

Effects of Harvesting Time on Seed Quality and Acceptability of Roasted Boiled Peanut in Large-seeded Peanuts

Juangjun Duangpatra and Suraporn Kongphol

Department of Agronomy, Faculty of Agriculture, Kasetsart University, Bangkok, Thailand



The purpose of this study was focus in harvesting time of two large-seeded peanut varieties, Kaset 1 and Kasetsart 50 to be used as seed for next planting season and also for roasted boiled peanut. The Two large seeded peanut varieties and the medium seed sized variety, Tainan 9 were planted in dry and rainy season. Harvesting were done at weekly interval from 60 to 74 days after 50% flowering. Results showed that early harvests obtained higher fresh pod yield than delayed harvests, but harvesting time did not affect dry pod yields. Fresh seeds of Kasetsart 50 and Kaset 1 were very low in germination because of seed dormancy. In case of dry seeds, harvesting at 60 and 67 DAF gave higher seed germination and vigor than those harvested at 74 DAF. Harvesting time did not affect overall liking, color, hardness and saltiness of roasted boiled peanut. In order to obtain high quality seed and good quality of roasted boiled peanuts, optimum harvesting time in Kaset 1 and Kasetsart 50 lared-seeded peanut was 67 DAF.

Introduction

Fresh boiling peanut is one of the major local peanut utilization found in every town and village in the kingdom of Thailand and Southeast Asian countries. Roasted boil peanut is another peanut product derived from fresh boiled peanut to prolong the shelf live of fresh boiled peanut. In general practice, optimum harvesting time for fresh boiling peanut is earlier than those harvested for dry pods or seeds. Kaset 1 and Kasetsart 50 are the two large-seeded peanut varieties which are indeterminate growth habit as those found in peanut and many other legumes. Optimum harvesting time for these two peanut varieties is about 120 days after planting (Duangpatra and Saeung, 2000). The purpose of this study was focus in harvesting time of these two peanut varieties to be used as seed for next planting season and also for roasted boiled peanut.



Materials and Methods

Two large seeded peanut varieties, Kaset 1 and Kasetsart 50 and the medium seed sized variety, Tainan 9 were planted in dry and rainy season at Suwan Wajokkasikit Field Crops Research Station, Nakhon Ratchasima Province, Thailand. Harvesting were done at weekly interval from 60 to 74 days after 50% flowering. At harvest, peanuts were determined for fresh pod yield, dry pod and seed yield, and seed quality in term of seed germination and seed vigor. Preferences of the consumer in roasted boiled peanuts were also tested.



Results and discussion

Results showed that early harvests obtained higher fresh pod yield than delayed harvests in both dry and rainy season, but harvesting time did not affect dry pod yields (Figure 1). In dry season, harvesting at 67 and 74 DAF gave higher seed yields than those harvesting at 60 DAF, while no affect were found in rainy season (Figure 2). Fresh seeds of Kasetsart 50 and Kaset 1 were very low in germination because of seed dormancy. In case of dry seeds, harvesting at 60 and 67 DAF gave higher seed germination (Figure 3) and vigor (Figure 4) than those harvested at 74 DAF. Tainan 9 was higher in seed quality than the others two varieties. Acceptability test on roasted boiled peanut indicated that harvesting time did not affect overall liking, color, hardness and saltiness of roasted boiled peanut (Table 1, 2 and 3). It was recommended that in order to obtain high quality seed and good quality of roasted boiled peanuts, optimum harvesting time in Kaset 1 and Kasetsart 50 lared-seeded peanut was 67 DAF.

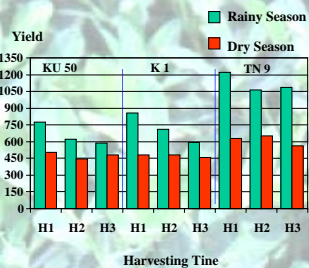


Figure 1. Fresh pod yield (kg/rai) of three peanut varieties at difference harvesting times

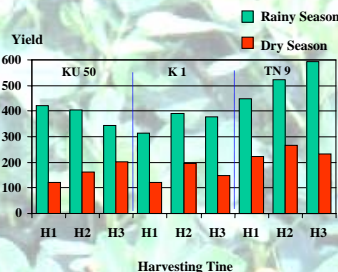


Figure 2. Seed yield (kg/rai) of three peanut varieties at difference harvesting times

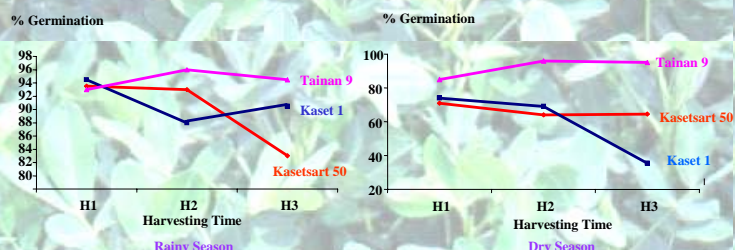


Figure 3. Germination percentage of dry seed of the three peanut varieties at difference harvesting times

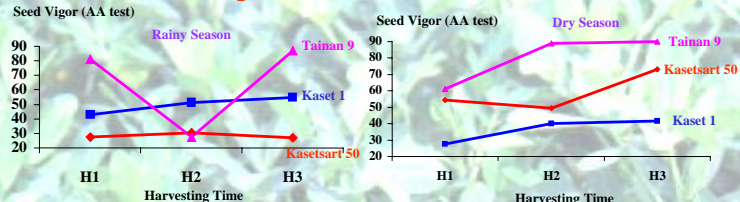


Figure 4 Seed vigor (%germination after accelerated aging) of dry seed of the three peanut varieties at difference harvesting time

Table 1. Overall liking, color, hardness and saltiness of roasted boiled Kasetsart 50 peanut at difference harvesting time

Season	Properties	Check	H1		H2		H3	
			30	40	30	40	30	40
Dry Season	Overall liking	5.87	6.63	5.77	5.37	5.03	5.03	5.30
	Color	6.10	5.87	6.00	5.76	5.50	5.57	5.63
	Hardness	5.37	4.83	4.76	4.73	4.57	5.03	4.53
	Saltiness	6.01	5.30	5.33	5.50	5.27	4.87	5.03
	Mean	5.84	5.41	5.46	5.34	5.09	5.12	5.12
			5.44		5.22		5.12	
Rainy Season	Overall liking	5.87	6.20	5.87	5.97	5.70	5.73	5.90
	Color	6.10	6.10	5.57	5.37	5.87	5.83	5.50
	Hardness	5.37	5.80	5.87	5.30	5.27	5.80	5.87
	Saltiness	6.01	6.07	5.77	5.50	5.03	5.90	5.60
	Mean	5.84	6.04	5.77	5.53	5.47	5.81	5.72
			5.91		5.50		5.77	

1/ and 2/ boiled for 30 and 40 minutes

Table 2. Overall liking, color, hardness and saltiness of roasted boiled Kaset 1 peanut at difference harvesting time

Season	Properties	Check	H1		H2		H3	
			30 ^{1/}	40 ^{2/}	30 ^{1/}	40 ^{2/}	30 ^{1/}	40 ^{2/}
Dry Season	Overall liking	5.87	5.30	5.43	5.40	5.47	4.97	5.03
	Color	6.10	6.00	6.10	5.47	5.23	5.03	5.10
	Hardness	5.37	4.93	4.73	4.77	5.00	4.10	4.53
	Saltiness	6.01	4.87	5.13	5.07	5.40	4.63	5.07
	Mean	5.84	5.41	5.46	5.34	5.09	5.12	5.12
			5.44		5.22		5.12	
Dry Season	Overall liking	5.87	5.50	5.60	5.87	6.13	5.97	6.13
	Color	6.10	5.63	5.87	5.63	6.03	5.77	5.83
	Hardness	5.37	4.90	5.07	5.73	5.73	5.10	5.10
	Saltiness	6.01	5.57	5.70	5.63	5.57	5.27	5.73
	Mean	5.84	5.40	5.56	5.72	5.86	5.53	5.62
			5.48		5.79		5.58	

1/ and 2/ boiled for 30 and 40 minutes

Table 3. Overall liking, color, hardness and saltiness of roasted boiled Tainan 9 peanut at difference harvesting time

Season	Properties	Check	H1		H2		H3	
			30 ^{1/}	40 ^{2/}	30 ^{1/}	40 ^{2/}	30 ^{1/}	40 ^{2/}
Dry Season	Overall liking	5.87	5.20	4.93	6.00	5.73	5.97	5.97
	Color	6.10	5.97	5.90	5.30	5.37	6.67	6.8
	Hardness	5.37	4.90	4.10	4.40	4.23	5.17	4.97
	Saltiness	6.01	5.30	5.60	5.90	5.83	5.83	6.33
	Mean	5.84	5.41	5.46	5.34	5.09	5.12	5.12
			5.44		5.22		5.12	
Dry Season	Overall liking	5.87	6.53	6.63	6.13	6.60	6.32	6.23
	Color	6.10	6.43	6.30	6.13	6.43	5.90	5.90
	Hardness	5.37	5.73	5.50	5.83	6.10	5.67	5.63
	Saltiness	6.01	6.47	6.10	6.00	6.27	5.93	6.27
	Mean	5.84	5.41	5.46	5.34	5.09	5.12	5.12
			5.44		5.22		5.12	

1/ and 2/ boiled for 30 and 40 minutes

Conclusion

Fresh seeds of Kasetsart 50 and Kaset 1 large-seeded peanut were very low in germination because of seed dormancy. For dry seeds, harvesting at 60 and 67 DAF gave higher seed germination and vigor than those harvested at 74 DAF. Harvesting time did not affect overall liking, color, hardness and saltiness of roasted boiled peanut. In order to obtain high quality seed and good quality of roasted boiled peanuts, optimum harvesting time in Kaset 1 and Kasetsart 50 lared-seeded peanut was 67 DAF.

References

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