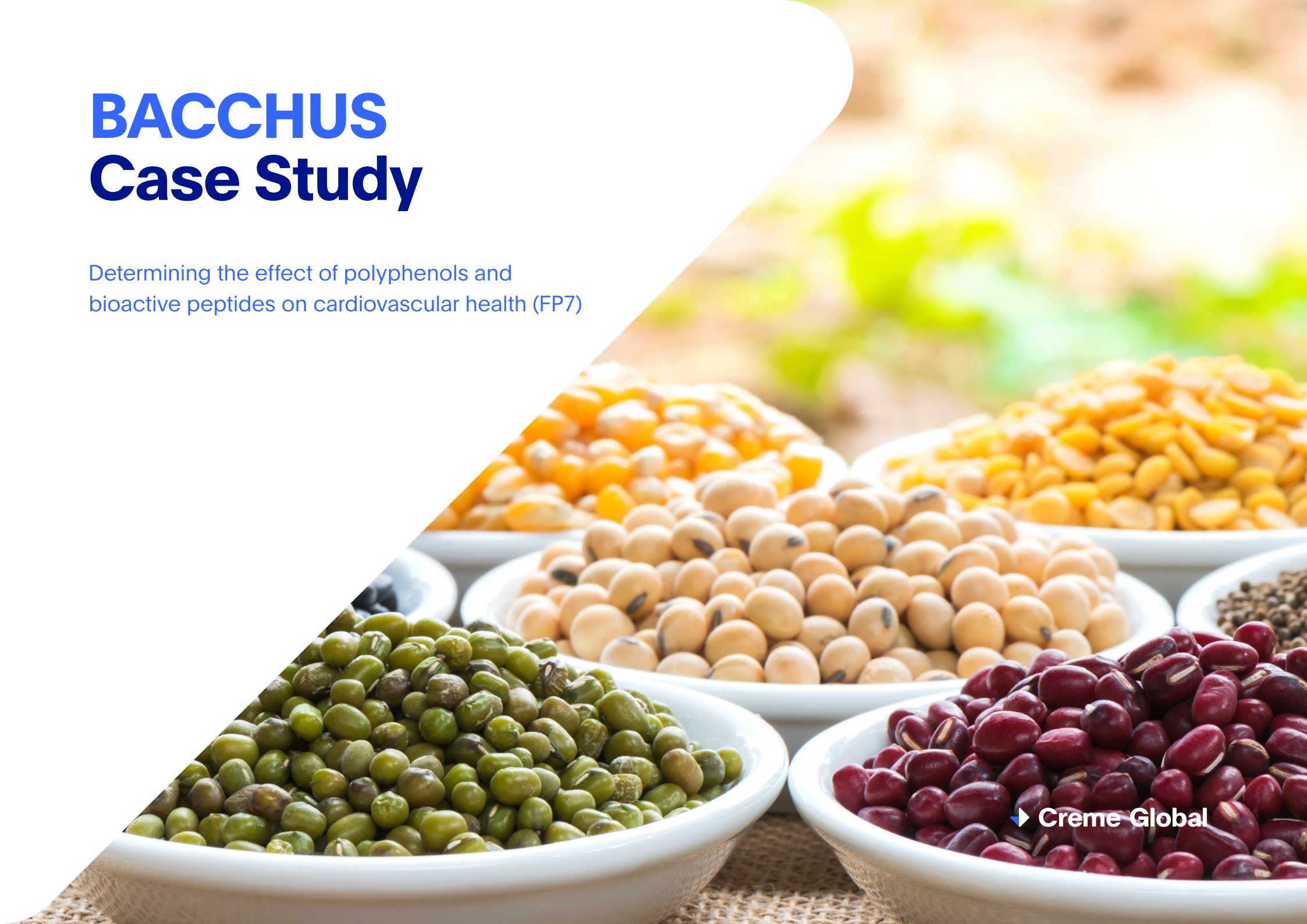
BACCHUS
Case Study

Determining the effect of polyphenols and bioactive peptides on cardiovascular health (FP7)



Project Goals

Creme Global is a partner in the European Framework project called BACCHUS. The main objective within the BACCHUS project involves setting in place best practice guidelines for reviewing EFSA's (European Food Safety Authority) approach to health claims and establishing solid guidelines for the project partners which consists of 26 EU partners, including Creme Global. The health claim focus for this project concentrates on the effect of polyphenols and bioactive peptides on cardiovascular health.

Furthermore a tool was built to assess current intakes of polyphenols and bioactives in Europe using food consumption survey data from Norway, the UK, Ireland and Spain and bioactive data generated from eBASIS.

Approach and Research

Within the relevant work packages of BACCHUS, the project partners are conducting high quality research to look at different areas that need to be addressed to align with the health claim evaluation progress.

Accurate analytical methods have been developed, in order to quantify bioactive peptides and polyphenols in foods and food extracts, and to carry out product and bioactive characterisation. A bioavailability platform is set in place to understand the metabolism and absorption of specific compounds, while in another work package the mechanisms of action are being characterized using various in vitro and in vivo studies. This includes the assessment of human biomarkers of selected polyphenols and bioactive peptides. This information is fed into 7 randomized controlled human trials in order to evaluate, established biomarkers, the evidence of health benefits from bioactive peptides and polyphenol enriched foods. Furthermore, the effective dose required for those beneficial physiological effects will be estimated.

In order to establish if this effective dose can be achieved in a balanced diet, information is needed to feed into the health claim application dossier. This is where Creme Global's expertise and unique model (Creme Nutrition®) is used to assess bioactive compound intakes in the population. Information on the content of bioactive peptides and polyphenols in foods is added to the eBasis platform and then applied to the Creme Nutrition® model to determine realistic distributions of intakes in European populations. Creme Global has been working on matching this bioactive data to the foods consumed in four European countries; Spain, Norway, Ireland and the UK, to assess accurate distributions of intakes of those compounds.

Outcomes

This research is examining robust and exploitable scientific evidence to support health claims, and to determine the cause and effect relationship between intakes and beneficial health impacts on cardiovascular health.

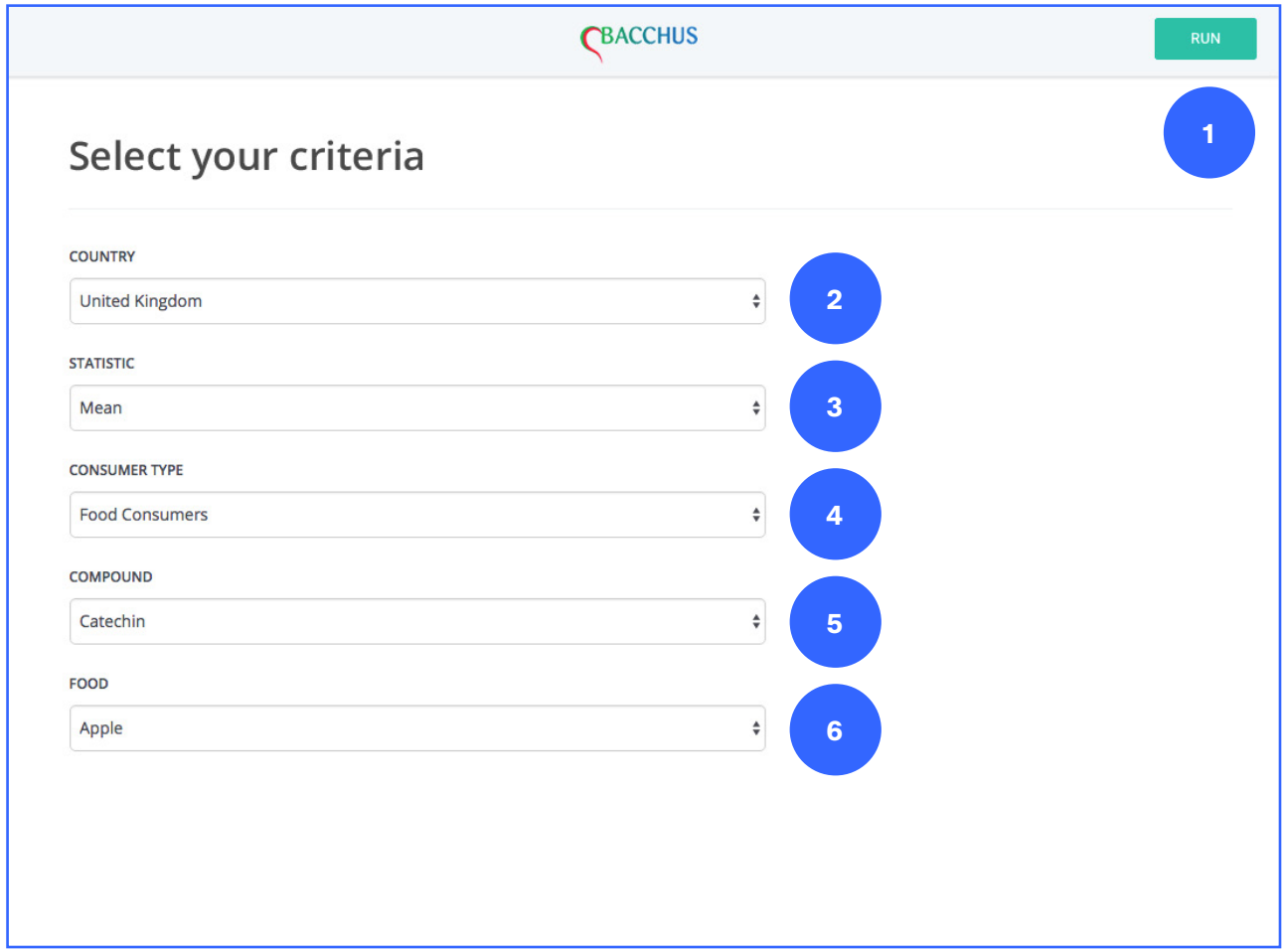
The eBASIS Creme Global Exposure Tool

A new interface linking the eBASIS bioactives database and the Creme Nutrition® model has been developed for the BACCHUS project. The tool can be used to assess current intakes of polyphenols and bioactives in Europe using food consumption survey data from Norway, the UK, Ireland and Spain and bioactive data generated from eBASIS. The eBASIS-Creme Global exposure tool will enable SMEs to assess compound intakes from various foods across populations to inform whether the compound required to obtain the claimed effect can be reasonably consumed within a balanced diet. The foods consumed in the food consumption surveys and bioactive compound concentration data (flavonoids, polyphenols and bioactive peptides) were mapped to estimate the distribution of intakes in four countries. The concentration data from eBASIS has been analysed and formatted into discrete data distributions of concentrations for each food-compound pair, allowing for random sampling of concentrations with the Creme Nutrition® model. Results have been generated for the mean and the 95th percentile, describing high consumers within a population, for daily intakes (mg/d) of the eBASIS compounds from selected plant based foods.

To access the tool go to bacchus.cremeglobal.com/bacchus.
A username and password are required and can be obtained by emailing bacchus@cremeglobal.com

This tool has been made available to the SMEs and other interested stakeholders to query compound intakes. Intake statistics of bioactive compounds from selected foods can be analysed via this tool. Intakes are represented for the average consumer (mean) and high consumers (P95), minimum and maximum intakes. The results of the assessments may be used to support health claim applications.

Using the Tool



1. Select the country of interest. Survey data is based on adults only.
2. The mean depicts the average consumer, P95 represents high consumers. Minimum and Maximum are also available to select.
3. Consumer Type: Total Population looks at all the subjects in the survey. Food Consumers are a subset of Total Polulation including only people that consume one or more of the defined foods.
4. Select the compound(s) of interest or choose Food only to see the quantities of food(s) (specified below) consumed. The compound data is derived from eBasis. Not all compounds are contained or listed for each food.
5. Select the food(s) of interest. The All foods option will give a result that is summation of each contributing BACCHUS food for the specified compound.
6. Run the analysis.

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