



# DENDROBIUM ORCHIDS IN MALAYSIA

Situation on Breeding, Production, PVP

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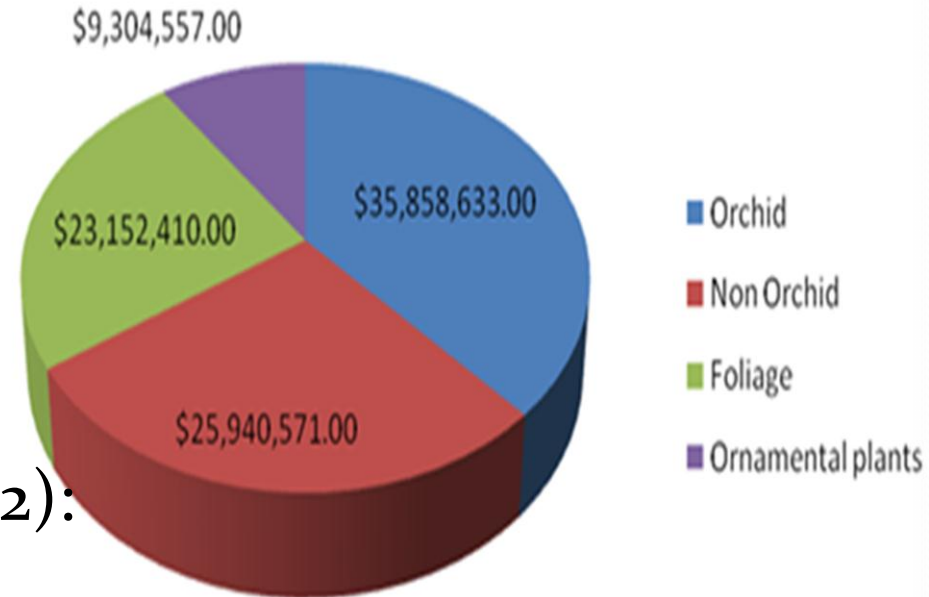
Horticulture Research Centre  
Malaysian Agriculture Research and Development Institute  
&  
Representing The Malaysian Department of Agriculture

# Malaysian Floriculture Industry

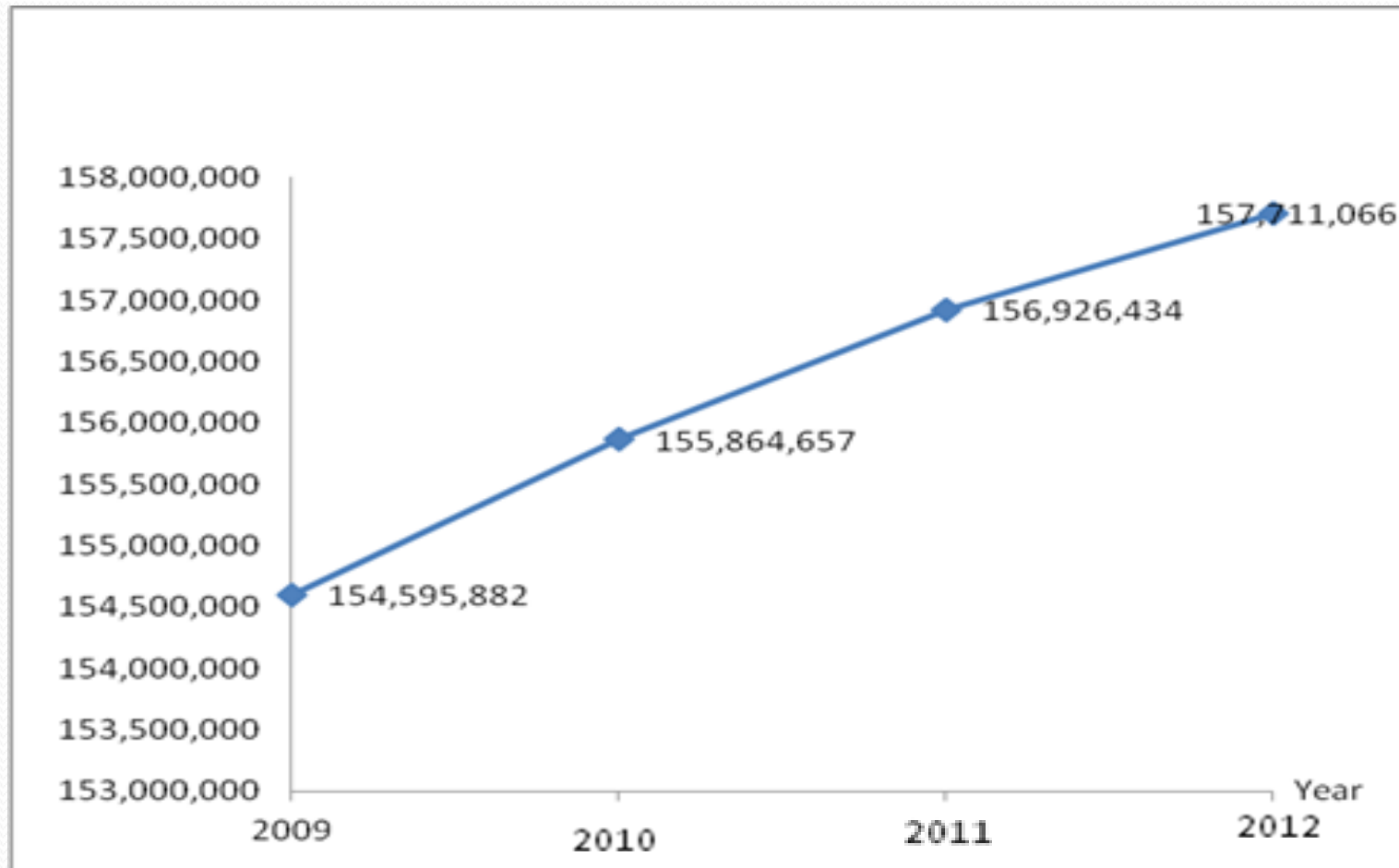
## Commodities:

1. Orchids
  2. Non Orchids
  3. Cut Foliage
  4. Ornamental Crops
- Total production value (2012):
    - \$94,256,171 USD
    - Orchids represented 38%

Production value (USD) for orchid and other type of flower plants in 2012

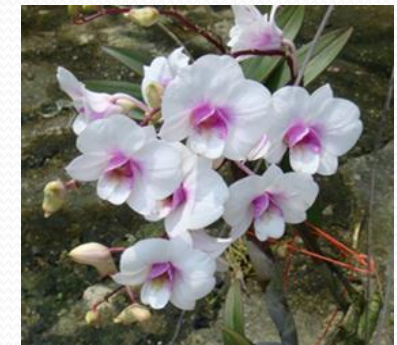
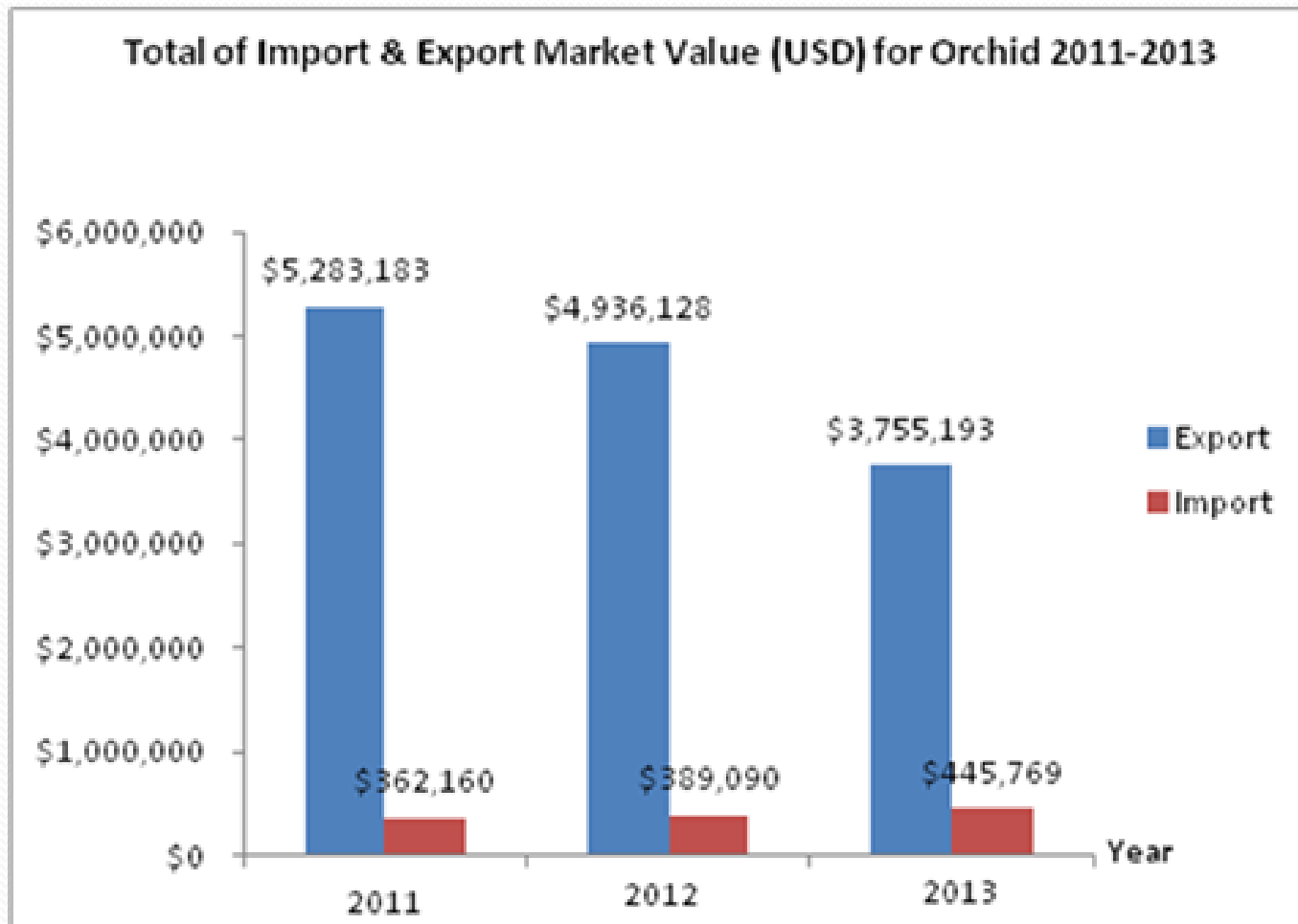


# Total Orchid Production 2009-2012



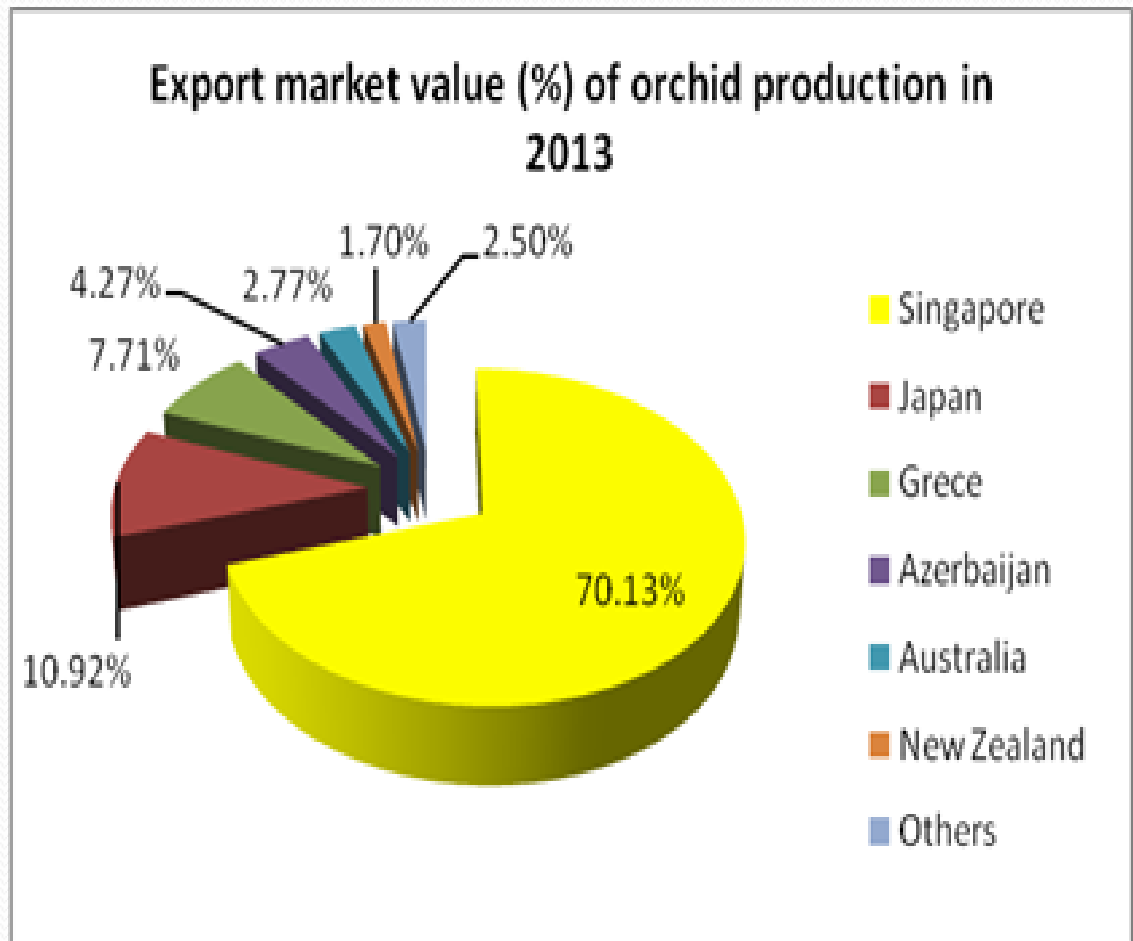
Source: Malaysian Department of Agriculture, 2013

# Malaysian Orchid – Export & Import



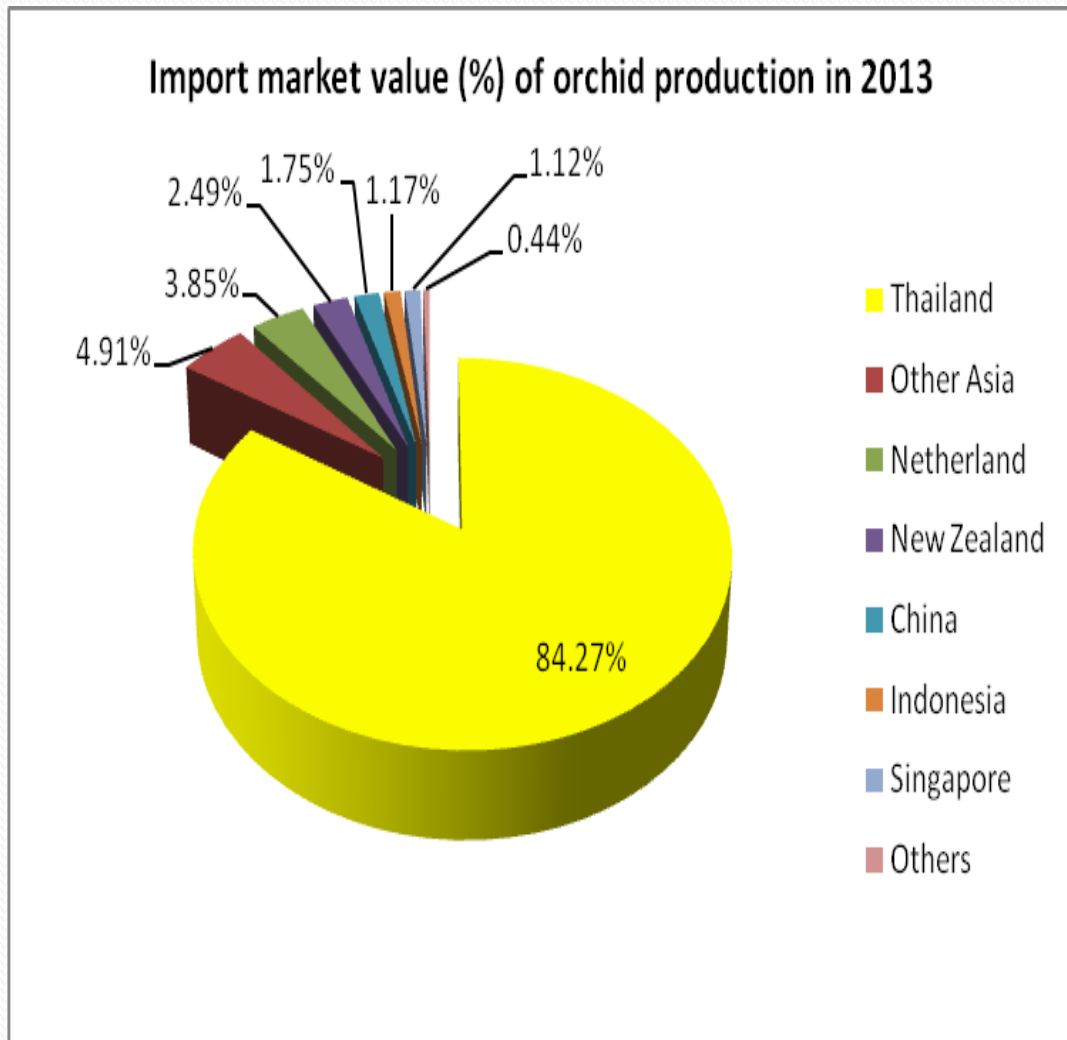
# Export Market

Country	Trade Value
Singapore	\$2,633,301
Japan	\$409,745
Grece	\$289,405
Azerbaijan	\$160,296
Australia	\$104,039
New Zealand	\$63,739
Others	\$94,668
<b>Total</b>	<b>\$3,755,193</b>



# Import Market

Country	Trade value
Thailand	\$375,638
Other Asia	\$21,877
Netherland	\$17,176
New Zealand	\$11,096
China	\$7,796
Indonesia	\$5,226
Singapore	\$5,012
Others	\$1,947
<b>Total</b>	<b>\$445,768</b>



# Malaysian Orchid Industry

- Marketed as
  - Cut-flower
  - Potted plant
- Recent market - high demand for landscape plant
- Large scale production
  - Vandaceous
  - Dendrobium
  - Oncidium
- Industry depend on consistent supply of new variety
- Constrain – Insufficient supply of new hybrid
- Development of new variety took long time - long juvenility
- Consistent breeding ensured consistent supply new variety

# Research On Orchid Breeding

- ❑ MARDI is the main institution actively in orchid R & D
- ❑ Universities
  - ❑ Molecular study
  - ❑ Genetic diversity
- ❑ Malaysian Nuclear Agency
  - ❑ Mutation
- ❑ Others by hobbies and farmers
  - ❑ Crossing





# MARDI's Orchid Breeding Programme - Dendrobium

Programs:

- Germplasm Collection
  - Species - 40/350 spp. from 1500 acc (70 genera)
  - Selected hybrids as studs
- Breeding through Hybridisation
  - Cut-flower
  - Potted plant
  - Landscaping
- DNA finger printing

# Germplasm Collection of Orchid Species

- Began 1976 as conservation effort to protect endemic spp
- Activities:
  - Collection
  - Identification
  - Evaluation of orchid species
- Collection conducted
  - jungles, forest, swamp,
  - mountainous area &
  - surrounding island
- Grown in an orchidarium
  - Morphological study on plant & flower
  - Adaptation to new environment



# MARDI's Germplasm - Dendrobium spp



*D. lamellatum*



*D. lamellatum*



# MARDI's Germplasm - *Dendrobium* spp



*D. sanderae*



*D. pumillum*



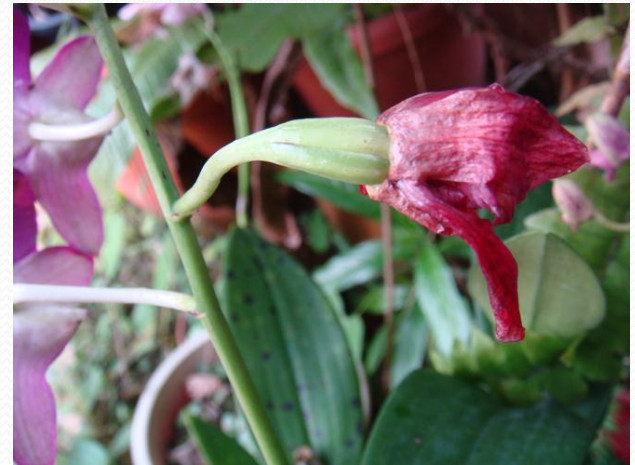
*D. secundum*



*D. bracteosum*

# Dendrobium Hybridisation

- ❑ Total Hybrids = 10
- ❑ Cut-flower = 5
- ❑ Miniature potted = 3
- ❑ Landscape = 2



- ❑ Most named after the prominent VIP
- ❑ Registered with The International Registration Authority for Orchid Hybrids, UK



# MARDI'S DENDROBIUM HYBRIDS

## POTTED PLANT- MINIATURE



*Den. Abdullah Badawi*



*Den. Doctor Sharif*



*Den. Tuanku Fauziah*

## CUT-FLOWER PRODUCTION



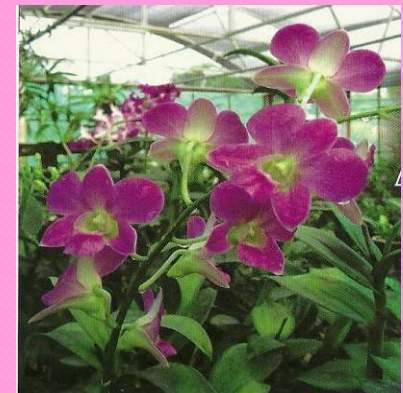
*Den. Datin Zakiyah*



*Den. Datin Seri Jeanne*



*Den. Tuanku Najihah*



*Den. Sultanah Kalsom*



# MARDI'S HYBRIDS

## LANDSCAPE PLANT



*Den. Bidimahan*



# Dendrobium hybrids





# Dendrobium Potted



**D. Formosum**



**D. Dawn Maree**

# **CURRENT STATUS ON PVP IMPLEMENTATION IN MALAYSIA**

Malaysian Department of Agriculture



# NEW PLANT VARIETY TESTING CENTER

**TITI SERONG, PERAK**



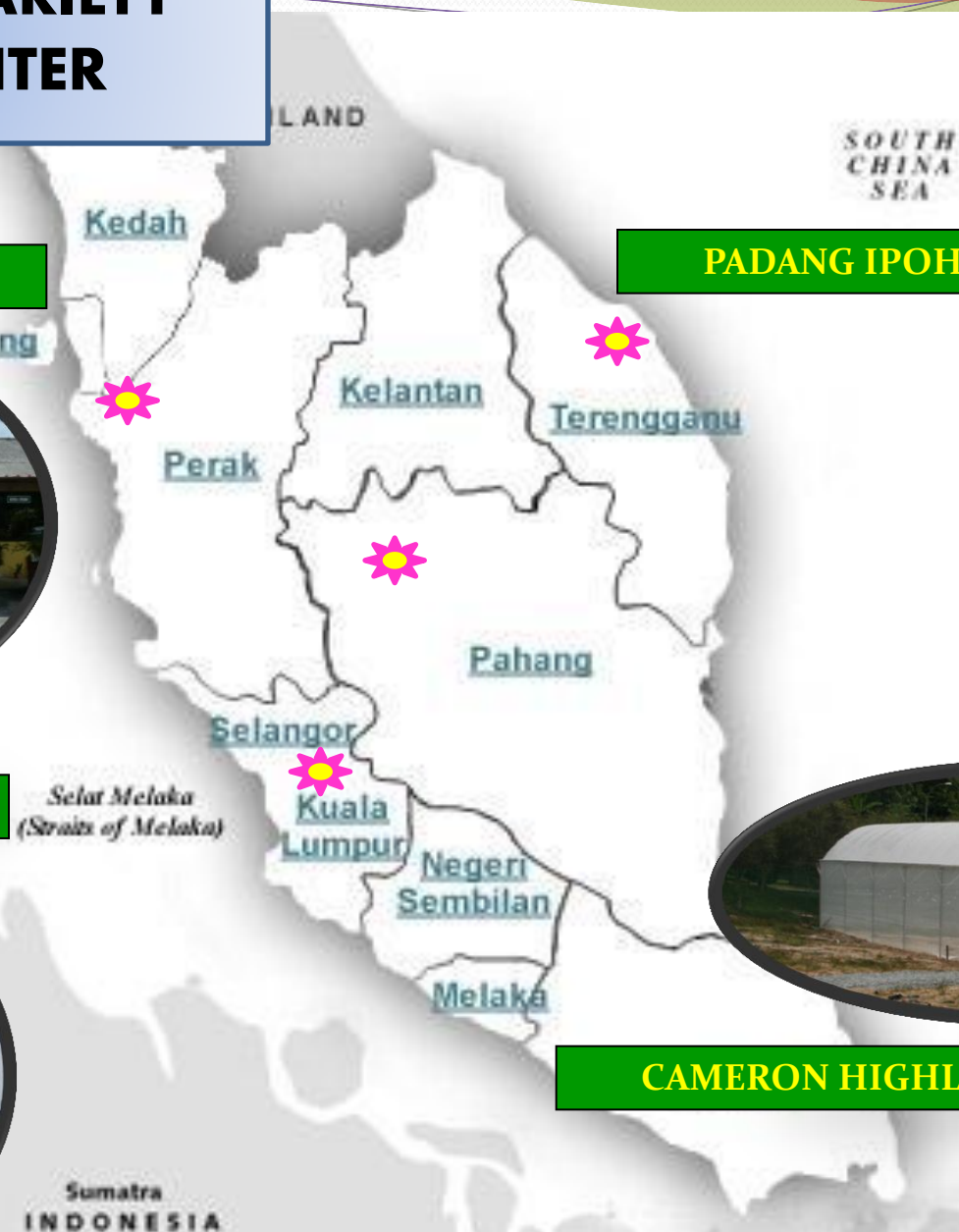
**SERDANG, SELANGOR**



**PADANG IPOH, TERENGGANU**



**CAMERON HIGHLANDS, PAHANG**





# **Status of PVP Applications**

## **[APPLICATIONS]**

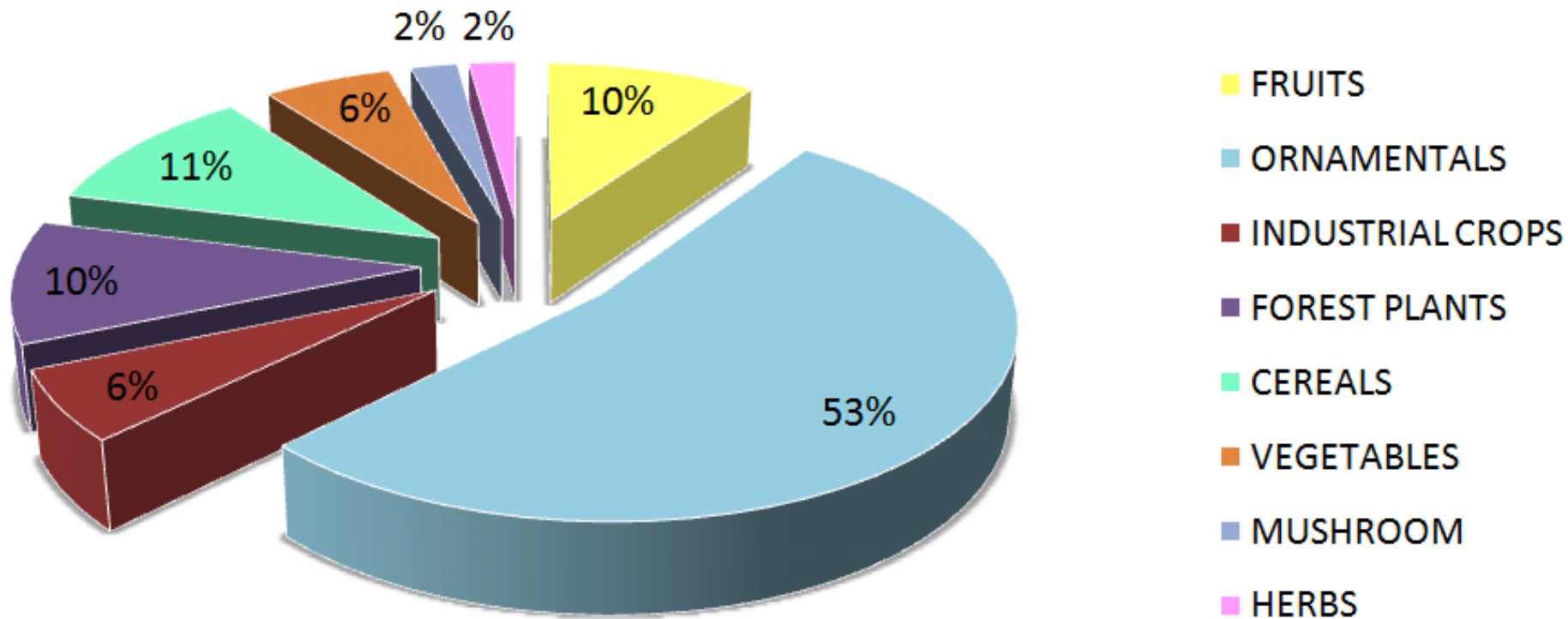
# Number of Applications Received 2008 –2014 (by Crop Type)

<b>Crop Type</b>	<b>Total Applications</b>	<b>Rejected</b>	<b>Withdrawn</b>
Ornamentals	98	0	1
Rice	20	5	0
Forest Plantation Sp.	19	0	0
Fruit	18	0	0
Industrial Crop	11	0	0
Vegetables	11	0	1
Herbs	4	0	0
Mushroom	4	0	2
<b>TOTAL</b>	<b>185</b>	<b>5</b>	<b>4</b>

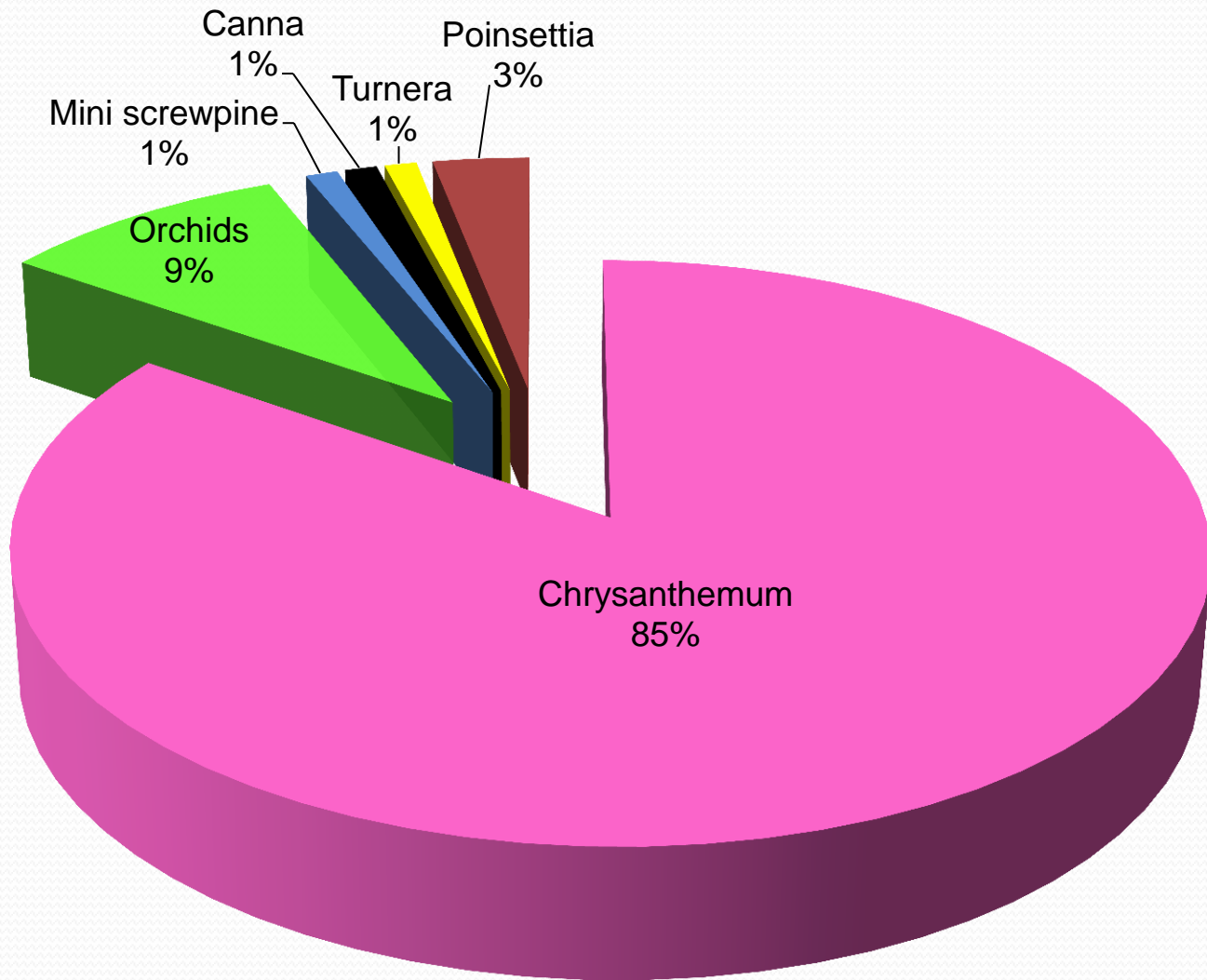
# Number of Applications Received (for Ornamental) 2008 – 2014

	Ornamental Crops	Applications	Granted	Withdrawn
1	Chrysanthemum	83	8	1
2	Orchids	9	2	-
3	Mini screwpine	1	0	-
4	Canna	1	0	-
5	Turnera	1	0	-
6	Poinsettia	3	0	-
	<b>TOTAL</b>	<b>98</b>	<b>10</b>	<b>1</b>

# Number of Applications (by Crop Type) (2008 – 2014)



# PVP Applications on Ornamentals





# PVP Applications Received 2014

No.	Crop	Number of Applications	Applicant
1.	Chrysanthemum	20	Dekker Breeding B.V.
			Deliflor Royalties B.V.
			Malaysia Nuclear Agency
2.	Orchid	2	Malaysia Nuclear Agency
3.	Tunera	1	Department of Landscape
4.	Canna	1	Department of Landscape
5.	Lettuce	4	Rijk Zwaan Zaadteelt en Zaadhandle B.V.
TOTAL		28	



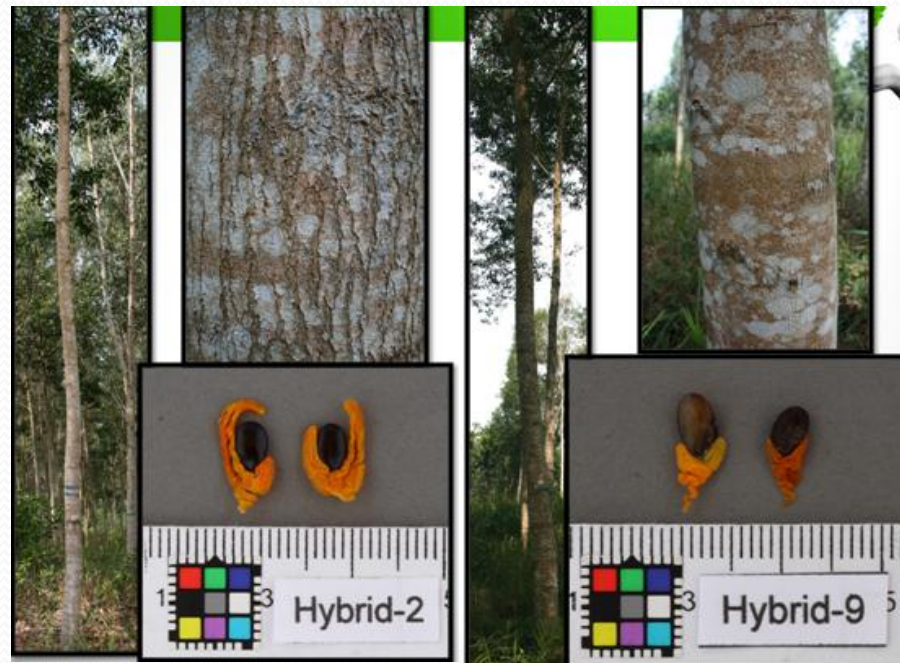
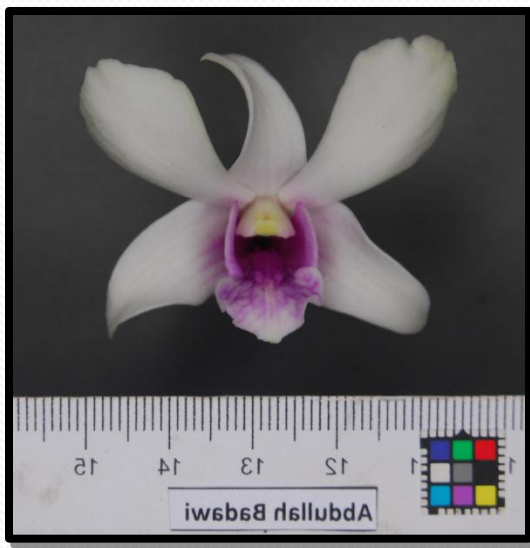
# **Status of PVP Applications**

**[GRANTED PBRs]**

# Protected Varieties

YEAR of GRANTING	Term	NUMBER OF TITLES
2012	April	25 (Acacia, Chrysanthemum, Papaya, <b>Orchid</b> <i>Dendrobium</i> )
2014	May	14 (Rice, Chrysanthemum, Roselle, Durian, Capsicum)
2014	Oct.	26 (Rice, Chrysanthemum, Dragon Fruit, Lemon Myrtle)
	Nov.	6 (Chrysanthemum, Pandanus, Lime)
2015	Feb.	17 (Kiwi fruit, Lettuce, Chrysanthemum)

# GRANTED (2012)





# Granted 2014





# Expecting Oct 2014



or more ...

# Acknowledgements

- Malaysian Government under the Ministry of Agriculture and Agro-Based Industry
- Director General of MARDI & DOA

*Thank You*

