

## ... of the Year



**December is a time when ‘... of the Year’ pieces appear in all kinds of publications. For this year only, *Nature Plants* is joining the trend.**

In the last month of the year, publications traditionally try to identify a singular thing, person, or event that has been of particular prominence in the previous 11 months. These are different from annual awards such as the Oscars, Grammys, or Royal Society Science Book Prize (won this year by Masud Husain’s *Our Brains, Our Selves*, a book about neurology and the nature of self), as they do not necessarily reward an outstanding achievement but rather look for something that can serve as a reflection of the year.

The best known, and where the idea originated, is the *Time* Person of the Year, which was started in 1927 by the editors of *Time* magazine to fill the slow news days between Christmas and the start of the new year. The first recipient was Charles Lindbergh, who had made the first solo non-stop transatlantic flight.

In 1989, *Science* attempted something similar, but rather than focus on a person they decided to select a ‘Molecule of the Year’, choosing DNA polymerase, which, given its central role in the polymerase chain reaction (PCR), is a molecule whose effect on science (certainly on biology) would be difficult to overestimate. However, Molecule of the Year only lasted until 1996, when it was relaunched as ‘Breakthrough of the Year’.

None of these yearly breakthroughs have been directly related to plant research. Possibly the closest came in 2002, when RNA interference (RNAi) by small RNAs was cited, as some of the crucial studies in that area had taken place in plants. However, last year, one of the runners-up for the 2024 Breakthrough of the Year was RNA pesticides, following the US Environmental Protection Agency’s approval of the insecticide Calantha for use against the Colorado potato beetle. The spray delivers small RNA molecules that specifically prevent expression of a component of the beetle’s proteasome (PSMB5), causing the accumulation of non-functional proteins and thus the death of the beetles.

At the time of writing, the 2025 Breakthrough of the Year is yet to be announced;

however, the ‘Word of the Year’ has been. There are actually a number of different words of the year as all of the major dictionaries like to name their own. Most of the words chosen for 2025 have some relationship to social media or artificial intelligence. Collins English Dictionary has selected ‘vibe coding’, which is the process of asking a large language model (LLM) to write computer code for a specific application and then using the LLM to fix bugs and further ‘improve’ the code so that the final result has had no direct human involvement and no-one is quite sure what is actually in the code or how it works. The Macquarie Dictionary of Australian English has chosen ‘AI slop’: images, text or other forms of digital content that have been lazily and quickly produced without depth or quality, something we have thankfully not seen too much of at *Nature Plants* so far.

The Cambridge Dictionary has opted for ‘parasocial’, a word relating to the phenomenon where people see famous individuals or celebrities in the media so much that they develop a personal relationship with them and believe it to be reciprocated. And finally, the Oxford English Dictionary has chosen ‘rage bait’: internet content the sole purpose of which is to cause outrage in consumers in order to increase online traffic, engagement and ultimately, revenue – like ‘AIP slop’, not something we are intentionally creating at *Nature Plants*.

There are already quite a number of ‘Plants of the Year’, but these are to do with horticulture rather than plant science and are more of a prize. For example, the Royal Horticultural Society named the *Philadelphus* variety Petite Perfume Pink as its plant of 2025 back in May at its annual Chelsea Flower Show, citing it as the first truly pink-flowered *Philadelphus*.

If we can’t name a Plant of the Year, we wondered whether we could suggest a *Nature Plants* Word of the Year: a word that represents a change or development in some field of plant biology in 2025. Our best suggestion is ‘ground-truthing’.

Ground-truthing is the practice of validating results and conclusions derived from large-scale proxy data, often from remote sensing, by direct measurements at representative locations. It isn’t a word that has appeared much in what we have published.

In fact, it has appeared only once in our published corpus, in a paper published back in 2017 about the predicted effects of climate change on coffee in Ethiopia<sup>1</sup>. However, ground-truthing has been turning up more and more during peer review, with reviewers increasingly requesting – often strongly requesting – the inclusion of field data that validate the ecological relationships inferred from remotely-sensed estimates of vegetation parameters, especially those related to functional traits. Such data are generally obtained from one of NASA’s satellite-mounted Moderate Resolution Imaging Spectroradiometers (MODIS) or from the Tropospheric Monitoring Instrument (TROPOMI).

This July, we published a study using remotely-sensed sun-induced chlorophyll fluorescence (SIF) data from TROPOMI to look at photosynthesis on an ecosystem scale and how it is related to tree species richness<sup>2</sup>. The researchers validated their results with near-infrared measurements from MODIS and combined these with diversity data from 967 ground plots to show that species richness is positively correlated with ecosystem photosynthesis.

A further example of ground-truthing came in a paper we published in September identifying how trade-offs in leaf acclimation strategies feed-in to drivers of vegetation greening<sup>3</sup>. The researchers used measures of leaf area index and season length derived from MODIS data products. They ground-truthed the negative correlations that emerged using data from the USA National Phenology Network and the Pan European and northern Eurasia Phenological databases, combining field measurements on leaf mass area, specific leaf area and leaf dry matter content.

We are not at a point where ground-truthing is a requirement for the publication of studies based on remotely-sensed proxy data; but the rising frequency with which it is mentioned in reviewer comments shows its importance is becoming increasingly recognized.

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### References

1. Moat, J. et al. *Nat. Plants* **3**, 17081 (2017).
2. Cao, R. et al. *Nat. Plants* **11**, 1429–1440 (2025).
3. Wang, F. et al. *Nat. Plants* **11**, 1748–1758 (2025).