

The nutritional value of Andalusian lupines is revealed

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Pictured are *Lupinus luteus* and *Lupinus angustifolius*. Credit: Vioque et al. / SINC

A group of researchers from the Fat Institute (CSIC) and the University of Seville have confirmed that some wild plants have a high nutritional value. The scientists have found that several species of lupins from the mountains of Andalusia have a protein content similar to that of other cultivated legumes, as they publish in the online version of the *Food Chemistry* magazine.

Javier Vioque is a scientific researcher from the Fat Institute (CSIC) in Seville. "We have studied the seeds of six species of lupin (*Lupinus sp.*) in the south of Spain and we believe that they may represent new sources of quality proteins", he explained to SINC.

The cultivated lupin, a legume which is used as cattle fodder (although its grains are also edible if the bitterness is removed with water and salt), belongs to the *Lupinus albus* species, but the researchers have focused on six other species which grow wild in Andalusia or are cultivated in a marginal manner: *Lupinus angustifolius*, *L. cosentinii*, *L. gredensis*, *L. hispanicus*, *L. luteus* and *L. micranthus*.

Vioque and other colleagues from the Fat Institute and the University of Seville have analyzed the composition of the [amino acids](#) which make up the seed proteins, as well as the "[protein digestibility](#)" (percentage of protein digested) and other nutritional parameters. The results of the work will be published at the end of the year in the [Food Chemistry](#) magazine, although they can already be viewed online.

The data reflect that the species studied display a high protein content fluctuating between 23.8% and 33.6%, very similar to that observed in other legumes. Moreover, the protein digestibility of these lupins is high (between 82% and 89%) and is also similar to that of other legumes and cereals. The study concludes that *L. luteus*, *L. hispanicus* and *L. cosentinii* contain the proteins with the best nutritional properties and that the amino acid composition of the latter species is the most balanced.

Legumes as a source of proteins

Legumes, together with cereals, represent the main source of vegetable proteins in the human diet. The beans and fruits of these plants, as well as having a high content of quality protein, are rich in fibre and carbohydrates and contain other components like polyphenols. For this reason, several studies have confirmed that the consumption of these legumes is beneficial for our health and may help to prevent illnesses such as diabetes and colon cancer.

Despite the above, the consumption of legumes has decreased in recent

years, especially that of autochthonous and locally-distributed species. The legumes of the *Lupinus* species are no exception to the problem.

"For the conservation and expansion of these local crops, we need to continue studying their characteristics as a source of food", indicated Vioque, who emphasizes that research like this "confirms the interest in studying populations of wild species, cultivated or not, so that they can provide seeds with good nutritional properties".

More information: Elena Pastor-Cavada, Rocío Juan, Julio E. Pastor, Manuel Alaiz y Javier Vioque. "Analytical nutritional characteristics of seed proteins in six wild *Lupinus* species from Southern Spain". *Food Chemistry* 117 (3): 466-469, 2009.

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