Table 1 *Differential fresh-seed dormancy in sister-strains of CGC-7 groundnut*

Category of sister strain	No. of segregants selected	% of population selected	Days after sowing taken for emergence*	Dormancy (days)
CGC-7 A	565	21.6	10	<230
CGC-7 B	605	23.1	25	245
CGC-7 C	607	23.2	40	270
CGC-7 D	842	32.1	55	285
		Mean	32.5	257.5
		S.E.	9·7	12·3

* Sowings were effected after a seed-storage duration of 230 days.

showing moderate dormancy. In categories B, C and D, the germination was progressively delayed by about a fortnight from one category to the immediate next one. The dormancy in the latter three categories was, thus, longer than the normal bulk and ranged from 240 to as high as 285 days which is unique and so far not reported in the Spanish groundnut.

Isolation of these highly dormant Spanish strains clearly shows that the magnitude of fresh seed dormancy can be manipulated through selection in the population and the scope exists to breed a Spanish bunch variety with a desired level of dormancy. Evolution of these strains amply flays the fallacy of non-availability of seed-dormancy in Spanish groundnut.

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IDENTITY AND TAXONOMY OF *SAPINDUS TRIFOLIATUS* LINN

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THE ambiguities existing in the names of certain economic crops often impede the proper utilization of the plants. *Sapindus trifoliatus* Linn, the source of soapnut, is such a plant, the identity and nomenclature of which are understood variously by taxonomists. It was Hiern[1] who recognized two different forms of *Sapindus trifoliatus* Linn, one with acuminate glabrous leaves and the other with emarginate leaves pubescent beneath. Vahl[2] raised these two forms to distinct species *S. laurifolius* Vahl and *S. emarginatus* Vahl. *S. laurifolius* has longer (up to 30 cm) obliquely ovate lanceolate leaves, petals softly woolly on the inner surface and velvetty round drupes combined almost completely, whereas *S. emarginatus* possesses shorter (up to 17 cm) broadly oblong leaves, petals glabrous on the inner surface but with two woolly scales and glabrous wrinkled drupes combined half way up. This concept was accepted by Trimen[3], Gamble[4], Haines[5], Santapau[6] and Abdulla[7]. Radlkofer[8] considered *S. laurifolius* as a synonym of *S. trifoliatus* and had reduced *S. emarginatus* to a variety of *S. trifoliatus* viz *S. trifoliatus* Linn var *emarginatus* (Vahl) Radlk. Cooke[9] treated *S. emarginatus* as a variety of *S. laurifolius*. Brandis[10], Prain[11], Duthie[12] and Saldanha and Nicolson[13] considered *S. trifoliatus*, *S. laurifolius* and *S. emarginatus* as synonyms. There is still another view that *S. trifoliatus* Linn is a *nomen ambiguum* and *S. laurifolius* Vahl is the correct name of the plant[3].

To evaluate the taxonomic status, the leaves of both *S. laurifolius* and *S. emarginatus* were subjected to a chemotaxonomic treatment involving chemical characters such as flavonoids, phenolic acids, alkaloids, saponins, tannins and iridoids using standard procedures[14,15], the results of which are tabulated in table 1. Both the plants contained flavones, glycoflavones, proanthocyanins and various phenolic acids in the leaves. The flavones encountered were apigenin and its 7,4′-dimethoxylated derivative in *S. emarginatus* and 4′-methoxy

Table 1 *The distribution of various phytochemicals in S. emarginatus Vahl and S. laurifolius Vahl*

	S. emarginatus Vahl	*S. laurifolius* Vahl
Apigenin	+	−
4′-Methoxy apigenin	−	+
7,4′-Dimethoxy apigenin	+	−
4′-Methoxy vitexin	+	−
7,4′-Dimethoxy vitexin	−	+
Propelargonidin	+	+
Procyanidin	+	+
Prodelphinidin	+	+
p-Hydroxy benzoic acid	+	+
Vanillic acid	+	+
Syringic acid	+	+
Melilotic acid	+	+
Protocatechuic acid	+	+
cis-Ferulic acid	+	+
Coumarin	+	−
Alkaloids	−	+
Saponins	+	+
Tannins	−	−
Iridoids	−	−

apigenin (acacetin) in *S. laurifolius*. 4′-Methoxy vitexin was the glycoflavone present in the former plant and 7,4′-dimethoxy vitexin in the latter. Proanthocyanidins like prodelphinidin, procyanidin and propelargonidin and phenolic acids such as vanillic, syringic, *p*-hydroxybenzoic, melilotic, protocatechuic and *cis*-ferulic acids were located in both the plants. In addition, *S. emarginatus* contained coumarin in the leaves. Saponins were present in the leaves of both the taxa whereas alkaloids were seen in *S. laurifolius* only. Tannins and iridoids were absent in both the plants.

The distribution of various chemical compounds clearly establishes the distinct chemical identities of both *S. laurifolius* and *S. emarginatus*. The former plant possesses 4′-methoxy-apigenin, 7,4′-dimethoxy vitexin and alkaloids as against apigenin, 7,4′-dimethoxy apigenin, 4′-methoxy vitexin and coumarin of the latter. These differences in the flavones, glycoflavones, phenyl propanes and alkaloids evidently indicate that *S. laurifolius* and *S. emarginatus* are two chemical entities. These overwhelming chemical evidences corroborate the existing morphological differences and justify the specific status accorded to both the plants by Vahl and later workers.

The presence of apigenin and vitexin derivatives, the same proanthocyanidins, phenolic acids and saponins in both the plants is indicative of the close chemical relationships the two species enjoy. The name *S. laurifolius* should be retained over *S. trifoliatus* because the plant referred to as *S. trifoliatus* by Linnaeus in Species Plantarum is in fact *Schleichera trijuga* Willd[3].

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