DRAGON FRUIT
ON- & OFF-SEASONAL PRODUCTION IN THAILAND

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TOPICS

- Thailand situation
- Cultivation
- Off-season production
- Post-harvest & value added
- Conclusion
THAILAND SITUATION

- Planting area: 3,470 ha
  - Provinces: 58 (from 77)
  - Farmers: 5,082 households

- Total yield: 25,890 tons (2017)
  - >95% domestic consumption
  - Few for export

- Yield
  - Average: 11.4 tons/ha
  - Ranging: 0.4-88.0 ton/ha

- Import during Nov-Apr
Planting area: 3470 ha

<table>
<thead>
<tr>
<th>province</th>
<th>%area</th>
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<tbody>
<tr>
<td>Loei</td>
<td>49</td>
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<tr>
<td>Nakon Rachasi.</td>
<td>9</td>
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<tr>
<td>Chantaburi</td>
<td>6</td>
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<tr>
<td>Samutsakon</td>
<td>4</td>
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<td>Ubon Rat.</td>
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<td>Etc.</td>
<td>28</td>
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Fruit price
- Depended on fruit appearance, cultivar, season
- Wholesale grading size: S M L
- Average 0.79 USD/kg (varied 0.5 - 2.0)
- Price fluctuation
  - Lowest: August

Size M = 0.7-1.0 USD/kg (at wholesale market)
Commercial cultivars
- ‘White’ (white pulp, red peel)
  - Major cultivar
- ‘Red’ (red pulp, red peel)
- ‘Yellow’ (white pulp, yellow peel)
  - New to market
Cultivation

- Planting Lands
  - Highland - N/E
    - Hilly land at 300-400 MSL
  - Lowland - central
    - Flat land
    - High water table
- Slightly different management
CULTIVATION

- Plant materials
  - Stem cutting
CULTIVATION

- Poles & spacing
  - Cement Pole, sewage pipe
  - Spacing 2.5-3.5 m
  - 4 plants/pole
  - Single or double row
Irrigation
- Important for fruit growth
- Watering every 2-3 days
- Difficulty for off-season production
Fertilization

- Organic fertilizer
  - Manure 1-3 times/year (10-20 kg/time)
  - Fermented fertilizer

- Chemical fertilizer
  - Equal formulas (15-15-15)

Recommended:
- Apply both organic & chemical
- Mix of concentrate fertilizers
- Apply frequently
- Soil analysis
OFF-SEASONAL PRODUCTION

- **Plant growth regulator**
  - Forchlorfenuron (CPPU)
  - Finding proper thorns (with little swollen tissue)
  - Removing the thorn gentle
  - Brushing CPPU on the bud
  - Bud grows up in 4-7 days
    - Flower
    - New shoot

- **Limitation**
  - Skill to find the proper bud
  - Taking time
OFF-SEASONAL PRODUCTION

- **Light supplement**
  - Incandescence bulb
    - 100w 4 hr x 20-25 days
  - LED bulb
    - 20w 4 hr >> few flowering

- **Limitation**
  - Light intensity & quality
  - Electrical cost, installation
  - Pole spacing

- **Concerning**
  - Plant health
  - Water resource
## Post-Harvest & Value Added

### Harvesting
- At 30-35 days after flowering
- 8-12 times (on-season)
- Small fruit at end of season

### Post-harvest (by KMUTT)
- Storing in 8-10°C lasts 3 wks
- Pre-cooling in 4°C water
- Heat treated 50°C 3-5 min.
- Modified atmosphere bag
POST-HARVEST & VALUE ADDED

- Value added
  - Dry pulp
  - Healthy drink
CONCLUSION

- Tropical promising fruit
- Need to develop for
  - Cultivation
  - Off-season production
  - Chemical use & residue
  - Post-harvest handling
  - Processing
THANK YOU
FOR YOUR ATTENTION