trofoni
Sowing Possibilities.

Mapping November 23, 2026 · 2 min read

What is NDVI and what is it for on the farm? What it shows and what it does not

NDVI is a vegetation index that reveals differences in vigour within a field or an orchard. It tells you where to look, not why. A short guide, with background from Uruguay.

By **Trofoni team**

NDVI is probably the most repeated acronym in precision agriculture, and also the most misunderstood. It is worth understanding what it measures before making a decision with a coloured map in hand.

What a vegetation index measures

Multispectral images record vegetation reflectance in visible and non-visible bands. From those bands, indices such as **NDVI, EVI and NDRE** are calculated, making it possible to observe differences in vigour, cover, chlorophyll and behaviour over time.

Put simply: the index shows that one part of the field, or one tree in the orchard, is responding differently from its neighbours.

What it is for

Its main use is to locate variability, delimit zones and direct sampling or field visits. In practice, that translates into decisions such as:

- prioritizing a field visit;
- adjusting a management unit;
- organizing grazing or estimating forage supply;
- reconciling a tree inventory;
- documenting damage.

The value appears when the information changes one of those decisions. If it changes none, it is just a map.

What NDVI does not tell you

This is the most common misunderstanding. An index identifies a different response, but **it does not determine on its own whether the cause is water, nutrition, plant health, soil, management or crop structure**.

The index points; the field visit confirms. That is why a serious service does not end at the map: it ends with field verification.

Background in Uruguay

Using indices is not an imported novelty. In Uruguay, INIA GRAS and the National Agricultural Information System use NDVI, EVI and radiation series for agroclimatic and production monitoring.

Studies by the Universidad de la República show local results, and their nuances:

- **Rice:** the relationship between NDVI and yield changed depending on the preceding crop. The same index value does not mean the same thing in two fields with different histories.
- **Fescue pastures:** drone imagery reached associations of R^2 0.74 with biomass and R^2 0.76 with measured height.
- **Tannat vineyards:** high-resolution imagery was used to differentiate vigour zones.

The common reading is that the index works when combined with farm data and field validation.

How we use it at Trofoni Mapping

The index is one step in a sequence: initial image, anomaly, inspection, intervention and new image. The anomaly is defined against comparable groups, validated in the field and measured again to assess the response.

To see how it applies in a citrus orchard, look at the citrus case.

Sources

- INIA GRAS. NDVI, EVI and radiation series for agroclimatic monitoring.
- National Agricultural Information System (SNIA), Uruguay.
- Universidad de la República. NDVI studies in rice, fescue pastures and Tannat vineyards.
- Trofoni Mapping. Service documentation, 2026.

This article states sources, date and limits. It is not advice for a particular case.

https://trofoni.com/en/insights/what-is-ndvi