



Menu of Services
for SMEs in North-West Europe

CALL 2

APPLY NOW!

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Select services from our menu

ValuSect (valuable insects) is a project to support SMEs in being successful in the insect food market

At a time of rising population and decreasing resources, especially in a very densely populated area like North-West Europe, sustainable alternatives for resources for food are needed. Insects could be one of them. As part of Interreg North-West Europe, the ValuSect consortium aims **to strengthen the transnational cooperation and exploitation of research on insects as resources for the development of (semi-) finished food products.**

Currently mainly driven by demand from migrated communities or by the development of niche markets, the trade in insects as food in Western countries is limited but could be broadly expanded.

Approximately 30% of EU consumers are willing to eat insect-based food. The ValuSect consortium aims to enhance the level of perception by improving the quality of insect production and processing, including its environmental impact. Research will be done on the emission of greenhouse gasses, on the impact of the substrate, on food safety and on the shelf life of the food product, as well as on market opportunities and consumer acceptance.

The project will use three insect species that are subject of a novel food dossier which are *Tenebrio Molitor*, *Locusta Migratoria* and *Acheta Domesticus*. The focus lays on the development of an accelerator program for insect-based food products. In the form of various vouchers for SMEs, this program will transfer knowledge to enterprises and actors from the whole supply chain. Such knowledge transfers between stakeholders will be key to the development of this market.

Improving insect production as well as consumers' attitudes are at the heart of the project which aspires to make insects a crucial part of the tomorrow's more sustainable diet of North-West Europe.

Objective

The main objective of this voucher scheme is to **support SMEs to accelerate the development of the insect business in Europe.** ValuSect improves the innovation performance of companies involving all partners with expertise in insects and food production innovations.

Apply for Vouchers Now! (Open call)

SMEs located in North-West Europe, working or wanting to start working in the insect-based food sector, can receive a voucher worth of 10.000€, 20.000€ or 40 000€ in services delivered by the ValuSect project partners, to develop products, conduct consumer taste panels, optimise breeding conditions or improve insect food processing. If you are selected, you can

receive a De Minimis grant letter in accordance with CR (EU). During the duration of the project, 40 cases will be selected and implemented.

We offer a range of (research) services tailored to your needs. The partners of the ValuSect consortium cover a wide range of specialist knowledge. All phases of insect production, processing, quality control, safety, product development and marketing are included in our knowledge and research cluster. We support you with research, surveys, experiments, development or technological advice. No matter where in the value network your company is situated, you can apply for a voucher. Please find more information in the **Menu of Services** below in which all partners of ValuSect describe their offerings.

Are you eligible to apply? Check the general criteria!

Check list for your eligibility to apply for a voucher:

- You are a SME*
- Your company is based in the North-Western Europe region (Ireland, the United Kingdom, Belgium, Luxembourg, Switzerland, and parts of France, Germany and the Netherlands). See the Interreg [NWE website](#) to know if your region can be covered.
- You belong to the food and beverage or agri-food sector.
- You are part of, or want to become part of, the network that uses insects as food for human consumption.

These criteria are necessary to fulfil. Go ahead:

- You have an innovative idea supporting the development of the insect business in Europe
- Your idea includes one or all the three insect species contemplated in the ValuSecty project (*Tenebrio molitor*, *Acheta domesticus* and *Locusta migratoria*)
- You can show clearly in your application how the development/implementation of your idea supports the acceleration of the insect business in Europe.

Are you still convinced to be legitimate? Please check which of the next services might match with your needs. (can be one or several)

- Technological services
- Food development and innovation
- Consumer acceptance
- Strategic business services

Within these categories you can find supportive services to:

- Measure emissions/greenhouse gases
- Optimise breeding, feeding, substrate, productivity, food safety, shelf life, nutritional quality
- Develop/optimize technology
- Know more about the consumer needs/acceptance
- Develop a product which contains insect ingredients
- Develop suitable marketing strategies for the insect market

- Propose a new innovative idea which does not fit in one of these categories but still supports the goal of accelerating the European insect market.

Just a last check on formalities:

- The applicant is aware of the fact that the support granted by the ValuSect voucher scheme is de-minimis support and hereby declares, that a de-minimis self-declaration will be provided together with an application [Insert the link](#).
- The applicant is aware of the [data privacy regulations](#).

*Definition of a SME eligible for ValuSect Open Calls

A SME will be considered as such if complying with the European Commission Recommendation 2003/361/EC¹ and the SME user guide². As a summary, the criteria which define a SME are:

Independent (not linked or owned by another enterprise), in accordance to Recommendation 2003/361/EC³

It is a legal entity established and based in one of the EU Member States or an Interreg NWE Associated country as defined in H2020 rules for participation⁴

Headcount in Annual Work Unit (AWU) less than 250.

Annual turnover less or equal to €50 million OR annual balance sheet total less or equal to €43 million

For British applicants: Please be aware that eligibility criteria must be complied with for the entire duration of the grant. If the United Kingdom withdraws from the EU during the grant period without concluding an agreement with the EU ensuring in particular that British applicants continue to be eligible, you will cease to receive EU funding (while continuing, where possible, to participate) or be required to leave the project. In that case, the rules of H2020 grants will apply.

Application Process

For application, please use the documents [on the ValuSect website](#). You have to send your application documents by mail to valusect@thomasmore.be by **7 January 2022** (you will receive a confirmation mail).

In the application you fill in information about your company and the general eligibility criteria. In addition, you define your idea / question for which you would like to apply for a service voucher. You will receive an answer from us by March 2022.

Next, you give a detailed description of your idea and prove its suitability for the project goals. You should then link your support request directly to the services we offer. For more details and the criteria, you can check [the application form](#), which guides you through the process.

Contact details

If you have questions concerning your application, do not hesitate to contact us:
valusect@thomasmore.be

Check out what we can offer as ValuSect

The Menu gives an overview of the various services that can be offered by the ValuSect partners. From technological measurements and developments that require expensive laboratory equipment, to the development of food, to market analysis through surveys and experiments, we can offer a wide range of services. Please check whether your idea can benefit from our support.

Here is the list of provided services:

1. Technological services
2. Food development and innovation
3. Consumer acceptance
4. Strategic business services

Covid-19 Info: Due to the current situation several of our services offered can be carried out online. If you are interested in that contact us and ask for advice. Note that for this same reason, services may also have delays.

1. Technological services

	Fontys University for Applied Science (Venlo, The Netherlands) Green TechLab https://fontys.nl/greentechlab/	
Name of the service	Technical Pre-research	Technical Research and Development

Description	Technical investigation takes place to arrive at a number of possible concepts for a solution to a problem. And if a next step towards an proof of concept or prototype is applicable	Investigation takes place to come to one desired concept that is a solution for the agricultural problem. Development is where the concept is developed into a proof of concept or prototype
Program of Activities	<ol style="list-style-type: none"> 1. Brainstorm <ol style="list-style-type: none"> 1.1. What should the device do? What should the device do? 1.2. Mindmapping 1.3. Labeling, (adding focus on criteria's): <ol style="list-style-type: none"> 1.3.1. What the device absolutely must comply with: 1.3.2. What is not important: 1.3.3. What should the project excel in 2. Requirements: <ol style="list-style-type: none"> 2.1. Fixed, 2.2. Variable (user aspects and manufacturing aspects), 2.3. Wishes 3. Function analysis <ol style="list-style-type: none"> 3.1. Hamburger model, specifications 3.2. Gap analysis, what information is not there? 4. Initial morphological overview 5. Define possible concepts <ol style="list-style-type: none"> 5.1. Conclusion and advise best possible technical concept 	<ol style="list-style-type: none"> 1. Kick-off 2. Plan of action <ol style="list-style-type: none"> 2.1. Project description, project boundaries, products, quality, project organization, planning, costs and benefits, risks, literature list 3. Define package of requirements 4. Function analysis <ol style="list-style-type: none"> 4.1. Hamburger model, V model 5. Requirements <ol style="list-style-type: none"> 5.1. Fixed, variable, user aspects, manufacturing aspects 5.2. Wishes <ol style="list-style-type: none"> 5.2.1. Project nuances 6. Consultation with client <ol style="list-style-type: none"> 6.1. processing feedback 7. Set up solutions for the relevant functions 8. Process function solutions in a morphological overview 9. Combining the best functions to a minimum of 3 different concepts 10. Concepts are tested against the set variable requirements by means of the user aspects and manufacturing aspects, the aspects are defined with a weighing factor. 11. Outcome of the best concept 12. Consultation with client, confirmation of correct concept <p><u>Development:</u></p> <ol style="list-style-type: none"> 13. Engineering proof of concept 14. Consultation with the voucher applicant if the elaboration by means of engineering is to the expectations 15. Proof of concept testing 16. Evaluation proof of concept or prototype

		17. Elaboration of technical 'construction' file 18. Transfer
Competencies	Mechanical Engineering, Mechatronics, Industrial Product Design, Software Engineering	Mechanical Engineering, Mechatronics, Industrial Product Design, Software Engineering

 <p>Teagasc Agriculture and Food Development Authority (Dublin, Ireland) https://www.teagasc.ie/</p>				
Name of the service	Processing optimization	Prepared Consumer Food Centre (PCFC)	Characterise any raw material	Determine optimal food application
Description	<ul style="list-style-type: none"> - Experimental design. - Research on factors affecting the processing and the final product properties. 	<ul style="list-style-type: none"> - Support research, development and innovation in the Prepared Consumer Food sector. For more info please see: https://www.teagasc.ie/food/prepared-consumer-food-centre/ 	<ul style="list-style-type: none"> - Discussion about adequate analysis - These analysis will include proximate composition; determination of techno-functional properties and microbiological status. 	<ul style="list-style-type: none"> - Determe compositional and functional properties of raw materials and ingredients - Assesment of final products in terms of proximate composition and shelf life in order to inform the consumers.
Program of Activities	<ol style="list-style-type: none"> Define objectives for the process <ol style="list-style-type: none"> Product properties Applications Processing costraints Investigate into available technologies including emergin and traditional <ol style="list-style-type: none"> Extraction technologies:Pulsed electrif fields, 	<ol style="list-style-type: none"> Use of a complete suit of technologies to develop new processes including: <ol style="list-style-type: none"> Extraction Processing Packaging Investigate the effect of emerging technologies on enhancing <ol style="list-style-type: none"> Extraction yield 	<ol style="list-style-type: none"> Define the scope and the information required from the analysis <ol style="list-style-type: none"> Type of product to be analysed Recommendation based on required outcomes and facility availability 	<ol style="list-style-type: none"> Cutting edge technology to analyse proximate composition: <ol style="list-style-type: none"> Protein (Dumas system by LECO) Fat and moisture using microwave and NMR technology Ash content following ISO protocols

	<p>ultrasound, cavitation technologies.</p> <p>2.2. Processing: blenders, mixers, cookers, filters, centrifuges, dryers</p> <p>2.3. Packaging suit</p> <p>3 Design an experimental plan</p> <p>3.1. Design the trials required to optimise the process</p> <p>3.2. Plan for the trial to be carried out</p>	<p>2.2. Ingredient functionality</p> <p>2.3. Final product characteristics</p> <p>3. Prepare the samples for further analysis</p> <p>3.1. Proximate composition</p> <p>3.2. Shelf life studies</p> <p>3.3. Nutritional values</p>	<p>1.3. Final decision on analysis to be undertaken</p> <p>2. Explore new methodologies on bibliography for specific requests:</p> <p>2.1. Identification of methodologies of interest other than those offered</p> <p>3. Advice on sample preparation</p>	<p>1.4. Mineral profile by means of ICP-MS</p> <p>1.5. Dietary fiber (soluble and insoluble) by automatized digestion system</p> <p>2. Techno-functional analysis of ingredients determined by well-established protocols</p> <p>2.1. Solubility</p> <p>2.2. Emulsifying and gelling capacity</p> <p>2.3. Texture profile</p> <p>2.4. Colour</p> <p>2.5. Water and oil holding capacity</p> <p>2.6. Thermal degradation by TGA/DSC</p> <p>3. Detection and quantification of relevant pathogens and spoiling microorganisms following international standards (ISO)</p> <p>4. Data interpretation and reporting about most suitable applications in food products</p>
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<p>Competencies</p>	<p>Detailed understanding of technologies applied and the effect on the raw materials to be processed. Experience on developing a range of several products (meat and meat products, meat analogues, bakery, snacks or not alcoholic beverages)</p>	<p>The Centre contains state-of-art pilot scale processing equipment which interested companies can use for research and development in collaboration with Teagasc and other innovation support organisations. It also encompasses access to modern analytical and sensory laboratories to characterise foods in terms of nutritional, compositional, microbial and sensory profiles allowing complete product and process development.</p>	<p>High expertise and cutting edge technology on analytical procedures to determine proximate composition (protein, moisture, fibre, ash, mineral, and lipid content).</p> <p>Proven experience on determining an array of technological properties (solubility, emulsifying, gelling, rheological properties, texture analysis, cook loss, colour, etc.).</p>	<p>The application of advanced analytical techniques is critical for the development of innovative food products, in particular, those with enhanced nutritional claims. Teagasc capabilities establish a comprehensive facility to produce the relevant analytical results and satisfy a wide range of product label claims.</p> <p>Food safety is a pre-requisite to Ireland's agri-food economic success and reputation and to sustaining and growing food exports. he ability to validate safety and shelf-life using real food chain conditions facilitates a key step in the commercialisation process for new food products and processes. The Microbial Safety and Shelf-life Suite has been equipped with state-of-art equipment and facilities aimed to identify food borne pathogens, spoilage microorganisms and perform shelf life studies.</p>
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	<p>Aberystwyth University (Wales, UK) https://www.aber.ac.uk/en/</p>	
Name of the service	Technical Pre-research	Food raw material production/ to characterise a food ingredient or final product
Description	<p>Pre-research is where a technical investigation or consultation takes place to arrive at a number of possible approaches to an issue or problem.</p>	<p>Experimental investigation takes place to analyse. The outputs of these analyses may provide:</p> <ul style="list-style-type: none"> • Global ‘fingerprint’ comparisons of food composition • Comprehensive lipid and fatty acid profiling • Comprehensive profiling and structural elucidation of chemical content • Assessment of food protein content digestibility and nutritional quality • Assessment of amino acid profile
Program of Activities	<ol style="list-style-type: none"> 1. Meeting with the client to define the issue or problem: What should the analysis reveal? What chemicals or biomarkers are involved? What samples are available? 2. Methodology: considering the technologies and facilities available, consider the options available to address the problem 	<ol style="list-style-type: none"> 1. Kick-off meeting with client to complete an initial understanding of the problem or issue <ol style="list-style-type: none"> 1.1. Develop a plan of action, including project description, project boundaries, project organization, costs and benefits, risks, literature list and time (facility availability) 2. Define package of requirements, including samples available for analysis, timeline and expected outputs. Agree on the schedule and the experimental methodology, for example: <ol style="list-style-type: none"> 2.1. Liquid chromatography–mass spectrometry (LC–MS) or Gas Chromatography–mass spectrometry, (GC–MS) profiling of food ingredient/food extracts 2.2. Analytical scale evaluation of proteins in a mixture: Extraction, quantitation and qualitative evaluation of proteins by UV/VIS spectrophotometry and polyacrylamide gel electrophoresis (SDS-PAGE).

	<ol style="list-style-type: none"> 3. Outline the results likely to be achieved, highlighting any limitations and statistical analyses to be performed. 4. Delivery of a report or discussion to advise on the best possible technical solution(s) available with estimated costs. Highlight any Intellectual Property issues. 	<ol style="list-style-type: none"> 2.3. Protein identification by mass spectrometry 2.4. Digestibility of food protein content 2.5. Proximate analysis of feedstock composition (eg total N, carbohydrate, fibre) 2.6. Laboratory scale processing of bio-based materials including pre-treatment, extraction, thermal and bioconversion with downstream processing including crystallisation. 2.7. Similar to laboratory scale processing but at a industrially relevant scale (pilot – up to TRL 6). 3. Experiments are performed and data are analysed 4. A short report is compiled that highlights the principle findings, including any statistical analyses. Any important limitations of the work are indicated, if present. 5. Delivery of report (likely to be a MS-Word document with an accompanying Excel spreadsheet containing data) and discussion with the client
Competencies	IBERS develops generic, high throughput phenotyping methodologies, based on global high resolution mass spectrometry (metabolomics) for use in a range of fields. IBERS has skills in valorisation of waste streams for the food industry utilising biorefining and analytical chemistry methodology	IBERS develops generic, high throughput phenotyping methodologies, based on global high resolution mass spectrometry (metabolomics) for use in a range of fields. IBERS has skills in valorisation of waste streams for the food industry utilising biorefining and analytical chemistry methodology.
Notes	This consultation service is focused on a feasibility studies to design analytical experiments and ascertain likely findings and limitations.	The final approach will be defined in consultation with the voucher applicant.

2. Food development and innovation

	<p>Inagro vzw (Rumbeke-Beitem, Belgium) https://www.inagro.be/</p>		
Name of the service	Benchmarking of insect productivity	Insect feed experiments	Literature study on insect breeding
Description	A novel production method/system will be assessed and opportunities for improvement will be investigated.	Side streams will be tested as a feed for insects.	Summary of the available literature for a certain research question.
Program of Activities	<ol style="list-style-type: none"> 1. Benchmarking <ol style="list-style-type: none"> 1.1. Bi-lateral talk through of the existing production system 1.2. Visiting the production facility 1.3. 1 on 1 comparison with the rearing conditions at the Inagro insect pilot 1.4. Identify possible problem points 2. Specific research on problem points. <ol style="list-style-type: none"> 2.1. Defining research question 2.2. Research protocol 2.3. Executing experiment 2.4. Data processing 3. Conclusion and advise 	<ol style="list-style-type: none"> 1. Analysing chemical and physical properties of the side streams 2. (optional) Fermentation of the side stream 3. Diet formulation 4. Feed experiment 5. Report 	<ol style="list-style-type: none"> 1. Defining expectations of the literature review 2. Literature search 3. Presenting literature review
Competencies	<p>Research based on the following competencies: scientific approach on pilot scale insect breeding, breeding optimization, feed experiments and side stream processing.</p> <p>This service comprises all activities related to insect breeding and insect rearing. Inagro has substantial knowledge on mealworm breeding, is an apprentice in cricket rearing and a novice in locust production.</p>		

	Thomas More (Geel, Belgium) RADIUS Thomas More - About		
Name of the service	Information session of legislation on insects for food and feed	Information session on good hygiene practices during insect rearing, harvesting and killing	Counseling on the rearing of <i>Tenebrio molitor</i>, <i>Acheta domesticus</i> and <i>Locusta migratoria</i>
Description	A tailor made information session or counselling regarding the European legislation on insects for food and feed can be provided.	A tailor made information session or counselling regarding the implementation of good hygiene practices during insect rearing, harvesting and killing for food and feed can be provided.	A tailor made information session, counseling or advisement on the rearing of <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> and <i>Locusta migratoria</i> .
Program of Activities	<ol style="list-style-type: none"> 1. Define the research brief: <ol style="list-style-type: none"> 1.1. Defining the information needed 1.2. Identify potential information sources for desk research 2. Delivery: <ol style="list-style-type: none"> 2.1. Carry out research using agreed data 2.2. Report 3. Delivery of the report: <ol style="list-style-type: none"> 3.1. Face to face (online) delivery to allow for further discussions 	<ol style="list-style-type: none"> 1. Define the research brief: <ol style="list-style-type: none"> 1.1. Defining the information needed 1.2. Identify potential information sources for desk research 2. Delivery: <ol style="list-style-type: none"> 2.1. Carry out research using agreed data 2.2. Report 3. Delivery of the report: <ol style="list-style-type: none"> 3.1. Face to face (online) delivery to allow for further discussions 	<ol style="list-style-type: none"> 1. Define the research brief: <ol style="list-style-type: none"> 1.1. Defining the information needed 1.2. Identify potential information sources for desk research 2. Delivery: <ol style="list-style-type: none"> 2.1. Carry out research using agreed data 2.2. Report 3. Delivery of the report: <ol style="list-style-type: none"> 3.1. Face to face (online) delivery to allow for further discussions
Competencies	Research based on the following competencies: knowledge of the	Research based on the following competencies: knowledge of good	Research based on the following competencies : expertise on the rearing of mentioned insects due to years of

	European legislation on insects for food and feed.	hygiene practices during insect rearing, harvesting and killing for food and feed.	continious rearing and performing experiments on the optimisation of the rearing process.
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Name of the service	Rearing optimisation of <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> and <i>Locusta migratoria</i>	Laboratory scale feed experiments with side streams for <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> or <i>Locusta migratoria</i>	Pilot scale feed experiments with side streams for <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> or <i>Locusta migratoria</i>
Description	The insect research facility is equipped with broadly usable techniques and materials for insect rearing (climate cabinet and chambers, cages, light units, cages, boxes, etc.), harvesting (vibrating sieves), killing (blanching, fast freezing...). This allows us to investigate and optimise rearing conditions and techniques or devices.	The insect research facility is equipped with broadly usable materials for feed processing (mixing, blending, fermenting, ...) and insect rearing. Using the protocol for laboratory scale feed experiments as described in the literature search on sustainable production of insects for food. Insects will be reared on 1 treatment (e.g. side stream) and 1 control diet for 6 weeks.	The insect research facility is equipped with broadly usable materials for feed processing (mixing, blending, fermenting, ...) and insect rearing. After successful rearing on lab scale, pilot scale rearing experiments with side streams can be performed. Using the protocol for pilot scale feed experiments as described in the literature search on sustainable production of insects for food. Insects will be reared on 1 treatment (e.g. side stream) and 1 control diet.
Program of Activities	<ol style="list-style-type: none"> 1. Define the research brief: <ol style="list-style-type: none"> 1.1. Defining the amount of insects needed 1.2. Face to face (online) discussion 2. Delivery: Carry out optimisation research using agreed data <ol style="list-style-type: none"> 2.1. Larval performance (growth) 	<ol style="list-style-type: none"> 2. Define the research brief: <ol style="list-style-type: none"> 2.1. Defining the information needed and expected 2.2. Face to face (online) discussion 3. Delivery: Lab scale feed experiment on side stream <ol style="list-style-type: none"> 3.1. Larval performance (growth) 	<ol style="list-style-type: none"> 2. Define the research brief: <ol style="list-style-type: none"> 2.1. Defining the information needed and expected 2.2. Face to face (online) discussion 3. Delivery: Pilot scale feed experiment on side stream <ol style="list-style-type: none"> 3.1. Larval performance (growth) 3.2. Feed conversion ratio (efficiency)

	<p>2.2. Feed conversion ratio (efficiency) (Depends on research question)</p> <p>2.3. Report</p> <p>3. Delivery of the report:</p> <p>3.1. Containing results</p> <p>1. Face to face (online) delivery to allow for further discussions</p>	<p>3.2. Feed conversion ratio (efficiency)</p> <p>3.3. Report</p> <p>4. Delivery of the report:</p> <p>4.1. Containing results</p> <p>1. Face to face (online) delivery to allow for further discussions</p>	<p>3.3. Report</p> <p>4. Delivery of the report:</p> <p>4.1. Containing results</p> <p>4.2. Containing pilot scale rearing & harvesting protocol on the side stream</p> <p>4.3. Face to face (online) delivery to allow for further discussions</p>
Competencies	Research based on the following competencies: expertise on (and equipment for) insect rearing and optimisation of insect rearing.	Research based on the following competencies: knowledge on (and equipment for) lab scale insect rearing, feed experiments and feed/side stream processing.	Research based on the following competencies: knowledge on (and equipment for) pilot scale insect rearing, feed experiments and feed/side stream processing.
Notes	Examples are optimising density, temperature, relative humidity, feeding regimes, light/dark cycle, handling techniques, etc.		

Name of the service	Chemical analysis of insect	Chemical analysis of substrate	Chemical analysis of insect residue
Description	A total chemical analysis of the insect will be performed. Insects that are included are: <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> and <i>Locusta migratoria</i>	A total chemical analysis of the substrate will be performed.	A total chemical analysis of the insect residue will be performed.

Program of Activities	<ol style="list-style-type: none"> 1. Define the analyses that need to be performed. 2. Delivery: A chemical analysis containing: <ol style="list-style-type: none"> 2.1. Sample preparation 2.2. Percentage crude proteins 2.3. Percentage crude lipids 2.4. Percentage chitin 2.5. Mineral profile 2.6. Dry matter content 2.7. Ash content 1. Delivery of the analysis report and face to face (online) delivery to allow for further discussions. 	<ol style="list-style-type: none"> 2. Define the analyses that need to be performed. 3. Delivery: A chemical analysis containing <ol style="list-style-type: none"> 3.1. Sample preparation 3.2. pH 3.3. Density 3.4. Dry matter 3.5. Ash content 3.6. Percentage crude proteins 3.7. Percentage crude lipids 3.8. Mineral profile 3.9. Fibre profile (NDF, ADF, ADL) 4. Delivery of the analysis report and face to face (online) delivery to allow for further discussions. 	<ol style="list-style-type: none"> 1. Define the analyses that need to be performed. 2. Delivery: A chemical analysis containing: <ol style="list-style-type: none"> 2.1. Sample preparation 2.2. pH 2.3. Dry matter content 2.4. Total organic (carbon) content 2.5. Total organic nitrogen 2.6. Ammoniacal nitrogen 2.7. Phosphorous 2.8. Mineral profile 3. Delivery of the analysis report and face to face (online) delivery to allow for further discussions.
Competencies	Expertise in analytical techniques and equipment to perform chemical analysis on insects.	Expertise in analytical techniques and equipment to perform the analysis.	Expertise in analytical techniques and equipment to perform chemical analysis on insects.
Notes	This service could support a: <ul style="list-style-type: none"> •Rearing study •A product launch •Product optimisation study (conservation/pre-treatment) 	This service could support a: <ul style="list-style-type: none"> •Rearing study •Valorisation study (waste streams) 	This service could support a: <ul style="list-style-type: none"> •Rearing study •Valorisation study (fertilizer) •Environmental impact study

Name of the service	Fatty acid profile analysis	Amino acid profile analysis	Insect fractionation on lab scale
Description	A total chemical analysis of the fatty acid composition in insects, substrates or residue.	A total analysis of amino acid composition in insects, substrates or residue	A total fractionation of insects in fat, proteins and chitin, up to 5 kg fresh insect weight
Program of Activities	<ol style="list-style-type: none"> 1. Define the analyses that need to be performed. 2. Delivery: A chemical analysis containing: <ol style="list-style-type: none"> 2.1. Sample preparation 2.2. Fatty acid profile 3. Delivery of the analysis report and face to face (online) delivery to allow for further discussions. 	<ol style="list-style-type: none"> 1. Define the analyses that need to be performed. 2. Delivery: A chemical analysis containing <ol style="list-style-type: none"> 2.1. Sample preparation 2.2. Amino acid profile 3. Delivery of the analysis report and face to face (online) delivery to allow for further discussions. 	<ol style="list-style-type: none"> 1. Define the pre-treatment (drying, milling, sieving, etc.) and extraction techniques (temperature, solvents, etc.) that need to be performed. 2. Delivery: Raw fractions of fat, proteins and residue (chitin) and processing recommendations 3. Delivery of the report: <ol style="list-style-type: none"> 3.1. Containing results and recommendations 3.2. Face to face (online) delivery to allow for further discussions 4. Delivery of the fractionated samples for further analysis <ol style="list-style-type: none"> 4.1. Dried 5. Sealed pack
Competencies	Expertise in analytical techniques and equipment to perform chemical analysis on insects.	Expertise in analytical techniques and equipment to perform the analysis.	Expertise in analytical techniques and equipment to perform the analysis.
Notes	This service could support a: <ul style="list-style-type: none"> •Rearing study •Valorisation study (fertilizer) 	This service could support a: <ul style="list-style-type: none"> •Rearing study •Product optimisation or launch 	This service could support a: <ul style="list-style-type: none"> •Up-scaling of insect processing •Product launch

	•Environmental impact study		<ul style="list-style-type: none"> •Product optimisation •Nutritional profile of insect can be analysed in advance •Quality of fractionated products can be analysed
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	<p>Innovatiesteunpunt (Belgium) https://www.innovatiesteunpunt.be/nl</p>
Name of the service	Find the side streams the insect breeders are looking for
Description	<p>Concrete individual advice to insect breeders to optimise circular use of biomaterial and costs.</p> <p>Boerenbond is the largest Flemish farmers organisation. So there's a close link with farmers that have side streams from their agricultural activities. Also at auctions and food processing companies there are left overs and side streams.</p>
Program of Activities	<p>Our service offering is conducting market research about:</p> <ul style="list-style-type: none"> • availability of sidestreams for insect breeding • the costs of those side streams. • Boerenbond can give one on one advice on how to communicate and interact with retailers. • Boerenbond can also organise webinars about the retail landscape
competencies	<p>Wide network Research capacity for market research and analysis</p>

3. Consumer acceptance

 	<p>Fontys University for Applied Science (Venlo, The Netherlands) Research Group Business Innovation https://fontys.nl/Over-Fontys/Research-Group-Business-Innovation.htm</p>	
Name of the service	Acceleration of the regular use of insects in a daily diet by increasing consumer acceptance	Product improvement and development on basis of professional research and tasting
Description	<p>Research on strategies to increase the acceptance of insect as food. Product positioning, quality labelling, communication around the product is in the focus.</p>	<p>Research on product development with focus on successful positioning of a new product category.</p>
Program of Activities	<ol style="list-style-type: none"> 1. Research definition <ol style="list-style-type: none"> 1.1. Kick-off with concise definition of individual research problem in the field of strategic positioning and value proposition 2. Definition of research requirements <ol style="list-style-type: none"> 2.1. Literature review 2.2. field research 2.3. value proposition canvas 2.4. surveys/focus groups/expert interviews 3. Delivery: <ol style="list-style-type: none"> 3.1. Communication strategy 3.2. value proposition strategy 3.3. product concepts 3.4. consumer profiling 	<ol style="list-style-type: none"> 1. Research definition <ol style="list-style-type: none"> 1.1. Kick-off with concise definition of individual research problem in the field of product development for a specific target group 2. Define package of requirements <ol style="list-style-type: none"> 2.1. Literature review 2.2. field research 2.3. Product development 2.4. Consumer taste panel 3. Delivery: <ol style="list-style-type: none"> 3.1. Product concepts with value proposition 3.2. Product recipes with professional consumer tasting results
Results into	<p>Communication strategies for specific target groups. Insights into current consumer behaviour.</p>	<p>Product improvements and developments based on data from surveys, taste testing and field experiments.</p>

Competencies

Entomology, Nutrition sciences, consumer behaviour, tasting panels, product development, strategic marketing, business model innovation, sustainable food production, quantitative and qualitative research and surveys.

	<p>Zurich University of Applied Sciences, Wädenswil, Switzerland Research Group Food Perception https://www.zhaw.ch/de/lisfm/institute-zentren/ilgi/sensorik/</p>	
Name of the service	Sensory properties of insects and insect based food, enhancing consumer insights and acceptance	Product improvement and development on basis of professional research and sensory profiling
Description	Research on strategies to increase knowledge on consumer insights, consumer use and culinary practices with insect based food	Research on product development with focus on successful sensory profiling, improving on taste and sensory properties.
Program of Activities	<ol style="list-style-type: none"> 1. Research definition <ol style="list-style-type: none"> a. Kick-off with concise definition of individual need and positioning 2. Definition of research requirements <ol style="list-style-type: none"> a. Literature review b. field research c. sensory testings, including expert panels and consumer panels in different age groups d. surveys/focus groups/expert interviews/observations 3. Delivery: <ol style="list-style-type: none"> a. Sensory profile of products b. Targeted consumer insights c. product enhancement profiling <p>consumer profiling</p>	<ol style="list-style-type: none"> 1. Research definition <ol style="list-style-type: none"> a. Kick-off with concise definition of individual research problem in the field of product development for a specific target group 2. Define package of requirements <ol style="list-style-type: none"> a. Literature review b. field research c. Product evaluation/nutritional calculation d. Sensory expert/consumer tastings 3. Delivery: <ol style="list-style-type: none"> a. Sensory concepts with value proposition <p>Product recipes with professional consumer tasting results</p>

Results into	Communication strategies for specific target groups. Insights into current consumer behaviour.	Product improvements and developments based on data from surveys, taste testings in various consumer groups and field experiments.
Competencies	Food perception, sensory studies, consumer insights, focus group, nutrition and dietary assessments, observational studies, sensory lab and quantitative and qualitative research and surveys.	Food perception, sensory studies, consumer insights, focus group, nutrition and dietary assessments, observational studies, sensory lab and quantitative and qualitative research and surveys.

4. Strategic business services

 <p>New Generation Nutrition (Den Bosch, Netherlands) https://ngn.co.nl/</p>			
Name of the service	QUALITY HANDBOOK DEVELOPMENT	CONCEPT DEVELOPMENT CONSULTANCY (Food Products)	MARKETING CUSTOMER ACCEPTANCE (INSECT FOOD)
Description	Quality handbook development is essential for any company active in the rearing, processing, sales or transport of insects for food or feed. The quality handbooks are tailored to the client and are designed to ensure that your operations meet EU norms and IPIFF guidelines for safety, hygiene, track & trace and quality protocols.	To bring your product idea to life, NGN is able to offer expertise in the development of innovative food product concept development. With extensive expertise in food technology and the processing of insects, NGN can offer key insights into practical considerations that will help to accelerate the	Acceptance Criteria can be very valuable when conducting business, especially in a new sector. Miscommunication can result in significant business losses, and should therefore be avoided at all costs. NGN can offer key insights By taking the time to establish clear Acceptance Criteria, where we can avoid wastage, delays and other negative consequences.

	<p>Quality handbooks cover the following:</p> <ul style="list-style-type: none"> - Hygiene and safety protocols based on HACCP (incl. risk analysis) - Traceability and waste management - Work procedures - Diverse templates for your use <p>With a quality handbook you are able to show with detailed documentation that your operations meet the necessary quality and safety standards for insect production.</p>	<p>development of your food product idea.</p> <p>At our lab-scale facilities, we can conduct key tests and experiments to support your product development. The following topics can be included:</p> <ul style="list-style-type: none"> - Recipe and ingredient choice - Cost price estimations - Shelf-life assessment - Sensory considerations - Processing technique considerations - Introduction into relevant regulation processes / requirements 	<p>We can split this into two sub questions:</p> <ol style="list-style-type: none"> 1. How does sustainability compare to shortlist of alternatives? 2. What is the customer acceptance for it in your particular country?
<p>Program of Activities</p>	<p>Quality handbook development is essential for any company active in the rearing , processing, sales or transport of insects for food or feed. The quality handbooks are tailored to the client and are designed to ensure that your operations meet EU norms and IPIFF guidelines for safety,</p>	<ol style="list-style-type: none"> 1. Intake appointment with client (digital possible) to assess current state of development and needs. Formulration of main goal. 2. Development of plan of action outlining key steps and topics to be covered as needed by the client (based on topics outlined above) 	<ol style="list-style-type: none"> 1. Research definition 2. Define sustainability parameters 3. Positioning of the company's products

	<p>hygiene, track & trace and quality protocols.</p> <p>Quality handbooks cover the following:</p> <ul style="list-style-type: none"> - Hygiene and safety protocols based on HACCP (incl. risk analysis) - Traceability and waste management - Work procedures - Diverse templates for your use <p>With a quality handbook you are able to show with detailed documentation that your operations meet the necessary quality and safety standards for insect production.</p>	<p>3. Discussion of plan of action with client and amendments as necessary.</p> <p>4. Begin with action plan implementation. Depending on the chosen activities, this may include:</p> <ul style="list-style-type: none"> - Co-creation / brainstorm sessions (live or digital) - Lab testing - Demonstrations of processing techniques - Ingredient and recipe research - Cost price calculations - Advice on regulatory elements - Advice on sensory elements <p>5. Final evaluation session of action plan results and next steps to be taken by the client. Summary of activities conducted delivered to client.</p>	<p>4. Initially desk research</p> <p>5. Primary research with consumers.</p> <p>6. Short, medium and long term opportunities.</p>
<p>Competencies</p>	<p>Expertise in safety, quality and HACCP procedures for insect rearing and primary processing.</p> <p>Formulation of necessary documentation and templates / records.</p>		



Bic Innovation Ltd (Bridgend, Wales)
<http://www.bic-innovation.com/>

Name of the service	Commercial market research	Business planning	Preparing for buyer meetings
Description	Desk based research projects to identify size of market opportunity for product(s), understand trends within the markets, market drivers, competitor positioning, identify potential routes to market, barriers to entry	Preparation of a business plan for the SME	Coaching SMEs to prepare for meetings with buyers (retail, foodservice, distributors, wholesalers)
Program of Activities	<ol style="list-style-type: none"> 1. Define the research brief: <ol style="list-style-type: none"> 1.1. Define potential target markets (geography, demographic, consumer behaviour/motivation) 1.2. Identify potential data/insight sources for desk research 2. Delivery: <ol style="list-style-type: none"> 2.1. carry out market research, using agreed data sources 2.2. analysis of research and data sources 2.3. development of final report 2.4. draft recommendations and next steps 	<ol style="list-style-type: none"> 1. Kick-off meeting with business to complete an initial understanding of the whole business <ol style="list-style-type: none"> 1.1. Collation of relevant company documents, plans, finances 1.2. Interviews with SME leader(s) to understand short, medium and long term objectives 2. Carry out further research needed to provide evidence of market size, competitor positioning, routes to market (ideally this should be supported 	<ol style="list-style-type: none"> 1. Kick-off meeting with business to understand target markets and consumers 2. Development of buyer presentation pitch deck for buyers covering: <ol style="list-style-type: none"> 2.1. Brand values 2.2. Provenance

	<p>3. Delivery of final market research report 3.1. In powerpoint with a face to face (online) delivery to allow for further discussions</p>	<p>by the commercial market research service deliverable)</p> <p>3. Collate financial data and model financial projections and cashflow forecasts, including any investment streams or grants</p> <p>4. Using tools such as SWOT, PESTLE develop a company and competitive environment analysis</p> <p>5. Develop an outline marketing plan and pricing strategy</p> <p>Delivery of final business plan – likely to be a Word document with excel appendices for financial projections</p>	<p>2.3. USP 2.4. Reasons to buy 2.5. Evidence of consumer engagement 2.6. Market opportunity (for the buyer) 2.7. Minimum order quantities 2.8. Pricing strategy 2.9. Shelf life 2.10. Accreditations</p> <p>3. Or review existing buyer presentation to critique and improve</p> <p>4. Coaching SME management to prepare for buyer meetings</p> <p>Support SME to respond to requests for further information from potential buyers and manage follow up</p>
<p>Competencies</p>	<p>Market research based on the following competencies: understanding of how to use data sources, interpret market research and</p>	<p>The business planning service is offered based on the following competencies: accountancy and</p>	<p>The preparing for buyer meetings service is offered based on the following competencies: understanding of what food buyers,</p>

	identify commercial opportunities arising from market insights	finance, business strategy, marketing strategy, commercial skills	distributors, wholesalers are looking for, negotiation, marketing and commercial skills
Notes	<p>This service could support a:</p> <ul style="list-style-type: none"> • feasibility study • a product launch • a market development strategy • an investment pitch deck • a business plan 	<p>This service could support a:</p> <ul style="list-style-type: none"> • an investment pitch deck • funding applications 	This service links to the market research service

