

SHORT COMMUNICATION

**STUDY OF GERMINABILITY OF TWO RECENTLY RELEASED
GROUNDNUT VARIETIES**

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INTRODUCTION

Seed germinability is an important factor in commercial groundnut cultivation. In general, oil crops sown within short period after harvest results in poor germination and sparse stand (Shaik, 1982; Zade *et al.*, 1986). On the other hand, dormancy helps to prevent mature seeds from sprouting before harvest. Further, when heavy rainfall occurs at the time of maturity, groundnut seeds germinate in the field (Smartt, 1976; Bhapkar *et al.*, 1986). Dormancy in groundnut is to be an inherited character (Hull, 1937) and also dependent on seed maturity and production condition (Peter Coolbear, 1994). Previous studies reported that groundnut seed should be stored at least 4 - 6 weeks after harvest to obtain good germination in Sri Lanka (Priyanthi Bandara, personnel communication). It has also been observed that good germination of groundnut can be obtained after a period of even 3 to 5 years if stored at suitable temperature depending upon the variety (Reddi, 1988). Nagarajan and Gopal Krishnan (1958) observed an improvement in the germinability of groundnut seed soaked in aqueous solution of Ethral for 24 hours. Similar results were obtained for sunflower indicating the use of Ethral at 25 ppm to overcome the post-harvest dormancy (Shaik, 1982) and to improve the germinability of sunflower (Udaya and Sastry, 1975). The present experiment was aimed at studying the germinability of two recently released groundnut varieties during six months storage period.

METHODOLOGY

Two recommended groundnut varieties 'Walawa' (large-seeded) and 'Indi' (small-seeded) were tested for germination through six months storage period under ambient temperature in Seed Laboratory at Mahailuppallama. The varieties were grown at Field Crops Research and Development Institute, Mahailuppallama in *yala* 2000 under irrigated condition and were harvested after attaining maturity. Each variety was sun-dried for 8% moisture content (monitored by grain moisture monitor). Each test consisted of hundred seeds from each treatment were germinated in standard sand trays over four

replicates. Seeds were treated with Ethral (aqueous solution 0.2% v/v), Captan (0.5% w/w) and untreated control. The germination tests were conducted at one-week interval commencing from two weeks after harvesting. The treatments were compared in a Randomized Complete Block Design. Germination exceeding 85% was considered as a mark for breaking dormancy.

RESULTS

Results revealed that there was dormancy in ‘Walawa’, which was broken naturally at 8 WAH and artificially (treated with Ethral) at 5 Week After Harvest (WAH). There was little or no dormancy in variety ‘Indi’ reaching 82 percent germination at 10-11 WAH. Percentage germination declined in WAH. It clearly shows that being an oil crop, groundnut seed loses its germinability with time. High oil content of ‘Indi’ (49%) may be one of the important reasons for losing its germinability quicker than the variety ‘Walawa’ (30%). It seems that the application of Ethral enhanced the germination of ‘Walawa’ compared to variety ‘Indi’. This may be the reason of breaking dormancy in ‘Walawa’ after treating with Ethral. It can be concluded that, groundnut varieties “Walawa” and “Indi” could be stored in an ambient condition up to six and three months respectively, without affecting germination.

Table 1. Germination percentage for different treatments in two groundnut varieties.

Weeks	Walawa			Indi		
	Untreated	Ethral	Captan	Untreated	Ethral	Captan
2	4	71	4	82	86	30
3	24	88	22	80	95	72
4	23	95	29	83	100	80
5	52	100	29	95	97	86
6	77	93	51	90	99	93
7	56	96	54	95	99	96
8	84	97	81	95	98	98
9	96	98	93	98	100	99
10	93	97	96	94	100	97
11	96	97	98	100	96	100
12	95	100	99	92	90	96
16	94	98	98	82	60	89
20	96	92	96	74	63	89
24	99	100	100	61	52	75

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