

**Name:**

Phosphorous efficiency.

**Definition:**

Phosphorous use efficiency is the ratio between the amount of fertilizer phosphorous (P in P<sub>2</sub>O<sub>5</sub> form) removed from the field by the crop and the amount of fertilizer P<sub>2</sub>O<sub>5</sub> applied.

**Calculation method:**

This indicator is calculated by estimating the P use efficiency in each of the plots / crops.

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

Where:

Indicator: Total phosphorous efficiency (kg P output per kg fertilizer P)

PE<sub>i</sub>: The phosphorous efficiency of crop *i*

A<sub>i</sub>: Area for the crop *i* (ha)

A<sub>T</sub>: Total area considered (ha)

The phosphorous efficiency of each of the crops is estimated as the division between the phosphorous included in the harvested production and phosphorous applied with fertilization.

**Interpretation:**

Greater phosphorous efficiency means better use of fertilizers by the crop.

**Information source:**

Crop area, applied inputs and yields of the different crops are taken from the survey.

The values of extractions of phosphorous by the crops are taken from the attached bibliography.

**Bibliography and references:**

IRENA 18 – Gross nitrogen balance. OECD / Eurostat Nitrogen handbooks (2007)

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 fósforo en la agricultura española, año 2013. Metodología y resultados.