# Measuring the nutritional quality of duckweed protein in comparison with green pea protein in healthy volunteers

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• The amino acid profile of duckweed derived protein may be different from pea derived protein. • The glucose and insulin responses of duckweed protein may be different compared to those of pea protein. • A single intake of duckweed and pea…

| | |
|---|---|
| **Ethische beoordeling** | Positief advies |
| **Status** | Werving gestopt |
| **Type aandoening** | - |
| **Onderzoekstype** | Observationeel onderzoek, zonder invasieve metingen |

## Samenvatting

### ID

NL-OMON22743

**Bron**
NTR

**Verkorte titel**
Pro-2-study

**Aandoening**

Postprandial metabolism of protein in healthy volunteers

Verteringskinetiek van eiwit bij gezonde mensen

### Ondersteuning

**Primaire sponsor:** Wageningen Food & Biobased Research
**Overige ondersteuning:** Wellcome trust

### Onderzoeksproduct en/of interventie

### Uitkomstmaten

### Primaire uitkomstmaten

Serum amino acids

## Toelichting onderzoek

### Achtergrond van het onderzoek

The primary objective of this cross-over study is to assess the post-prandial serum amino-acid profile of duckweed protein in 15 healthy adult volunteers in comparison to a another plant-based high-protein crop: green pea. A secondary objective is to assess post-prandial plasma glucose and insulin responses after a single intake of duckweed protein in healthy adult volunteers in comparison with the reference pea protein, as well as the acute health parameters heart rate, blood pressure and aural temperature and the occurrence of gastro-intestinal complaints.

### Doel van het onderzoek

• The amino acid profile of duckweed derived protein may be different from pea derived protein.

• The glucose and insulin responses of duckweed protein may be different compared to those of pea protein.

• A single intake of duckweed and pea protein will give no negative effects in acute health parameters.

• The number of gastro-intestinal complaints after a single intake of duckweed may be different compared to the number of gastro-intestinal complaints after a single intake of pea protein.

### Onderzoeksopzet

Eleven blood samples are taken each 15-30 minutes for a period of 3 hours.

Gastro-intestinal complaints during 4 days.

### Onderzoeksproduct en/of interventie

Subjects come to the research facility in fasting state twice to consume a soup with duckweed or a soup with pea. Two blood samples will be drawn before consumption. After consumption, blood samples will be taken 9 times (each 15-30 minutes) for a period of three hours to assess the free amino acids as well as glucose and insulin levels to get insight into

the post-prandial metabolism of the two plant proteins.

# Contactpersonen

## Publiek

Wageningen Food & Biobased Research

Jurriaan Mes
Wageningen
The Netherlands
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## Wetenschappelijk

Wageningen Food & Biobased Research

Jurriaan Mes
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The Netherlands
-

# Deelname eisen

## Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• Healthy as assessed by a health and lifestyle questionnaire and normal blood clinical laboratory tests for haemoglobin, kidney and liver functioning

• Age between 18 and 50 y (boundaries included) at day 01 of the study

• Body mass index (BMI) between 19 and 25 kg/m2 (boundaries included)

• Appropriate veins for blood sampling (judged by a study nurse or medical doctor)

• Willing to abstain from blood donation one month before and during the study

• Willing to abstain from the use of protein supplements during the study period

• Signed informed consent

• Willing to comply with the study procedures

### Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

• Any metabolic, gastrointestinal, inflammatory or chronic disease (such as diabetes, anaemia, hepatitis, cardiovascular disease)

• History of gastro-intestinal surgery

• History of liver dysfunction (cirrhosis, hepatitis) or liver surgery

• Kidney dysfunction (eGFR <60 ml/min)

• Any concomitant medication that may influence the study results, such as gastric acid inhibitors or laxatives (occasional use of paracetamol is allowed)

• Intensive sporting activities (>16 hours per week)

• Current smoker

• Alcohol intake (≥3 glasses of alcoholic beverages per day)

• Pregnant, lactating or wishing to become pregnant in the period of the study (self-reported)

• Use of hard drugs

• Known allergies towards the products used in the study

• Not willing to consume chicken broth

• Participation in another clinical trial at the same time

• Being an employee of the responsible and executing research facility

## Onderzoeksopzet

### Opzet

| | |
|---|---|
| Type: | Observationeel onderzoek, zonder invasieve metingen |
| Onderzoeksmodel: | Cross-over |

| | |
|---|---|
| Toewijzing: | Gerandomiseerd |
| Blindering: | Enkelblind |
| Controle: | Geneesmiddel |

### Deelname

Nederland

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|---|---|
| Status: | Werving gestopt |
| (Verwachte) startdatum: | 01-11-2017 |
| Aantal proefpersonen: | 15 |
| Type: | Werkelijke startdatum |

### Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

**Wordt de data na het onderzoek gedeeld:** Nog niet bepaald

## Ethische beoordeling

Positief advies

| | |
|---|---|
| Datum: | 15-06-2017 |
| Soort: | Eerste indiening |

## Registraties

### Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

### Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

### In overige registers

| Register | ID |
|---|---|
| NTR-new | NL6194 |
| NTR-old | NTR6516 |

| Register | ID |
| --- | --- |
| Ander register | ABR / METC Wageningen number : 62305.081.17 / 17/13 |

# Resultaten