

R-008

Report on the comparison of the TB film (Aluminium laminated polyester film) and PE (Polyethylene film) on plant growth and the flower quality

Joint research between Royal Project
and
Nissan chemical Industries, Ltd.



โครงการพัฒนา
ROYAL PROJECT FOUNDATION

Royal Project
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งานไม้ดอกส่วนกลาง

Acknowledgement

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Adisorn Krasaechai
Siengton Nutalaya
April 1991.



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Adisorn Krasaechai (CMU)
Siengton Nutalaya (TISTR)
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1. Introduction : The purpose of the research is to compare the efficiency of the two types of plastics, TB films, manufactured by Nissan Chemical Industries, Ltd. and PE film, locally manufactured. Both materials are being used as a roofing material for the greenhouse structures for the selected tested plant species. The details concerning the plant species, the greenhouse structure and the test sites was already mentioned in the first progress report (Adisorn and Siengton, 1990).

This report describes the growth of three Gerbera (Gerbera jamesonii) varieties Bahama, Beatrix and Queen Rebecca grown inside the tested structures in order to studies the efficiency of the two types of films.

Location : Huai Luk Royal Project.

650 meters MSL

Duration : July 1990 - February 1991

2. Results :

2.1 Days after planting to first flowering

All the three tested Gerbera varieties produced the first inflorescence under TB film earlier than those under PE film (Figure 1), especially in varieties Beatrix and Queen Rebecca.

2.2 Number of sprout per clumps

During the early stage of growth, variety Bahama planted under TB film tended to produce sooner and more new shoots than those under PE. However more shoots were produced on plants under PE from the fourth month. The early producing new shoots also occurred in varieties Beatrix and Queen Rebecca planting under TB film (Figure 2,3 and 4).

2.3 Number of inflorescences

During the first four month of growth more inflorescence were produced on plants under PE than those under TB. Unfortunately, we have lost data collecting from plants under PE, however the number of inflorescences for plants planted under TB are presented (Figure 5,6 and 7).

2.4 Stalk length

Data concerning the stalk length presented in figure 8,9 and 10 .This parameter varies in each variety and also during the growth period.

2.5 Inflorescence diameter

Figure 11,12 and 13 show the inflorescence diameter of the three Gerbera varieties under the tested films. Data show the fluctuation of the size of the inflorescences during the growth

period and it is therefore rather difficult to make the clear cut conclusion.

Conclusion It can be mentioned in general that the growth of Gerbera under the two tested material, TB films provide a better growing condition to Gerbera planted at Huai Luk Royal Project, 95 kilometers north of Chiang Mai with the altitude of 650 meters above sea level than PE film during the studied period. Plants under TB had a quick recovery period after transplanting than those under PE, the leaves also look more green. Inflorescence stalk length and size varies according to the varieties and the growing period.

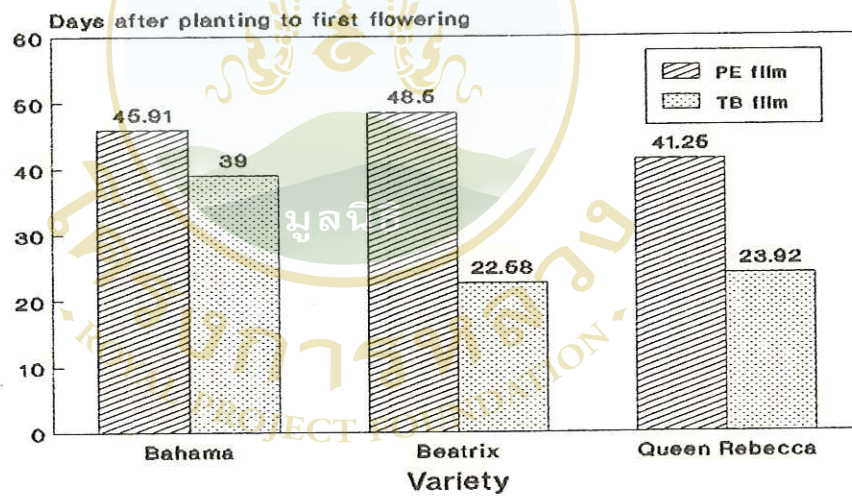


Figure 1. Number of days from planting to flowering of the three Gerbera varieties grown under PE and TB films.

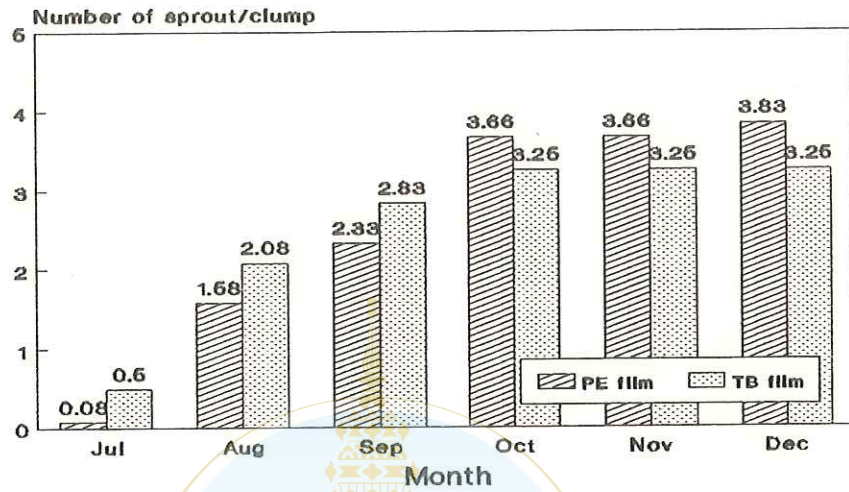


Figure 2. Number of sprout per clumps of Gerbera variety Bahama grown under PE and TB films.

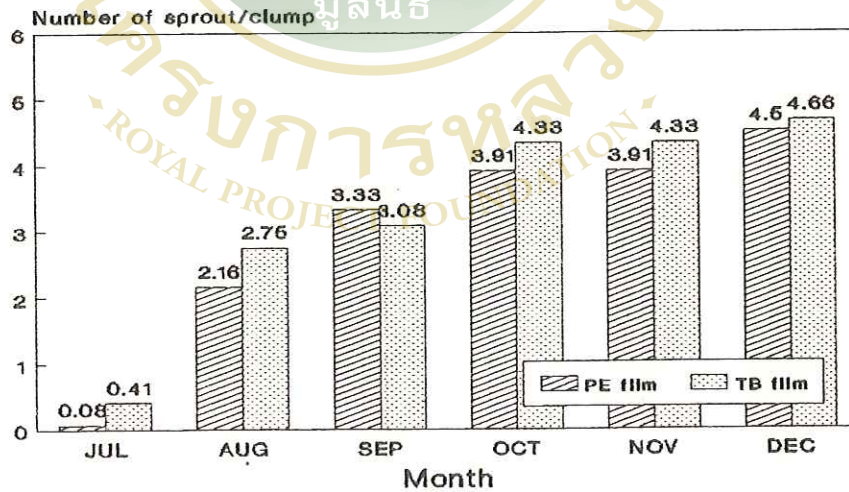


Figure 3. Number of sprout per clump of Gerbera variety Beatrix grown under PE and TB films.

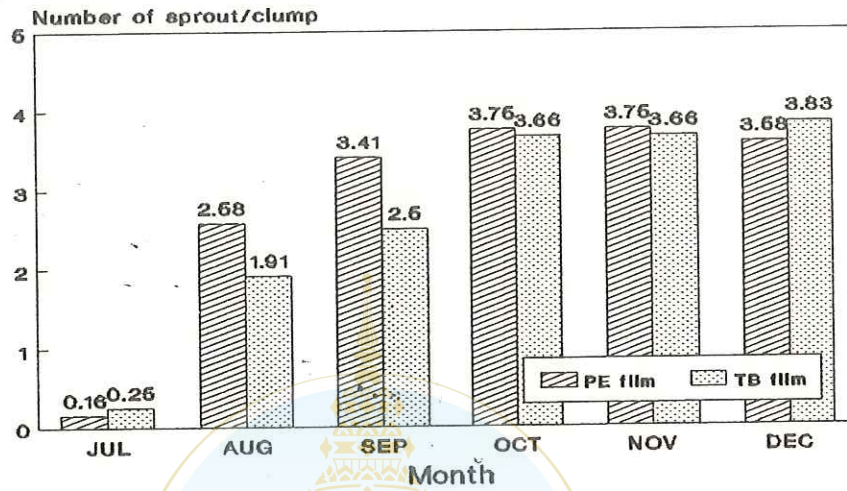


Figure 4. Number of sprout per clump of Gerbera variety Queen Rebecca grown under PE and TB films.

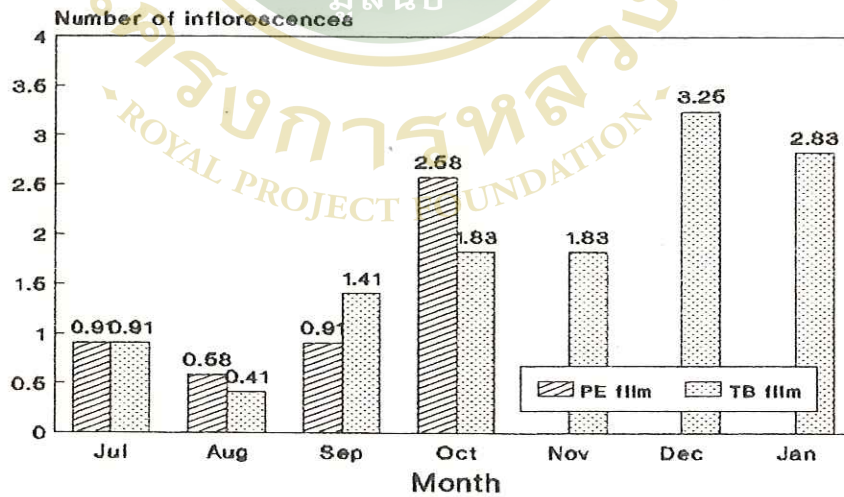


Figure 5. Number of inflorescences of Gerbera variety Bahama grown under PE and TB films.

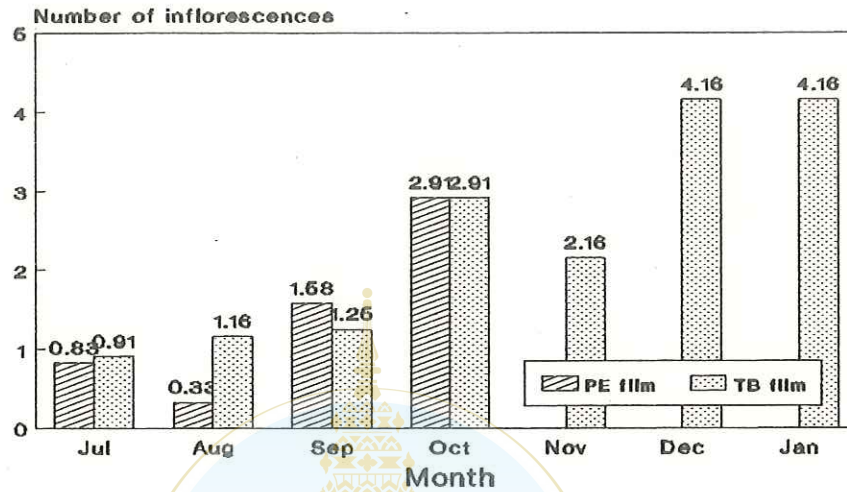


Figure 6. Number of inflorescences of Gerbera variety Beatrix grown under PE and TB films.

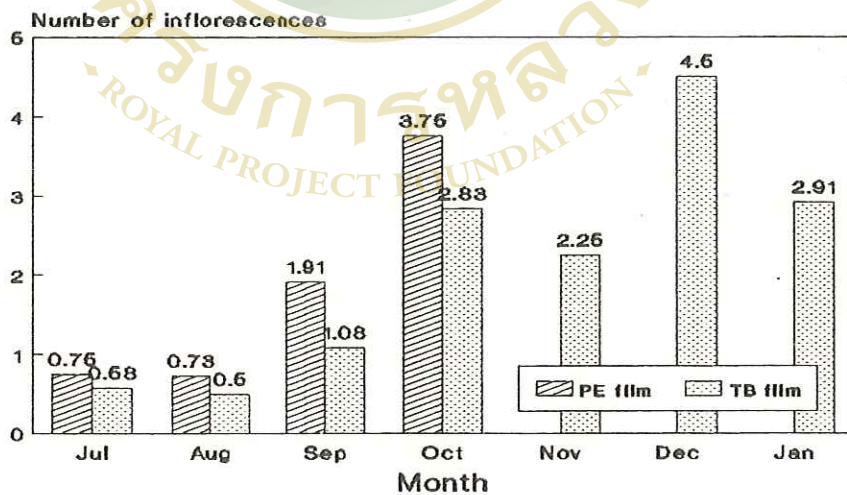


Figure 7. Number of inflorescences of Gerbera variety Queen Rebecca grown under PE and TB films.

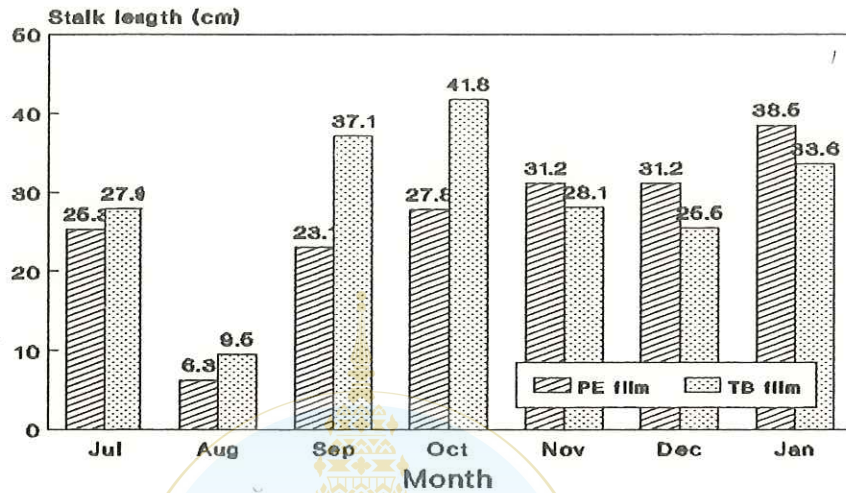


Figure 8. Stalk length of Gerbera variety Bahama grown under PE and TB films.

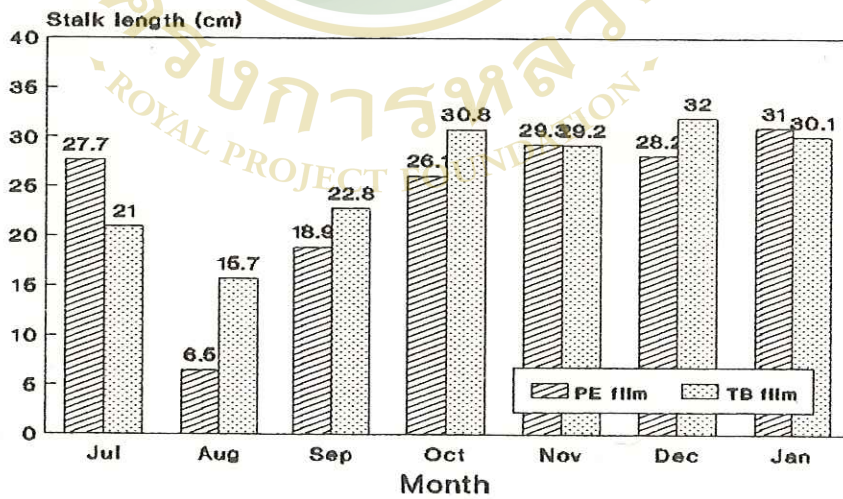


Figure 9. Stalk length of Gerbera variety Beatrix grown under PE and TB films.

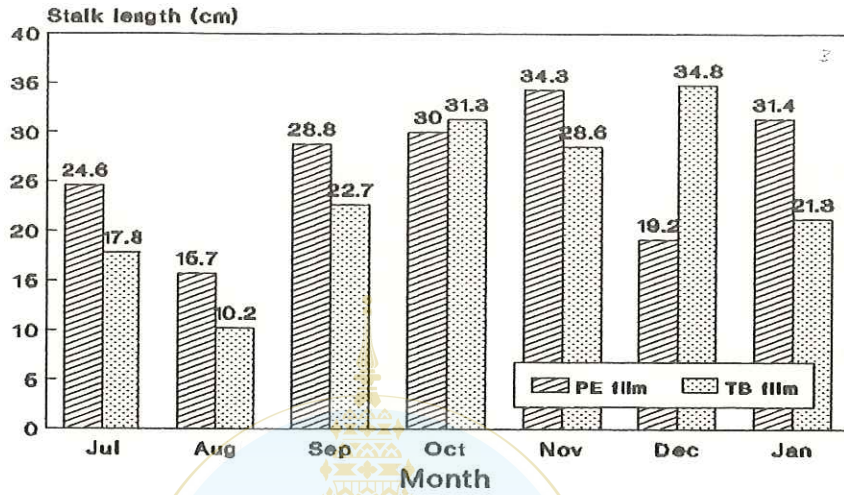


Figure 10. Stalk length of Gerbera variety Queen Rebecca grown under PE and TB films.

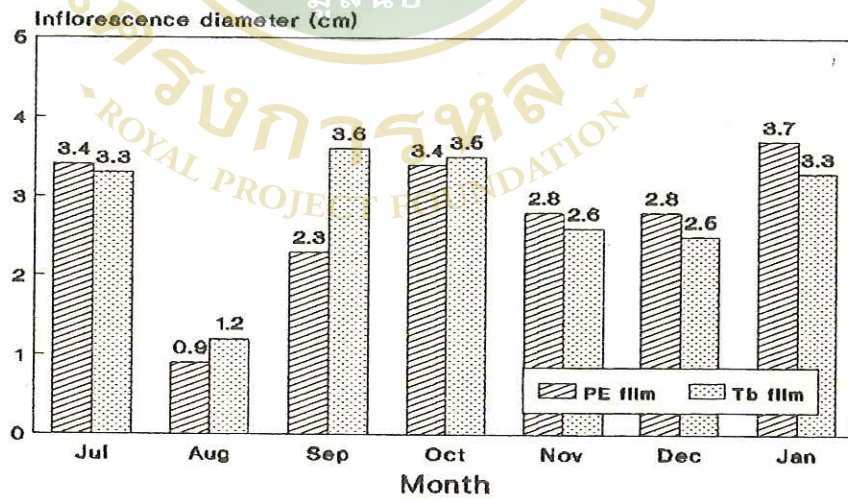


Figure 11. Inflorescence diameter of Gerbera variety Bahama grown under PE and TB films.



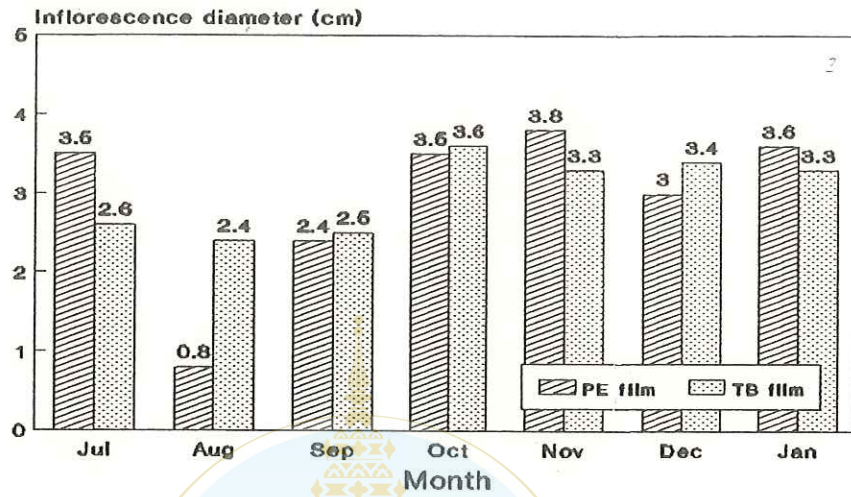


Figure 12. Inflorescence diameter of Gerbera variety Beatrix grown under PE and TB films.

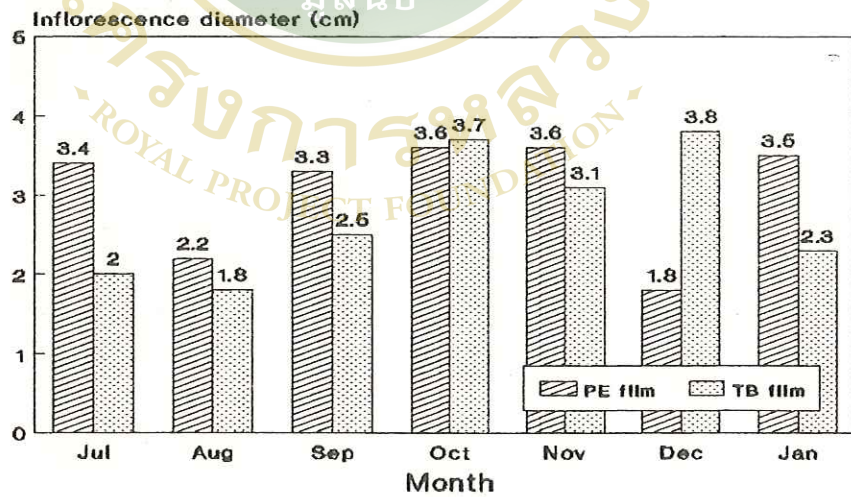


Figure 13. Inflorescence diameter of Gerbera variety Queen Rebecca grown under PE and TB films.



Figure 14. View of Gerbera plants under PE film.



Figure 15. View of Gerbera plants under TB film.



Figure 16. Growth of Gerbera variety Bahama grown under PE film.



Figure 17. Growth of Gerbera variety Bahama grown under TB film.

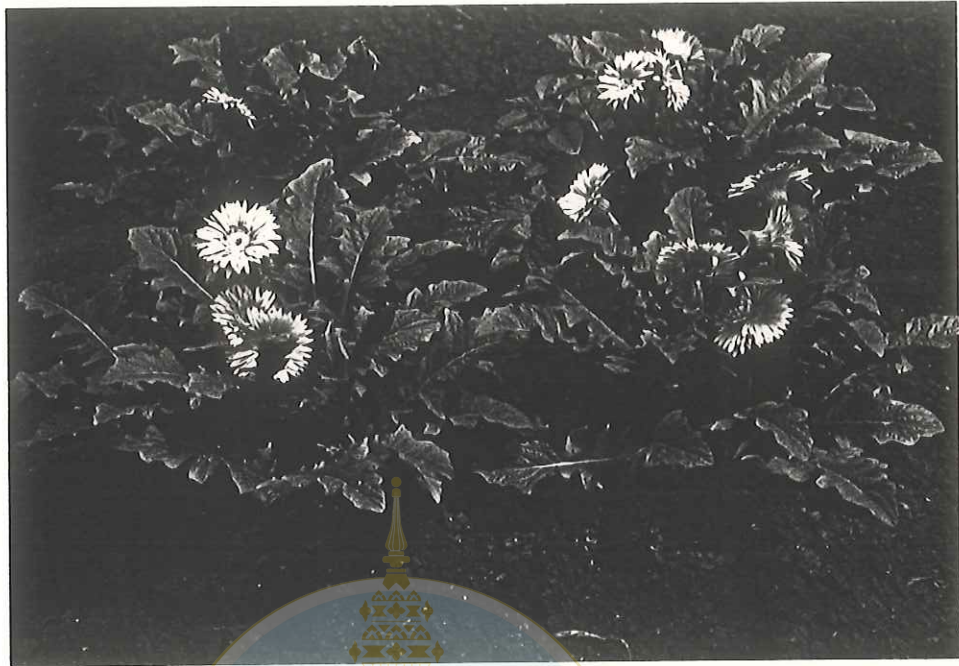


Figure 18. Growth of Gerbera variety Beatrix grown under PE film.



Figure 19. Growth of Gerbera variety Beatrix grown under TB film.



Figure 20. Growth of Gerbera variety Queen Rebeca grown under PE film.



Figure 21. Growth of Gerbera variety Queen Rebeca grown under TB film.



Figure 22. Inflorescence size of Gerbera variety Bahama grown under PE and TB film.



Figure 23. Inflorescence size of Gerbera variety Beatrix grown under PE and TB film.





Figure 24. Inflorescence size of Gerbera variety Queen Rebecca grown under PE and TB film.





1. Days after planting to first flowering

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
Bahama	45.91	15.33	39	12.48
Beatrice	48.5	18.6	22.58	17.5
Queen Rebecca	41.25	14.35	23.92	20.69

2. Number of sprout/clump

Bahama

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.08	0.29	0.5	0.67
AUG	1.5	0.52	2.08	0.79
SEP	2.33	0.78	2.83	0.93
OCT	3.66	1.15	3.25	1.54
NOV	3.66	1.15	3.25	1.54
DEC	3.83	1.64	3.25	2

Beatrix

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.08	0.29	0.41	0.51
AUG	2.16	0.83	2.75	0.86
SEP	3.33	1.07	3.08	0.9
OCT	3.91	1.08	4.33	1.15
NOV	3.91	1.08	4.33	1.15
DEC	4.5	1.78	4.66	1.92

Queen Rebecca

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.16	0.39	0.25	0.45
AUG	2.58	0.99	1.91	1.31
SEP	3.41	0.9	2.5	1.78
OCT	3.75	0.87	3.66	2.3
NOV	3.75	0.87	3.66	2.3
DEC	3.58	2.15	3.83	1.26

3. Number of flowers

Bahama

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.91	0.51	0.91	0.28
AUG	0.5	0.8	0.41	0.66
SEP	0.91	0.79	1.41	0.66
OCT	2.58	1.93	2.41	1.08
NOV			1.83	1.52
DEC			3.25	2.34
JAN			2.83	2.32

Beatrix

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.83	0.39	0.91	0.51
AUG	0.33	0.65	1.16	1.11
SEP	1.58	1.38	1.25	0.96
OCT	2.91	1.31	2.91	1.08
NOV			2.16	1.58
DEC			4.16	1.99
JAN			4.16	2.24

Queen Rebecca

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	0.75	45	0.58	0.66
AUG	0.83	1.11	0.5	0.67
SEP	1.91	1.31	1.08	1.08
OCT	3.75	2.09	2.83	1.89
NOV			2.25	2.05
DEC			4.5	2.15
JAN			2.91	3.42

4. STALK LENGTH

Bahama

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	25.33	10.59	27.91	5.58
AUG	6.25	11.38	9.5	14.12
SEP	23.08	17.25	37.08	5.96
OCT	27.83	12.78	41.83	7.06
NOV	31.16	19.52	28.08	21.99
DEC	31.66	20.56	25.5	19.07
JAN	38.5	5.82	33.58	11.57

Beatrix

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	27.66	6.68	21	10.97
AUG	6.5	11.97	15.66	9.81
SEP	18.91	14.22	22.75	13.81
OCT	26.08	8.84	30.75	2.49
NOV	29.25	9.55	29.16	13.85
DEC	28.16	13.9	32	4.8
JAN	31	2.95	30.08	10.15

Queen Rebecca

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	24.58	4.1	17.83	13.34
AUG	15.66	14.02	10.16	12.71
SEP	28.83	10.28	22.66	17.08
OCT	30	10.02	31.25	11.46
NOV	34.33	2.5	28.58	17.5
DEC	19.16	20.33	34.83	4.85
JAN	31.41	10.85	21.25	19.16

5. DISK FLORET DIAMETER

Bahama

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	3.38	0.43	3.33	0.32
AUG	0.91	1.66	1.2	1.8
SEP	2.33	1.83	3.58	0.51
OCT	3.41	1.18	3.54	0.49
NOV	2.83	1.72	2.58	1.97
DEC	2.79	1.7	2.54	1.88
JAN	3.7	0.25	3.33	1.07

Beatrix

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	3.34	0.39	2.62	1.28
AUG	0.83	1.51	2.41	1.48
SEP	2.37	1.78	2.5	1.52
OCT	3.5	1.16	3.62	0.31
NOV	3.79	0.25	3.25	1.58
DEC	3	1.44	3.41	0.35
JAN	3.62	0.22	3.29	1.05

Queen Rebecca

	Thai shed		Japan shed	
	Mean	SD	Mean	SD
JUL	3.37	1.15	1.95	1.75
AUG	2.16	1.94	1.75	1.86
SEP	3.25	1.11	2.45	1.87
OCT	3.58	1.2	3.7	1.23
NOV	3.62	1.24	3.08	1.89
DEC	1.83	1.92	3.83	0.49
JAN	3.45	1.11	2.25	1.99





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