Plant food supplements Survey of their use in Europe

Tiziana Mennini

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The results of the first European survey on consumption of plant food supplements (PFS) — led and coordinated by researchers at the Fundación para la Investigación Nutricional (FIN; Foundation for Nutritional Research) from the Parc científic de Barcelona in Spain — have been recently published in the journal *PLoS ONE* [1].

The survey was conducted as part of the project PlantLIBRA (an acronym for Plant food supplements: Levels of Intake, Benefit and Risk Assessment (www.plantlibra.eu)), co-financed by the European Commission within the European Union's 7th Framework Programme.

The survey was conducted from May 2011 to August 2012 by six partner centres from the six European countries participating in the project: Finland, Germany, Italy, Romania, Spain and the United Kingdom. Data were collected from 2359 PFS consumers residing in 24 European cities (4 per country) through a questionnaire of 58 questions completed during personal interviews. Study results have provided data to assess the sociodemographic profile of PFS users, the usage patterns of these products, the actual products consumed and their botanical ingredients.

According to Alicia García-Álvarez, researcher at FIN and coordinator of the survey, “the survey was conducted using the same methodology in all six countries, which allows us to compare the data obtained and bring to light information about the consumption of these products that to date was nonexistent or not comparable. We now know for example, that in these countries a wide variety of PFS from a wide variety of manufacturers and distributors is consumed and that 83.7% of respondents consume only one product, and 51.5% of products usually contain a single botanical ingredient.”

In addition, Lluís Serra-Majem, chairman of FIN, professor at the IUIBS-ULPGC and CIBER OBN and responsible for the survey, explains that “through this survey, 491 different botanical ingredients contained in the PFS consumed have been identified. Global survey raw data show that the 10 botanical ingredients most frequently consumed in PFS (i.e., by more than 100 consumers) are, in descending order: *Ginkgo biloba* (ginkgo), *Oenothera biennis* (evening primrose), *Cynara scolymus*, (artichoke), *Panax*

ginseng (ginseng), *Aloe vera* (aloe), *Foeniculum vulgare* (fennel), *Valeriana officinalis* (valerian), *Glycine max* (soybean), *Melissa officinalis* (lemon balm), *Echinacea purpurea* (echinacea) and *Vaccinium myrtillus* (bilberry). This order changes if we analyze each country separately; for example, in Spain the most consumed PFS botanical ingredient is *Cynara scolymus* (artichoke).

Other main results include:

- A total of 1288 different products were reported across the six countries, with the highest proportion of different PFS being used in Italy and Spain. In the United Kingdom, the number of different products was approximately half that of the other countries.
- 22.2% of participants said that they use PFS when experiencing a “flare up or worsening of a condition”.
- The most common dose forms were capsules and pills/tablets/lozenges.

Moreover, Monique Raats, Director of the Food, Consumer Behaviour and Health Research Centre at the University of Surrey in the United Kingdom, one of the survey's partner centres, points out that “this survey provides us with a much clearer understanding of consumer behaviour, giving us data on the numbers of products/ingredients being consumed and details of the forms of supplements consumers are taking.”

From a more global perspective, Patrizia Restani (Department of Pharmacological and Biomolecular Sciences) at the University of Milan in Italy, Coordinator of the project PlantLIBRA and partner centre of the survey, adds that “having consumption data for these products (i.e., what products are consumed, how and by whom) will help assess the risks and benefits of PFS and their botanical ingredients, which in turn will facilitate the decision-making by regulators and the industry. Our work can be used by other groups who want to contribute to the pool of knowledge in this field.”

References

1. Garcia-Alvarez A, Egan B, de Klein S, Dima L, Maggi FM et al (2014) Usage of plant food supplements across six European countries: findings from the PlantLIBRA Consumer Survey. *PLoS ONE* 9(3):e92265.

Tiziana Mennini (✉)
Milan, Italy
tm@ceceditore.com