

Seed Tech News



ISST:
**Disseminating Knowledge of
Seed Science & Technology**

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The dramatic April 2026 flowering of the endangered Titan arum (*Amorphophallus titanum* L.) at Kew Gardens highlights the critical need for conserving rare botanical species. Known as the ‘corpse flower’, its massive bloom and foul odor temporarily attract carrion-feeding pollinators to ensure reproductive success. Seed production resulting from this fleeting event is essential for ex-situ conservation efforts, helping botanical gardens safeguard the species’ genetic diversity and secure its future survival outside its native habitat.

Secretary : Dunna Vijay
Editor : Manjunath Prasad
Associate Editor : Sanjay Kumar

From President's Desk...

Dear Members,

Greetings from the President's Desk!

As I begin my presidency of ISST, I thank members for their confidence in the new Executive Council. We inherit a foundation strengthened by Dr H. S. Gupta and his colleagues through regularising *Seed Research* and informing policy deliberations. We shall build on this work while widening participation.

The Executive Council meeting on 9 May and General Body Meeting at SKUAST, Jammu, on 13 May established an agreed programme. Attended by 67 members alongside the 41st Annual Group Meeting of AICRP on Seed (Crops), the General Body acknowledged the outgoing Council's contributions and approved the audited accounts, the 2026–2027 budget and an annual activity calendar.

Scientific communication remains central. Dr Manjunath Prasad and Dr Sanjay Kumar were entrusted with editorial responsibilities for *Seed Tech News*, prioritising the 2026 issues before the publication backlog. Digital circulation will support wider dissemination. Earlier *Seed Research* issues have been restored to the online archive, recovering valuable scholarship. The General Body approved reducing subscription prices from ₹5,000 to ₹2,500 per issue, complementing efforts to strengthen editorial support and improve visibility.

The General Body approved life membership payments in three or four instalments within a year, including for students, while increasing the annual fee to ₹1,000 to encourage longer-term association. Nine new life members had joined by 13 May. Annual observance of the Society's Foundation Day on 25 March, commemorating its registration in 1971, will connect institutional heritage with future aspirations.

Our scientific calendar envisages a National Seed Seminar in 2026 and an international seminar in 2028, supported by workshops, a national seed lecture series, industry-academia dialogues and school-level awareness activities. The General Body further stipulated that the “National Seed Seminar” series should retain its identity when organised jointly with other events. These initiatives should create sustained opportunities for learning and collaboration rather than isolated occasions of interaction.

The wider agricultural situation reinforces their relevance. At the National Kharif Conference on 29 May, the Government reported approximately 192 lakh quintals of seed availability against a requirement of 173 lakh quintals. This preparedness must be matched by appropriate varieties, dependable quality and timely local delivery: practical challenges to which our members can contribute directly.

Internationally, the World Seed Congress in Lisbon on 18–20 May and the ISTA Annual Meeting in Calgary on 22–25 June brought attention to resilient seed systems, breeding innovation and dependable testing. Their deliberations reinforce the importance of connecting our proposed activities with developments in global seed science and trade.

I invite members to contribute manuscripts, newsletter reports, mentoring and professional expertise. The success of our programme will depend on active participation and careful follow-through. Together, we can strengthen a Society that connects scientific achievement with the requirements of seed producers, institutions and farmers.

With warm personal regards.

Dr D. K. Yadava
President, ISST

Quercetin-Loaded Nanoformulation: A Potential Carrier for Seed Coating

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QUERCETIN-LOADED NANOFORMULATIONS combine a plant-derived bioactive compound with a nanoscale delivery system for seed enhancement. In a preliminary laboratory assessment in green gram, the treatment labelled 0.50% quercetin nanoformulation recorded 84% germination, compared with 74% in uncoated seeds. Seedling length and vigour index were also higher. Physicochemical characterisation and seed performance are considered together to explain the potential of this approach. The observations support further evaluation, while controlled release, stress protection and field performance remain to be demonstrated.

Keywords: quercetin, nanoformulation, seed coating, germination, seedling vigour, green gram

Introduction

Seed germination begins with water uptake, or imbibition, and proceeds through metabolic reactivation and growth of the embryonic axis. Hormonal regulation and cellular redox processes participate in this transition [1]. Successful germination is only the first stage of establishment: the developing seedling must subsequently sustain root and shoot growth. Seed enhancement therefore considers both the proportion of seeds that germinate and the growth attained by the resulting seedlings.

Seed coating places selected materials on the seed surface before sowing. Its practical purpose is to associate a treatment with the seed rather than distribute it independently through the growing medium. For a bioactive coating, the carrier and active compound must be evaluated together, because the formulation surrounding the seed may influence treatment availability as well as seed response. A useful coating should support germination without imposing an unfavourable physical or chemical environment.

Quercetin is a naturally occurring flavonoid with antioxidant activity, making it a candidate for seed-treatment research. Its poor water solubility, however, complicates direct incorporation into aqueous formulations. Nanoemulsion research has explored dispersing quercetin within an oil-in-water system and protecting it against light-induced degradation [2]. These formulation objectives are relevant to seed application, although protection demonstrated in one carrier cannot be assumed for another.

The antioxidant rationale requires consideration of normal seed physiology. Reactive oxygen species are not exclusively damaging: hydrogen peroxide can also participate in signalling associated with hormonal regulation during imbibition [1]. An antioxidant treatment should therefore be evaluated in terms of the resulting seed response rather than presumed beneficial solely

because it can scavenge reactive molecules. For quercetin, the relationship between concentration, delivery and physiological response is an important question for seed-coating research.

Nanoenabled seed treatments have also been investigated in other pulse crops. Madhan et al. [3], for example, evaluated a different bioactive nanocolloid system in black gram. Such work provides a research context rather than evidence for the present quercetin formulation. The assessment described here concerns green gram and links formulation characterisation with laboratory measurements of germination, seedling length and vigour index.

The Quercetin Nanoformulation Concept

A nanoemulsion disperses an oil phase as fine droplets in an aqueous phase. In the present approach, quercetin is combined with oil, a surfactant and a stabilising polymer. The intended function is to improve its dispersion and maintain availability near the seed during imbibition. This is a delivery-system objective, not evidence that the compound has entered seed tissues or that release has been experimentally controlled.

Surfactant selection, polymer content and processing conditions influence the resulting dispersion. The hydrophilic-lipophilic balance helps describe the affinity of a surfactant for water and oil, while droplet size and size distribution provide complementary measures of formulation quality. Independent quercetin research has shown that changing the lipid carrier can alter release behaviour [4]. Accordingly, the specific formulation used for seed coating requires its own physical and biological validation.

Materials and Methods

Materials and experimental scope

Quercetin was extracted from onion (*Allium cepa* L.) Peels. The nanoemulsion was formulated using medium

chain triglyceride (MCT) oil as the oil phase, with ethanol (high premium grade anhydrous ethanol 100%) from MSB chemical limited Mumbai, carboxymethyl cellulose, Tween 80 were procured from Himedia Laboratories Pvt. Ltd. Mumbai, India and distilled water. Green gram (*Vigna radiata* L.) seeds of VBN 7 variety procured from National Pulse Research Centre, Vamban, Tamil Nadu, India were used for the biological assessment. The work comprised preparation of a quercetin-loaded nanoemulsion, physicochemical characterisation of formulations F_1 and F_2 , and comparison of coated and uncoated seeds under in vitro conditions.

Preparation of the oil and aqueous phases.

For each formulation, the mass of quercetin required to yield a final concentration of 0.25 % w/v for F_1 and 0.50% for F_2 in 100 mL of nanoemulsion). 0.25g and 0.50 g of quercetin was dissolved in 9 mL of ethanol and combined with 9 mL of MCT oil to form the oil phase. The ethanol was subsequently removed by evaporation under stirring at room temperature. The aqueous phase consisted of carboxymethyl cellulose (2% w/v of aqueous phase) and Tween 80 (3.6 mL, equivalent to 4% v/v of the aqueous phase) dissolved in distilled water made up to final volume of 91 mL. The oil phase was gradually added to aqueous phase under continuous stirring at an oil:water ratio of 1:10 (v/v) to obtain a coarse emulsion.

Emulsification and sonication.

The oil phase was introduced gradually into the aqueous phase under continuous stirring at 800 rpm to obtain a coarse emulsion. This dispersion of 100 mL of total volume was then subjected to probe ultrasonication using Vibracell VCX 1500 processor [Sonics & Materials Inc., USA) operating at frequency of 20KHz fitted with a flat tip probe (13 mm diameter)] at 50% amplitude in pulse mode (5s on/5 s off) for a sonication time of 20 min. The formulation container was maintained below 35°C using an ice bath. The preliminary mixing step distributes the phases before size reduction. In ultrasonic emulsification, energy associated with cavitation promotes droplet disruption and size reduction [2].

Physicochemical characterisation.

F_1 and F_2 correspond to the 0.25% w/v and 0.50% w/v quercetin-loaded nanoformulations, respectively, prepared as described above; F_1 was used for the 0.25% quercetin seed-coating treatment and F_2 for the 0.50% treatment reported in Table 2. Each formulation was prepared in three independent batches. Z-average diameter, polydispersity index (PDI), zeta potential was measured using HORIBA SZ-100V2 nanoparticle analyser (Horiba Ltd., Japan) following a dilution of 1:10 with distilled water. Viscosity was measured using DV2 plus viscometer (AMETEK Brookfield, USA) and pH was tested using Testo pH meter

(Testo SE & Co., Germany). All measurements were performed in triplicate on each of the three independent batches and averaged to give the reported values. The Z-average summarises droplet size, whereas PDI describes the breadth of the size distribution. Zeta potential provides information about electrokinetic behaviour, and viscosity and pH describe additional properties relevant to formulation handling and stability.

Seed-coating comparison.

Four treatments were reported: uncoated seeds, nanoformulation without quercetin, and treatments labelled 0.25% and 0.5% quercetin nanoformulation. Germination, seedling length and vigour index were evaluated. The uncoated control represents the untreated baseline, while the carrier-only treatment permits comparison with the formulation components in the absence of quercetin. The two labelled concentrations provide a preliminary comparison of treatment response, rather than a complete dose-response evaluation.

Concentration and applied dose.

The concentration of a bioactive in a liquid formulation and the amount delivered to seeds describe different quantities. The latter also depends on the volume or mass of formulation applied to a defined quantity of seed. Distinguishing these quantities is necessary when relating formulation characterisation to seed response. In this assessment, the concentration labels identify the submitted treatments; the information available does not permit calculation of the quercetin dose retained on each seed.

Seed coating and statistical scope.

Seeds were coated with 10mL of nanoformulation per kg of seed followed by shade drying for 12 h. Treated and control seeds were placed on blotter paper substrate and incubated at 25°C for 7 days in a completely randomized design (CRD) with 5 replicates of 25 seeds each per treatment. Seedling length was recorded as the sum of root and shoot length and vigour index was calculated as germination (%) $\times$ mean seedling length (cm) following Abdalbaki and Anderson (1973). Data were analysed by one-way ANOVA appropriate to the CRD (error degrees of freedom =16), from which the standard error of difference (SED) and critical difference (CD; $P = 0.05$) reported in Table 2.

Results

Physicochemical characteristics

F_2 recorded a smaller Z-average diameter and lower PDI than F_1 (Table 1). Both formulations had negative zeta potentials and the same pH. F_2 had the higher viscosity. These findings distinguish the measured properties of the two formulations, but the available description does not establish which preparation was used in each seed-coating

Table 1. Physicochemical characteristics of quercetin-loaded nanoformulations.

Formulation	Quercetin (%, w/v)	Z-average (nm)	PDI	Zeta potential (mV)	Viscosity (cP)	pH
F1	0.25	187.4	0.589	-41.1	2.45	6.4
F2	0.50	152.1	0.346	-38	3.10	6.4

PDI, polydispersity index. Formulation identities and concentration relationships require author confirmation.

treatment.

Germination and seedling vigour

The treatment labelled 0.50% quercetin nanoformulation recorded the highest germination (84%), seedling length (35 cm) and vigour index (2940). The corresponding values for uncoated seeds were 74%, 24 cm and 1776 (Table 2). Germination therefore increased by 10 percentage points. The 0.25% treatment also recorded higher values than the control, while the formulation without quercetin produced intermediate responses.

Discussion

Interpreting the seed response

The reported response was consistent across the three seed-quality measures: values increased from the uncoated control through the carrier-only treatment to the two quercetin treatments. Germination describes the proportion of seeds responding, while seedling length adds information on subsequent growth. Their joint consideration is therefore more informative than germination alone. The vigour index is retained as reported, without substituting a new calculation for the authors' result.

The carrier-only treatment is particularly important. Its germination was 76%, compared with 74% in uncoated seeds, and its seedling length and vigour index were also higher. These observations show why the response to a formulated active compound should not be attributed exclusively to that compound. They do not establish the mechanism of any carrier effect, but they justify retaining this control in subsequent experiments.

The higher numerical values in the quercetin treatments support further investigation of the combined formulation. However, an equivalent unformulated-quercetin treatment was not included. The experiment therefore cannot isolate the advantage of nanoenabled delivery over quercetin applied without the nanocarrier. Likewise, the highest concentration tested should not be described as an optimum dose: the available comparison does not identify the full response range or a seed-safety threshold.

What the formulation measurements establish

F₂ combines a lower mean diameter with a lower PDI than F₁. This indicates a smaller and less broadly distributed droplet population under the reported measurement conditions, not proof of a uniform or indefinitely stable product. Its higher viscosity is another distinction between the formulations; no evidence is supplied to connect that difference with coating adhesion, coverage or biological performance.

Similarly, nanoscale droplet size does not by itself demonstrate sustained release or protection from degradation. Studies of quercetin in other lipid systems [4] reinforce the need to assess release for the actual composition used. Release behaviour, storage stability and seed response are separate questions that require complementary evidence.

Relevance to biotic and abiotic stress

Nanoenabled approaches to plant stress management provide a broader context for this work [5], but the present experiment did not include a stress challenge. In the

Table 2. Effect of quercetin-loaded nanoformulation seed coating on seed quality in green gram.

Treatment	Germination (%)	Seedling length (cm)	Vigour index
Control (uncoated seeds)	74	24	1776
Nanoformulation without quercetin	76	28	2128
0.25% quercetin nanoformulation	80	32	2560
0.50 % quercetin nanoformulation	84	35	2940
Mean	79	30	2351
SEd	5.164	1.4312	12.4365
CD (P = 0.05)	11.2513	1.1733	27.0968

SEd, standard error of difference; CD, critical difference. All values are reproduced as reported. The basis of the submitted mean row remains to be clarified.

separate study, Govindaraj et al. [6] evaluated quercetin isolated from onion peel against *Meloidogyne incognita* in vitro and in pot experiments. In vitro bioassays (0.025-0.1% quercetin) showed that 0.1% quercetin achieved 100% juvenile mortality within 72 h and reduced egg hatching by approximately 97% after 24 h, relative to untreated controls. In pot experiments, soil application at 0.025-0.125% quercetin reduced nematode populations (galls, females and egg masses per root, and soil population) in tomato without producing visible phytotoxic symptoms over the observation period.

Molecular docking was supportive and hypothesis generating evidence of potential interactions with nematode proteins (including superoxide dismutase, translationally controlled tumor protein, cytidine deaminases and calreticulin) rather than directly confirming their disruption.

Du et al. [7] reported that exogenous quercetin reduced reactive oxygen species accumulation in peanut guard cells and promoted stomatal closure under drought stress. Increased expression of AhNCED1, involved in abscisic acid biosynthesis, was associated with enhanced ABA production. The authors associated these responses with reduced transpirational water loss and improved instantaneous water use efficiency. This provides a physiological basis for examining flavonol-related water-stress responses. However, a response in leaves of peanut does not demonstrate drought tolerance in green gram seedlings treated through the seed coat.

Limitations and future development

The next evaluation should connect a defined formulation with a measured dose on the seed and a reproducible biological response. Priorities include identifying F_1 and F_2 , reconciling concentration labels, and establishing coating uniformity, release profiles and storage behaviour. Comparisons with the carrier alone and dose-matched unformulated quercetin would help distinguish formulation effects from the response to the active compound.

Stress-challenge and field-emergence studies should follow, rather than be inferred from laboratory germination. Seed safety after storage, performance across seed lots and practical handling also require attention. These are proposed validation steps; not additional experiments performed in the present assessment. Their purpose is to determine whether the preliminary response is reproducible and useful under conditions relevant to seed production and crop establishment.

Conclusions

Quercetin-loaded nanoformulation is a promising candidate for further seed-coating research in green gram. The treatment labelled 0.50% recorded the highest numerical germination, seedling length and vigour index among the

treatments evaluated. The carrier-only comparison and physicochemical measurements provide useful starting points for understanding the combined formulation, while preserving the distinction between an observed seed response and a demonstrated delivery mechanism.

The findings support continued development rather than a general application recommendation. Clear formulation identity, reproducible methods and validation of release, seed safety and field performance are necessary before controlled delivery, stress protection or improved crop productivity can be claimed. The immediate research priority is to determine whether the observed gains can be reproduced with a defined formulation and application dose across seed lots and growing conditions.

References:

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Scientific Breakthroughs

Four Parents, One Rice Plant: A New Route to Polyploid Breeding

Fusion of four isolated reproductive cells combines parental genomes in a single laboratory step, producing fertile experimental rice with larger seeds and a new breeding platform.

Combining four rice varieties normally requires successive crosses, during which meiotic recombination reshuffles parental chromosomes. Kazuma Sakoda and colleagues, reporting in *New Phytologist*, developed a more direct experimental route: fusing isolated reproductive cells from four varieties to generate autotetraploid rice. Their approach combines hybridisation and polyploidisation at embryo formation, creating fertile plants with four parental genome contributions and enlarged seeds.

The resulting plants, termed Quad, combined Nipponbare and Taichung 65 from japonica backgrounds, Kasalath from the aus group, and the indica variety IR26. Because all parents belong to *Oryza sativa*, the plants are autotetraploid, carrying four chromosome sets within one species. The authors describe such combinations involving at least three genetically distinct parents as polyparental hybrids, distinguishing them from chromosome doubling within a single variety.

Using an in vitro fertilisation system, the researchers first fused a Nipponbare sperm cell with a Kasalath egg. Separately, they fused egg cells from IR26 and Taichung 65. Joining these two reconstructed cells assembled a tetraploid zygote with three maternal and one paternal gametic contributions. The procedure did not require gene editing or treatment with a chromosome-doubling chemical, and it avoided an intervening generation of crosses to assemble the four genomes.

Genomic assembly was rapid, but plant regeneration still required tissue culture. The reconstructed zygotes divided into two-celled embryos within one day, subsequently forming embryo-like structures, cell masses and calluses. Sequential culture treatments induced shoots and roots, producing plantlets by day 53. Four starting zygotes, cultured in two sets, yielded 15 regenerated plants. These were descendants of a limited number of reconstructed embryos, not 15 independently assembled four-parent combinations.

Flow cytometry confirmed tetraploidy, while analysis of 828 variety-specific DNA markers supported retention of all four parental contributions during development

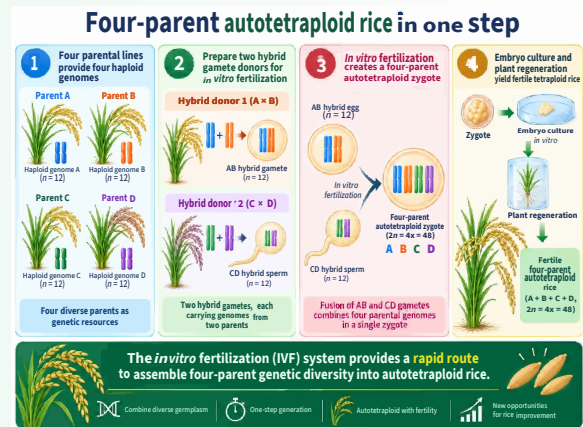


Figure 1. Fusion of gametes from four rice varieties produces fertile autotetraploid plants with enlarged seeds through in vitro regeneration.

and regeneration. Quad plants grew vigorously, with height and flag-leaf length comparable to the tallest parent. Panicles, grains and awns were longer than those of all four parents, and red awns appeared despite their absence in the parental varieties. Seed weight was approximately 1.7 times the parental mean, measured using ten-seed samples; this was not a demonstrated increase in field grain yield.

Fertility provided particularly encouraging evidence. A tetraploid assembled exclusively from Nipponbare gametes failed to set seed, whereas Quad plants and a two-parent tetraploid comparison achieved seed-setting rates comparable to the diploid parents under the experimental conditions. These results suggest that combining distinct genomes can alleviate infertility in some autotetraploid combinations, without establishing that every four-parent combination will be fertile or that four parents are always necessary.

For breeding programmes, the method offers a new route to starting material and a platform for studying interactions among parental genomes. Practical development requires efficient gamete isolation, reliable regeneration and evaluation of inheritance, fertility and agronomic performance across generations. The immediate achievement is direct assembly of fertile four-parent rice, not a finished commercial variety or a guarantee of stable superiority.

Research source

Sakoda, K., Ohnishi, Y., Satoh, A., Okamoto, K., and Okamoto, T. (2026). Instant generation of four-parent-derived autotetraploid rice through an in vitro fertilisation system. *New Phytologist*. DOI: 10.1111/nph.71493

Scientific Breakthroughs

Germinating Sesame Reorganises Its Lignan Chemistry

An enzyme network explains how sesame converts oil-associated lignans into diverse sugar-linked compounds as the dry seed becomes a seedling.

Germination changes not only how sesame uses its reserves but also the chemical forms of its specialised lignans. Oil-associated sesamin and sesamolin decline as water-soluble, sugar-linked compounds accumulate. Erisa Harada and colleagues, in Proceedings of the National Academy of Sciences, identified enzymes coordinating this transition, revealing how closely related proteins generate chemical diversity as a dry seed becomes a seedling.

The researchers combined metabolite profiling, structural analysis, gene-expression measurements and enzyme assays in the sesame cultivar Masekin. Different lignan glucosides followed distinct developmental schedules: major triglucosides peaked on the first day of germination, whereas several diglucosides increased from the second day and plateaued by the third. These patterns indicate coordinated metabolic remodelling rather than simple depletion of seed lignans, and show why sampling stage matters when comparing chemical composition.

Three neighbouring genes encoded the cytochrome P450 (CYP) oxygenases SiCYP706V12, SiCYP706V13 and SiCYP706V14. Although closely related, their proteins modified sesamin differently. SiCYP706V12 primarily produced sesaminol, whereas SiCYP706V13 and SiCYP706V14 generated episesaminone. They also acted on sesamolin and related lignans, giving them a broader substrate range than the previously characterised, sesamin-selective SiCYP92B14. Functional differences among related enzymes therefore create alternative routes from shared starting compounds.

Glucose addition provided a second level of diversification. The newly characterised UDP-glycosyltransferases (UGTs) SiUGT73E4 and SiUGT73CH10 initiated glucosylation of episesaminone, acting alongside enzymes previously associated with sesame seed development. Other glycosyltransferases extended the sugar chains in specific positions and sequences. These selective steps generated structurally distinct mono-, di- and triglucosides, rather than adding sugars indiscriminately. The combined oxygenation and glucosylation reactions explain much of the shift towards water-soluble products during germination.

The investigation also clarified lignan production before germination. A sesame line deficient in sesaminol triglucoside

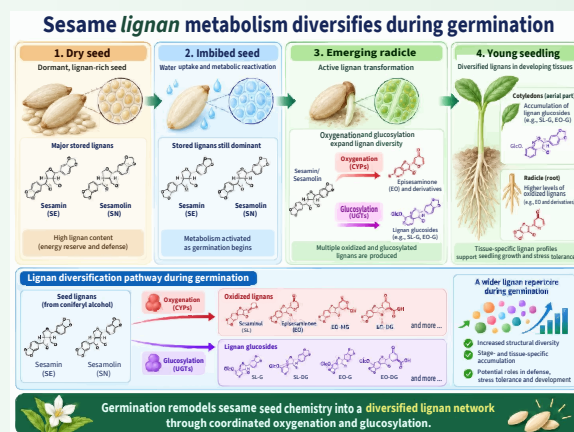


Figure 2. Coordinated CYP oxygenation and UGT glucosylation convert sesame lignans into diverse water-soluble glucosides during germination.

carried a damaging substitution in SiCYP706V12, and the altered enzyme failed to oxidise sesamin in laboratory assays. This implicated SiCYP706V12 in the biosynthesis of that compound during seed development, addressing a gap left by the earlier SiCYP92B14-centred model. Sesame therefore uses overlapping but functionally distinct enzyme systems across development and germination.

Yeast interaction assays detected associations between some oxygenating and sugar-adding enzymes, suggesting that physical cooperation may help coordinate the pathway. However, these experiments did not establish direct transfer of intermediates between enzymes inside living seeds. Similarly, proposed roles in seed durability, protection from harmful metabolite accumulation and seedling physiology remain to be tested. The study establishes biochemical mechanisms, not demonstrated improvements in nutritional value or stress tolerance.

For seed researchers, breeders and processing industries, the findings provide molecular targets for investigating varietal differences and modifying lignan profiles. They also emphasise that total lignan content alone cannot describe the substantial changes in compound identity and sugar-linkage patterns occurring during germination. Future applications require validation in living plants and assessment of consequences for seed performance. The central advance is a mechanistic framework linking developmental timing, enzyme specificity and specialised-metabolite diversity in an economically important oilseed crop.

Research source

Harada, E., et al. (2026). Dynamic diversification of lignan metabolism in sesame via coordinated oxygenation and glucosylation across germination. Proceedings of the National Academy of Sciences, 123(23), e2605774123. DOI: 10.1073/pnas.2605774123

ISST Balance Sheet as at 31 March 2026

INDIAN SOCIETY OF SEED TECHNOLOGY F-5, A BLOCK, NASC COMPLEX, DPS MARG, NEW DELHI-110012 Balance Sheet							
AS AT 31ST MARCH 2025 Amount (Rs)	Liabilities	AS AT 31ST MARCH 2026		AS AT 31ST MARCH 2025 Amount (Rs)	Assets	AS AT 31ST MARCH 2026	
		Amount (Rs)	Amount (Rs)			Amount (Rs)	Amount (Rs)
6,091,605.00	Capital Account				Fixed Assets		
	Corpus Fund		6,091,605.00		AC	13,344.00	
				13,344.00	Less: Depreciation	2,002.00	11,342.00
	Reserves & Surplus				Laptop	282.00	
4,299,540.71	Opening Balance	4,019,647.87		282.00	Less: Depreciation	113.00	169.00
-178,130.84	Add/Less: Current Period	351,315.18			Water Dispenser	2,011.00	
-101,762.00	Less/Add: Tax liability/Refund	106,389.00		2,011.00	Less: Depreciation	302.00	1,709.00
4,019,647.87			4,477,352.05		Furniture	67,099.00	
	Current Liabilities			67,099.00	Less: Depreciation	6,710.00	60,389.00
5,900.00	Professional Charges Payable	8,850.00			Heat Converter	4,366.00	
225,000.00	Rent Payable	300,000.00		4,366.00	Less: Depreciation	655.00	3,711.00
6,500.00	Accounting charges payable	6,500.00			Printer	16,915.00	
20,000.00	Salary Payable	23,000.00		16,915.00	Less: Depreciation	6,766.00	10,149.00
5,485.00	Provision for Income Tax	-			LG Smart TV dtd 10.12.2025	65,300.02	
262,885.00			338,350.00		- Less: Depreciation	4,897.02	60,403.00
				104,017.00	Micro phone dtd 10.12.2025	19,647.00	
					- Less: Depreciation	1,474.00	18,173.00
					Induction dtd 29.12.2025	2,009.00	
					- Less: Depreciation	301.00	1,708.00
				9,963,461.90			167,753.00
				124,004.00	Investments		
				72,257.00	Fixed Deposits		10,088,250.90
					Current Assets		
				7,057.00	ICAR	124,004.00	
				103,340.97	TDS	69,854.00	193,858.00
					Other Current Assets		
					Cash in Hand	2,321.00	
					Canara Bank	455,124.15	457,445.15
10,374,137.87	TOTAL		10,907,307.05	10,374,137.87	TOTAL		10,907,307.05
For R Niwas Aggarwal & Co Chartered Accountants FRN 003253N				For Indian Society of Seed Technology			
Sd/- (CA Chanchal Aggarwal) Partner Mno 502926 Place: Delhi Date: 05/05/2025				Sd/- Secretary Authorised Signatory		Sd/- Treasurer Authorised Signatory	

NOTE:

All the ISST members are requested to contribute to various columns of Seed Tech News by providing information on a) Awards and Honours received; b) Upcoming trainings/ events; c) Recommendations of scientific gatherings; d) Latest research findings etc. In addition, brief technical notes may also be submitted for fast dissemination.

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