The health benefits of NUTRALYS® pea protein in healthy volunteers:

Offering the best of plant-based nutrition to meet specific needs at different steps of life

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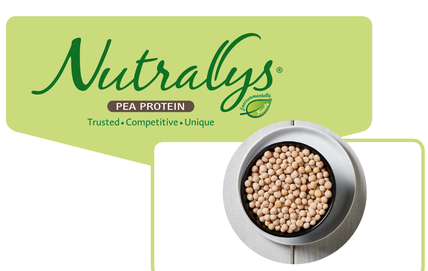
STUDY OBJECTIVES



The nutrient requirements during the different stages of the human lifecycle vary considerably. Adults wishing to control their caloric intake, sportsmen wishing to develop their muscle mass or older adults wishing to keep pleasure when eating, all have different nutritional and metabolic needs.

ROQUETTE has developed **a range of vegetable proteins** produced from yellow pea. **NUTRALYS® pea protein** is a great source of proteins both **qualitatively** and **quantitatively**, rich in Branched Chain Amino Acids and Arginine.

The objectives of the present research were to investigate various benefits of NUTRALYS® pea protein :

- ✓ the **satiating properties** in **healthy volunteers**,
- ✓ the impact on **muscle mass development** in **sportsmen**,
- ✓ the **hedonic adherence** of **elderly people** to a diet while incorporating NUTRALYS® pea protein.

METHODS

Energy intake control

Healthy volunteers
n=33/group

1 day

Isocaloric Soup at 11:00am with :
- ✓ 15g or 30g NUTRALYS® pea protein
- ✓ 30g whey protein
- ✓ no protein

Energy intake at a subsequent *ad libitum* lunch (02:00pm)

Muscle mass development

Sportsmen practicing moderate or occasional sport
n=53 to 54/group

- ✓ 12 weeks
- ✓ Resistance training 3 times/ week

Isocaloric Beverage twice a day with :
- ✓ 50g NUTRALYS® pea protein/day
- ✓ 50g whey protein/day
- ✓ no protein

Biceps brachii thickness evolution by ultrasonography

Pleasure of eating

Elderly volunteers living in nursing homes
n=24

3 weeks

Apple compote every 2 days:
- ✓ 5.1% NUTRALYS® pea protein
- ✓ 0.9% NUTRALYS® W hydrolyzed wheat gluten
- ✓ 6.3% NUTRIOSE® soluble fiber

Hedonic satisfaction evolution by questionnaires

RESULTS

Energy intake control

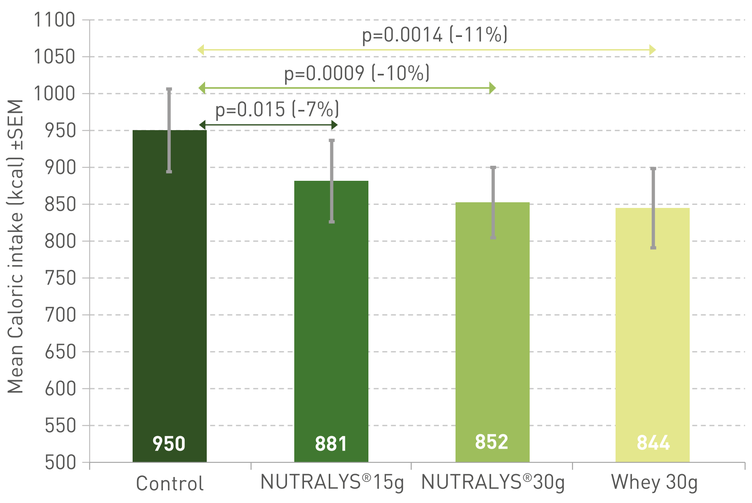


Fig. 1: Energy intake of an *ad libitum* meal

- ✓ Significantly lower energy intake in the NUTRALYS® pea protein and whey protein-containing soups vs. control
- ✓ No differences between the proteins groups

Muscle mass development

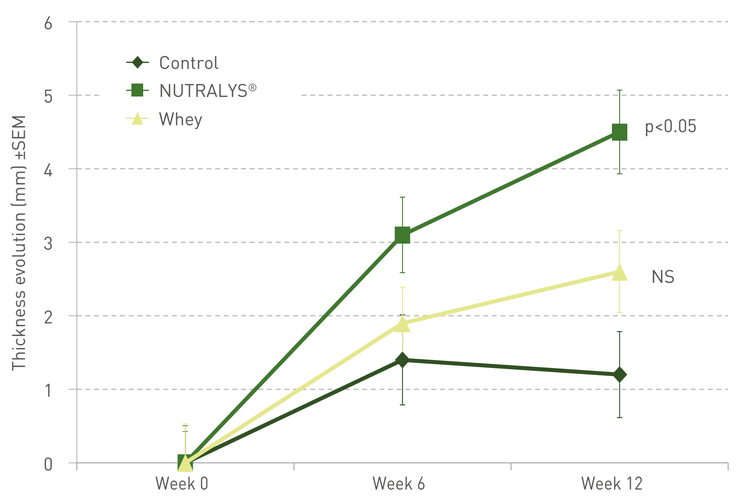


Fig. 2: Muscle thickness evolution in a sub-population with a moderate muscular strength (n=17 to 31)

- ✓ Significantly higher muscle thickness in the NUTRALYS® pea protein group vs. control
- ✓ No differences between the whey group vs. the 2 other groups

Pleasure of eating

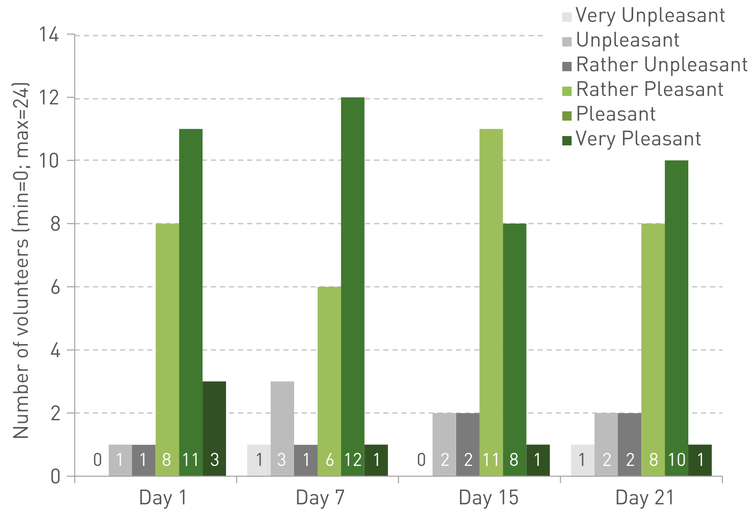


Fig. 3: Evolution of the compote's taste score

- ✓ "Rather pleasant" to "Very pleasant" evaluation by more than a fifth of the volunteers
- ✓ No significant evolution over the study period

CONCLUSION

NUTRALYS® pea protein is a promising ingredient:
- ✓ for **supporting** the efforts of people concerned with their **caloric intake**,
- ✓ for **optimizing muscle mass development** in people starting or returning to a muscular sport, in addition to an appropriate training,
- ✓ for elderly population, from an organoleptic point of view, to **design high-protein foods**.

These results demonstrate that **NUTRALYS® pea protein** is a powerful alternative to **animal proteins** cumulating **positive attributes** and **offering the best of plant-based nutrition to meet specific needs at different steps of life.**

References: Babault *et al.*, 2015, J Int Soc Sports Nutr; Allaert *et al.*, 2016, Aging Clin Exp Res; Re *et al.*, 2016, J Nutrition Health Food Sci