

Name:

Nitrogen efficiency.

Definition:

Nitrogen use efficiency is the ratio between the amount of fertilizer N removed from the field by the crop and the amount of fertilizer N applied.

Method of calculation:

This indicator is calculated by estimating the N use efficiency in each plot/crop.

$$\text{Indicator} = \frac{\sum_i (NE_i \times A_i)}{A_T}$$

Where:

Indicator: Total nitrogen use efficiency (total N uptake (kg) per fertilizer N applied (kg))

NE_i: The nitrogen use efficiency of crop *i*

A_i: Area for the crop *i* (ha)

A_T: Total area considered (ha)

The nitrogen use efficiency of each crop is estimated as the ratio between the amount of fertilizer nitrogen removed with the crop and the amount of fertilizer nitrogen applied through fertilization.

Interpretation:

Higher nitrogen use efficiency means better use of fertilizers by the crop.

Information source:

Crop area, applied inputs and yields of the different crops: data obtained in a farmers survey. The values of crop nitrogen uptakes by the crops and the values of nitrogen fixation by legumes: data obtained in bibliography.

Bibliography and references:

European Environment Agency. Indicator Fact Sheet IRENA 18.1 – Gross nitrogen balance

Ministerio de Medio Ambiente y Medio Rural y Marino (2010). Guía práctica de la fertilización racional de los cultivos en España.

Ministerio de Agricultura, Alimentación y Medio Ambiente (2015). Balance del nitrógeno en la agricultura española, año 2013. Metodología y resultados.

OECD / Eurostat. Gross nitrogen balance handbook (2007)