

## Introduction

The world population is going to increase by two billion people in 2050, the planet will need food and cricket protein is the answer. More and more consumers are trending towards healthy, sustainable diet with low environmental impact foods. Therefore we are choosing to target these consumers, offering them an alternative source of protein that has minimal impact on planet earth.

## Aim

To produce a healthy, low environmental impact cricket protein shake to meet the current demands from consumers who are wanting to purchase a sustainable, healthy protein drink. This shake will provide an alternative source of protein to the world's rapidly increasing population. We have chosen to target the ages of 16-30yr old, as more consumers in this bracket are becoming aware about what they are consuming. They are more open to eating insects.

## Method

Background research on cricket protein, alternative sources of protein and what already exists in this market.

- Target market research on who would be interested in consuming a cricket protein shake, and market opportunities
- Creation of the initial cricket protein shake, by experimenting with flavours, ratio of ingredients and types of milk.
- Conducting a survey on teachers and students to gather feedback to analyse and refine our product further.
- Consider and evaluate the products currently on the market, and how well liked our cricket protein shake was compared to these.
  - Design branding, labelling and packaging requirements.
  - Final cricket protein shake.

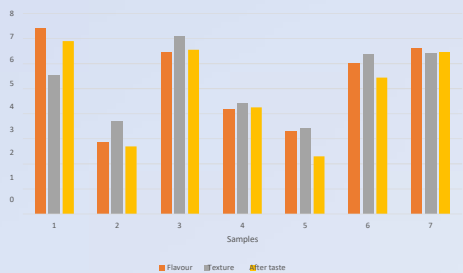
## Results

The overall results from the survey show that the testers preferred our cricket protein shake with almond milk instead of blue top milk.

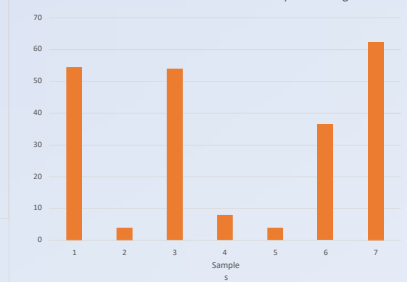
By using a combination of pea protein and cricket protein, we can maintain a high quantity of protein per serve. The pea protein helps hide the cricket powder taste and improves the overall consistency of the shake. The younger testers were more open to the idea of consuming crickets and were happy to complete the samples. Whereas the older testers mainly over 40yrs were hesitant to try them and thought consuming crickets was disgusting.

If we were to produce and sell our product in the future, we would target the younger market as well as medium to high income earning consumers as the product is a more highly priced item, and our testers fit into this category. We would also do further allergen testing for crustaceans so we can market the product as allergen friendly, this widens our consumer market.

Total Average Ratings of the Samples



Total of % consumers testers that would purchase again



Rathkeale / St Matthew's Senior College



# NUTRIFUTURE

## CRICKET PROTEIN SHAKE

(Sarah Pitney & Lily Priest)

...for the environmentally and ethically conscious consumer.



### Nutrition Information

Servings per Pack: 7	Ave. Quantity per Serve	Ave. Quantity per 100ml
Serving Size: 30g		
Energy	677kJ (162Cal)	271kJ (65Cal)
Protein	21.1g	8.4g
Fat, Total - Saturated	7.0g / 1.5g	2.8g / 0.6g
Carbohydrate - Sugars	3.3g / 0.4g	1.3g / 0.2g
Sodium	324mg	130mg

Sample	Protein Drink types	Milk
Sample 1	Two Island Pea Protein- Chocolate	Blue top milk
Sample 2	Cricket Protein	Blue top milk
Sample 3	Up & Go - Chocolate	-
Sample 4	Horley's Sculpt - Chocolate	Almond milk
Sample 5	Cricket Protein	Almond milk
Sample 6	Vitasoy - Chocolate	-
Sample 7	Two Island Pea Protein - Chocolate	Soy milk



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## Challenges

The main challenges we faced during the CREST challenge was finding a suitable texture and taste for the cricket protein shake, as the cricket powder was very grainy, and was hard to mask the taste and smell. To improve this, we added pea protein to the formulation, and used a blender to combine the shake. This smoothed the texture out and mellowed the earthy taste of crickets.

The sweetener we used in the product formulation (Steviol Glycoside) was not liked by many people. It had a bitter aftertaste with an artificial feel. In future we would look for an alternative natural sweetener.

Throughout this project we had the challenge to identify if crickets were a crustacean and contained allergens, which we would have had to mention on the packaging of the cricket protein shake.

Crickets let alone insects altogether are not a normalized food in western cultures in New Zealand. However, crickets are a sustainable, healthy alternative source of protein, and there is currently a large market for these types of products.



## Conclusion

The cricket protein shake we have formulated and developed has been made to a good standard in a short time frame. If we were to work on it over another year, we would be able to refine the product more, perfecting flavour, texture, packaging etc. However, based on our research and surveys conducted there is potential for the NutriFuture Cricket Protein Shake to compete in the New Zealand protein market and internationally. In early stages the product will mostly appeal to the health conscious, and environmentally aware consumer as these people are more willing to eat alternative food to meet their values. Overtime, with a rapidly increasing population insect production is bound to increase in countries like New Zealand and become normalised source of protein.

