

Evaluation of the adherence of elderly volunteers living in retirement homes to the regular consumption of high-protein and high-fiber apple compote

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Context

Making sure that elderly people consume proteins and fibers in an appropriate way is a crucial concern for preventing sarcopenia and maintaining intestinal balance. Taking such dietary supplements, however, frequently comes up against a lack of adherence by elderly volunteers. In this context, apple compote constitutes an excellent matrix for protein and fiber enrichment.

Objectives

Primary objective

The primary objective was to evaluate the perception of the hedonic properties of apple compote containing pea protein NUTRALYS[®] pea XF (5.1%), hydrolyzed wheat gluten NUTRALYS[®] W (0.9%) and wheat soluble fiber NUTRIOSE[®] FB06 (6.3%) by elderly volunteers living in retirement homes, along with changes to this perception after repeated consumption.

Secondary objectives

The secondary objectives were to evaluate the quantity of apple compote consumed by elderly volunteers, their satisfaction regarding this consumption, the evolutions of their digestive comfort and of their fatigue following the intake of the apple compote for 3 weeks.

Test product

Apple compote enriched in pea protein NUTRALYS[®] pea XF (5.1%), hydrolyzed wheat gluten NUTRALYS[®] W (0.9%) and wheat soluble fiber NUTRIOSE[®] FB06 (6.3%), biscuit flavor.

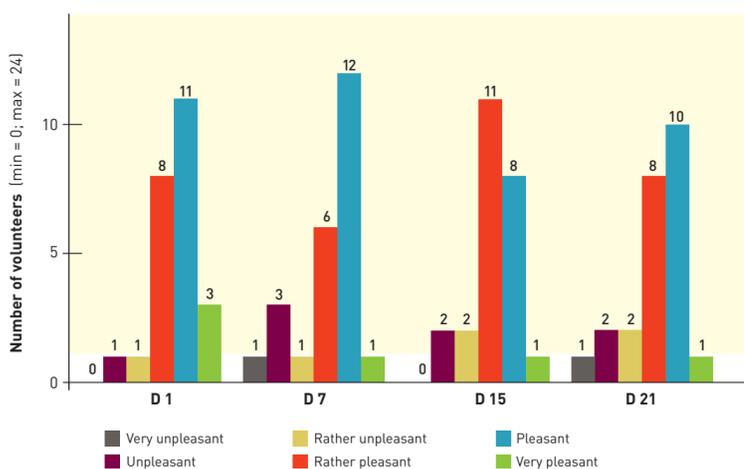
Methodology

Observational study conducted on elderly volunteers (70 to 90 years) living in retirement homes. The primary criterion was the Hernandez and Lawless hedonic scale. The secondary criteria were digestive comfort, measured by the Gastrointestinal Quality of Life Index, tiredness using the Pichot scale and apple compote consumption. The apple compote was proposed every 2 days as a dessert at lunch over a period of 3 consecutive weeks. All criteria were evaluated on D0 and/or D1, D7, D15 and D21, with the exception of the quantity consumed, that was weighed after each apple compote intake.

Results

- 24 elderly volunteers with a mean age of 83.7 ± 6.2 years, 62.5% of whom were female, were included.
- During the initial intake, the apple compote were deemed "rather pleasant" to "very pleasant" by 91.7% of the population, and this appreciation remained at 79.2% ($p = 0.1797$) after one week, at 83.3% ($p = 0.3173$) after 2 weeks and at 79.2% ($p = 0.2568$) after 3 weeks (graph 1).

Graph 1 : Evolution of apple compote's taste score

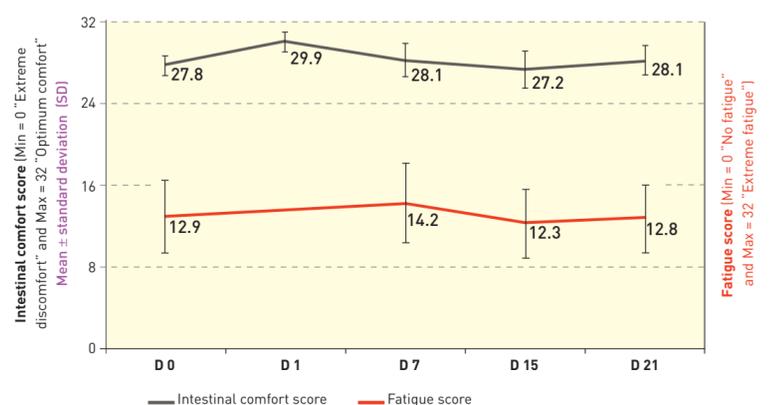


In terms of mean appreciation, opinions also remained stable, ranging from $4.6\% \pm 0.9\%$ upon inclusion to $4.1\% \pm 1.2\%$ on D21 ($p = 0.3190$), i.e. a relative value drop of 10.1%. No negative taste's appreciation induced any stopping of the study.

- Fatigue, evaluated according to the Pichot scale, was stable, ranging from 12.9 ± 8.5 at inclusion, to 14.2 ± 9.4 ($p = 0.6547$) after one week, to 12.3 ± 8.0 ($p = 0.0832$) after 2 weeks and 12.8 ± 8.2 ($p = 0.5637$) after 3 weeks (graph 2).

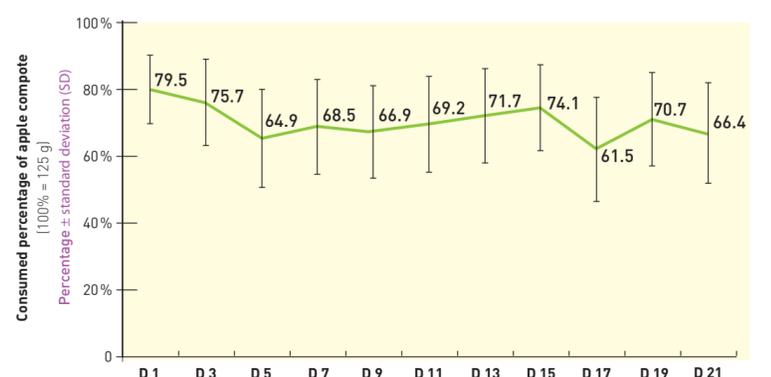
- The digestive comfort of the volunteers was generally stable, with variations of less than 2% between the inclusion and the end of the study (graph 2).

Graph 2 : Evolution of the volunteers' well-being



- Average amount of apple compote consumption was stable and varied between a maximum upon inclusion of 79.5% of total amount to a minimum of 61.5% recorded on D17. No notable adverse events were reported (graph 3).

Graph 3 : Evolution of the percentage of consumption of the apple compote



Conclusion

Nine out of 10 elderly volunteers enjoy the taste of the test apple compote and this taste adherence persists in 8 out of 10 elderly volunteers after three weeks of regular consumption. This regular consumption seems to induce neither any digestive discomfort nor fatigue in the elderly volunteers. The pea protein NUTRALYS[®] pea XF, hydrolyzed wheat gluten NUTRALYS[®] W and wheat soluble fiber NUTRIOSE[®] FB06 thus appear to constitute suitable protein and fiber supplementation solutions in the context of diets for institutionalized elderly persons.