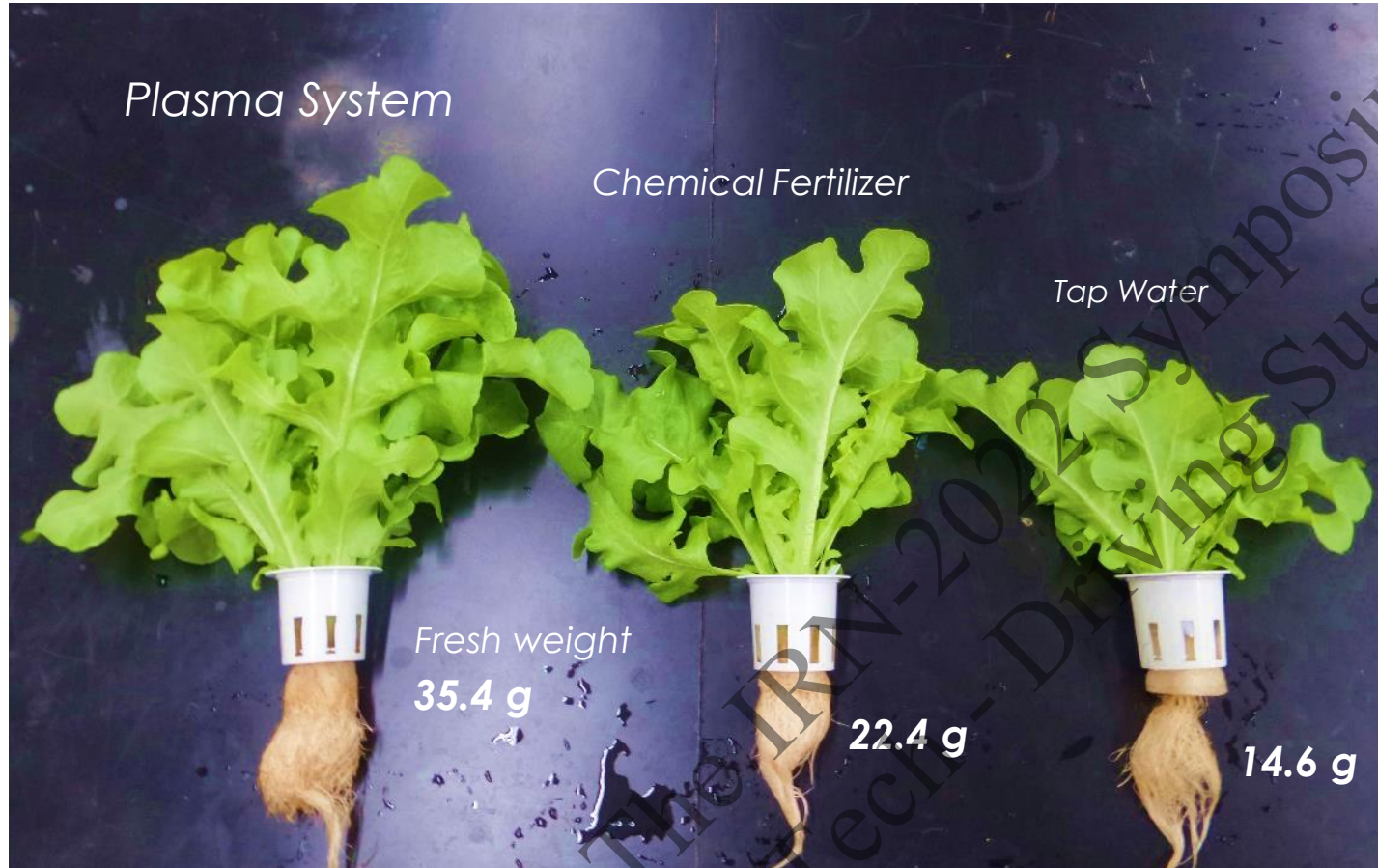
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Directly absorbed

Plasma System Research

of green oak in hydroponic system



Fresh weight increase **more than 60%**
when compared with chemical fertilizer

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Competitive

	Organic Fertilizer	Chemical Fertilizer	Plasma System
Hydroponic System			/
Microorganism			/
Chemical Residue			/
User safety			/
Environment friendly	/	>= 20 mins	20 mins
Harvest Period (Day)	50-60	40-46	30-35

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Compare Value

90 days for green oak salad 5000 trees, Water 4000 L, Fertilizer 14 times

Original			Expenses		Plasma System		
	Price	Unit	Total		Price	Unit	Total
Chemical Fertilizer	80	280	22,400	Plasma Machine	40,000	1	40,000
Pesticide	280	14	3,920	Electricity bill	4	62	248
Water	25	56	1,400	Water	25	84	2,100
Labor	9,000	2	18,000	Labor	9,000	2	18,000
Equipment	1,500	2	3,000	Equipment	1,500	3	4,500
Other			1,000	Other			3,000
Total			48,720	Total			67,848

Revenue			Revenue				
	Weight (kg)	Price (per kg)	Total		Weight (kg)	Price (per kg)	Total
Capacity	1,000	90	90,000	Capacity	1,600	90	144,000
Total			90,000	Total			144,000

2 Crops get profit **41,280 THB**

3 Crops get profit **76,152 THB**

Pay back in 3 months

Increase **1.84** times

Way to Market



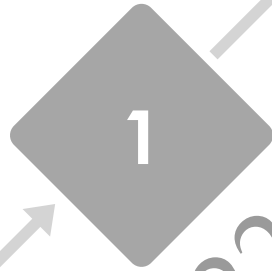
STARTUP
THAILAND



Investing

Product Development 25%

R&D 15% & Salaries 10%



Production 40%

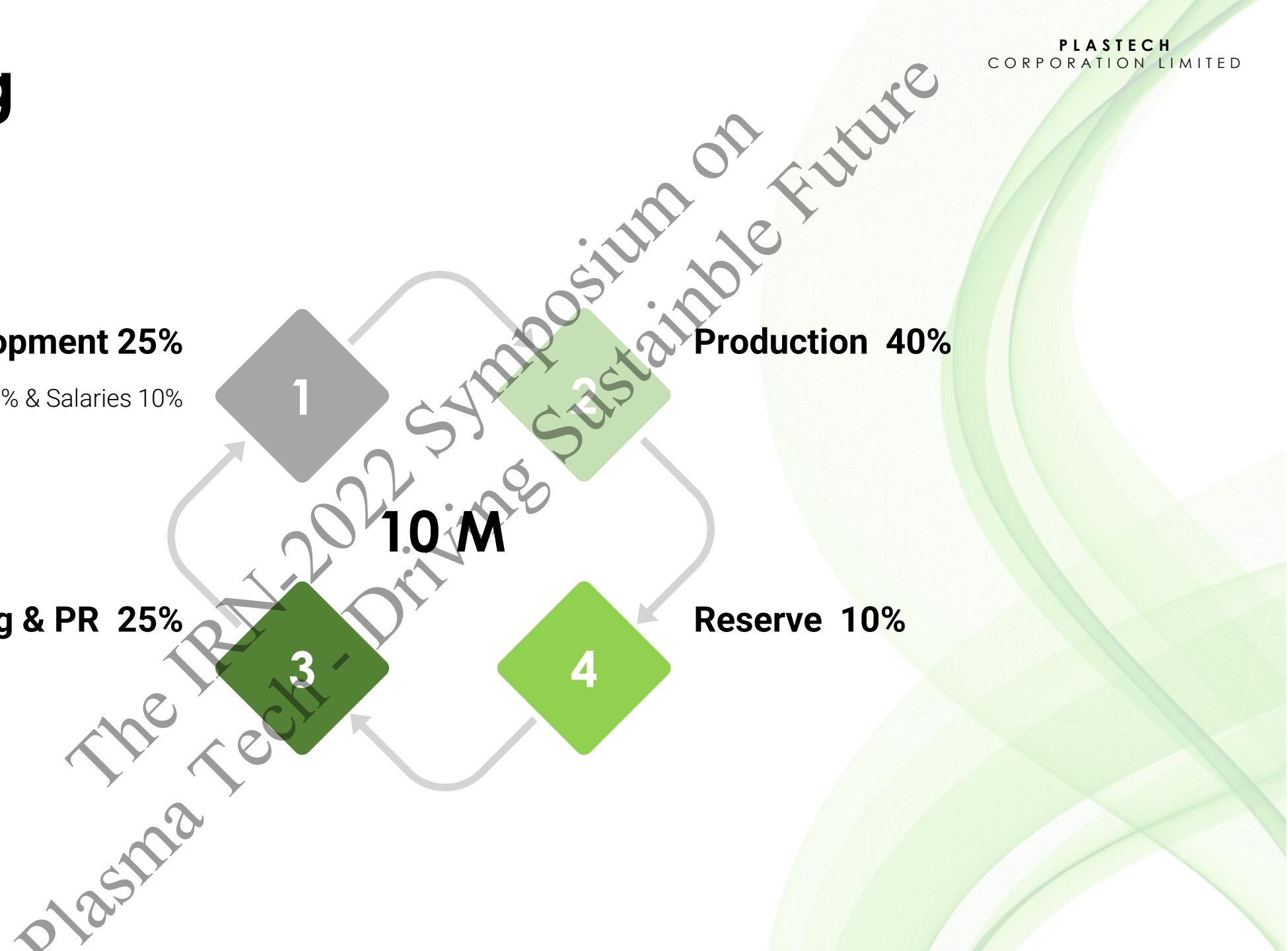


10 M

Marketing & PR 25%



Reserve 10%



Commercial planting experiments



Corporate from Hydroponic farm in Chiang Mai
Capacity more than 2,000 kg per month



Chemical Fertilizer



Plasma System



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