

# เมล็ดพันธุ์แตงกวากับการพักตัว (Cucumber seed Dormancy)

ชวนพิศ อรุณรังสิกุล

หน่วยเทคโนโลยีเมล็ดพันธุ์และปรับปรุงพันธุ์พืช



Some varieties of local Thai cucumber, have the dormancy problem and continuous cropping using newly harvested seed is impossible. It's indispensable to understanding the detail of seed development must be clarified because it's closely related to the seed dormancy. The knowledge of suitable seed storage method and breaking of the seed dormancy condition is the important issue for seed company practice during seed processing is studied as well.

## Material & Method

### Seed development and hormones studies

Thai cucumber seed cultivar, Puang, was planted during rainy season in 1991, seed harvested at 20, 25, 30, 35, 40 and 45 day after anthesis. The study was evaluated the seed maturation, physiological study and influence of endogenous hormones change.

### Breaking seed dormancy treatments

4 Seed lots : 5, 7 and 14 days incubated fruits before extracting seeds and non-incubated one

#### 1) High temperature treatment

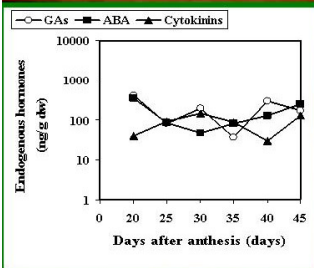
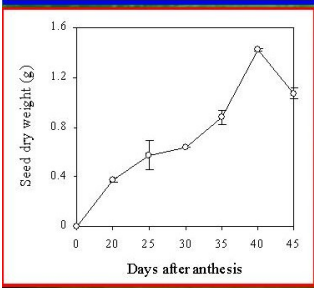
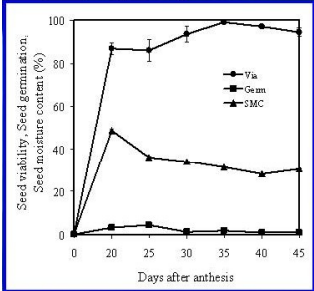
- Sun dry, 14 days (50-60 C/25-30 C, day/night)
- Hot air oven, 9 days (40 C continuous)
- Accelerated Aging, 2 days (45 C 100 %R.H.)

#### Endogenous hormones determination

GAs, ABA and cytokinins after exposure each treatment

#### Histological study

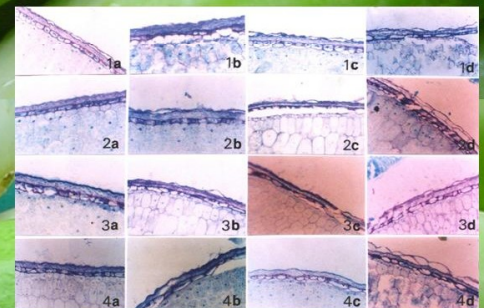
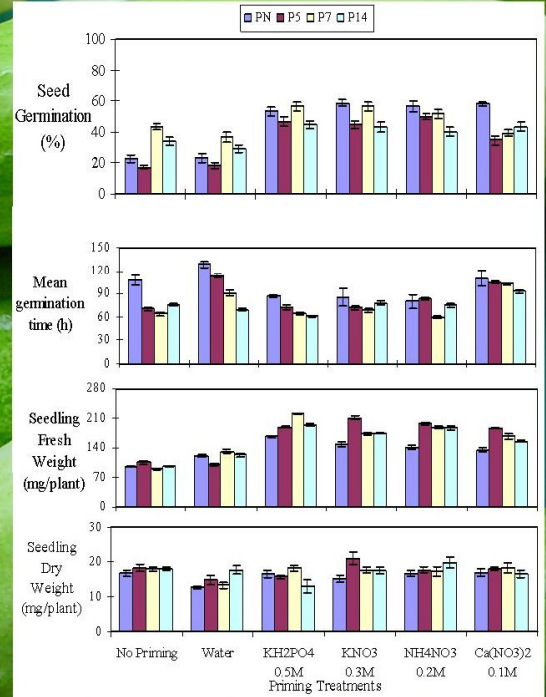
Epoxy Resin Section of Seed Coat and Perisperm, Staining by 0.05 % (W/V) aqueous toluidine blue in sodium benzoate



#### 2) Salt solutions

- 0.5 M  $KH_2PO_4$
- 0.3 M  $KNO_3$
- 0.2 M  $NH_4NO_3$
- 0.1 M  $Ca(NO_3)_2$
- $4H_2O$
- Distilled water

Treatment s	Seed lots			
	Non-incubated	5 D. Incubated	7 D. Incubated	Mean
Initial stage	5.25±3.12	1.13±0.75	0.38±0.25	2.25 c
14 D. Sun dried	96.50±2.68	98.88±0.95	99.13±0.25	98.17 a
Hot air dried (40 C 9 D.)	79.08±5.47	50.50±3.72	70.25±10.7	66.61 b
Aging (45 C 2 D.)	0.13±0.25	1.38±1.31	0.75±1.19	0.75 c
Mean	45.24 a	42.63 a	39.97 b	
F Test	**			
C. V. (%)	8.88			



Transverse section of perisperm layer of 'Puang' var. after various salt primings

## Conclusion

Endogenous hormones in rainy season trended to incline at the end of cucumber seed development. High concentration of ABA produced in 'Puang' var. More deepen of seed dormancy in rainy season even though the low level of ABA content, it may low possibility of direct ABA suppression in seed germinating. The 'Puang' seed dormancy was significantly recovered and improved the germination by 14 days sun dry or 9 days 40 C hot air dry methods. Therefore, the endogenous ABA content was declined after hot treatments

