

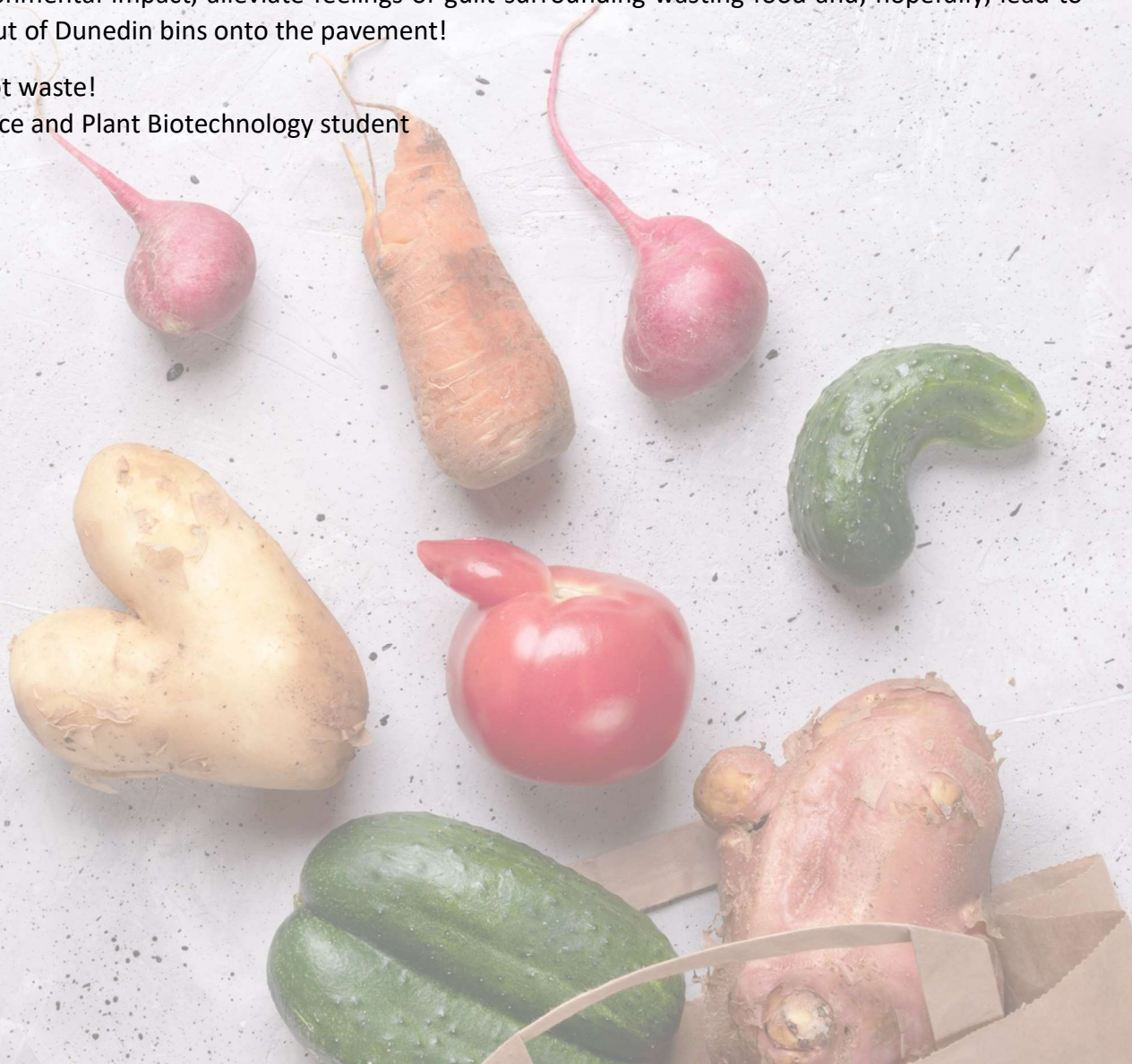
Weekly Meal Plans

Hello fellow students! Are you sick of your kitchen bin smelling? Tired of seagulls ripping open your rubbish bags? Then read on to learn how by following these meal plans you can reduce your food waste - benefiting the environment, economy and society.

Working with the Sustainability Office and the Food Waste Innovation Theme Researchers, I have completed a summer research project funded by Waste Management that aims to reduce the food waste produced by student flats. Young adults are one of the main groups of high food wasters and this is compounded by the fact that food waste increases with the number of individuals in a household.^{1,2} The sorts of foods being wasted by students living in student flats are leftovers, fresh foods such as fruit and vegetables, as well as not fully used up food items.³ The main reason behind this food waste is a general lack of planning and organisation around overall food management.³ I came up with various interventions that could help and that's how these weekly meal plans evolved. The meal plans are designed to feed four students five dinner meals per week that are healthy, affordable and zero-waste. As well as recipes, the meal plans contain helpful information such as nutrition information, the cost per serving and food waste reduction tips. Reducing your food waste will save you money, reduce your environmental impact, alleviate feelings of guilt surrounding wasting food and, hopefully, lead to less food spilling out of Dunedin bins onto the pavement!

Let's make food not waste!

Ashlee, Food Science and Plant Biotechnology student



Winter

These recipes are designed to feed four students five dinner meals in a week. The recipes are designed for winter as they use winter produce, but they can be made any time of the year. The meals are designed to be zero waste - all the ingredients you buy should be used by the end of the week (except for frozen vegetables). For some meals, you may have leftovers. You can eat these for lunch the next day or freeze for another time. The shopping list tells you the main ingredients you will need to buy for that week. The staples for the week list other ingredients that you will need to make the meals, but which you are likely to already have in your fridge or pantry. Check both lists before you go shopping in case you are missing a staple or have already purchased something. The recipes can be made in any order. Feel free to substitute or exclude certain ingredients.

- 1: Nachos
- 2: Sweet and sour pork
- 3: Cheesy one pot chicken pasta
- 4: Satay tofu noodles
- 5: Roast vegetables and sundried tomato pesto pasta

Staples for this week:

Oil
Onion
Garlic
Brown rice
Cheese
Soy sauce
Chilli flakes
Cornflour
Peanut butter
Vinegar
Crushed ginger
Sweet chili sauce
Milk

Shopping list for this week:

1.5kg bag carrots
1x broccoli
½ cabbage
1x beetroot
2x potatoes
1x red onion
1 bag baby spinach
2x cans kidney beans
3x cans chopped tomatoes
1 can pineapple pieces
3x 200g packets udon noodles
500ml chicken stock
500g bag pasta
1 jar sundried tomato pesto
500g pork
300g chicken breast
1 pack firm tofu
125g lite sour cream
1kg bag frozen mixed vegetables
1 bag corn chips



= Vegan



= Vegetarian



= Gluten Free



= Dairy Free

Nachos

Prep Time: 5 min

Cook Time: 15 min



Instructions

1:

Heat the oil in a frying pan. Add the onion and cook until soft. Add in the garlic, carrots and chilli flakes and cook for a further 1 minute.

2:

Stir in the chopped tomatoes and kidney beans and bring to a simmer. Simmer for 5 minutes before adding in the frozen mixed vegetables and leaving to simmer for a further 10 minutes, or until the vegetables are cooked.

3:

Serve the bean mixture over the corn chips and sprinkle with cheese.

Notes

You don't need to peel the carrots, just make sure to wash them well. By keeping the skin on your vegetables, you are not only reducing food waste, but you are also increasing the nutrients and fibre in your meals.

Keep cheese tightly wrapped in its packaging or plastic bag to stop it drying out. If hard cheese grows mould, it is safe to cut the mould off and still eat the cheese.

Frozen vegetables are often much cheaper than fresh and are equally as good for you. Not only are they a far better bang for your buck, but they also won't go off in a few days like fresh vegetables do. Plus they're already prepared saving time and money.

Nutrition Information		
	Average Quantity per Serving	% Daily Intake* (per Serving)
Energy	3666 kJ	42%
Protein	35.2 g	70%
Fat, total	30.8 g	44%
- saturated	13.1 g	54%
Carbohydrate	98.4 g	32%
Sodium	1037 mg	45%

*based on an average adult diet of 8700 kJ

Note: calculations based on recipe shown

Ingredients

1 tbsp oil

1 onion, diced

3 garlic cloves, finely chopped

¼ bag carrots, grated

Pinch of chilli flakes

2 cans chopped tomatoes

2 cans kidney beans, drained

2 c frozen mixed vegetables

1 bag corn chips

1 c cheese, grated

Cost per serving = \$2.13



"Nachos 1" by gogatsby is licensed under CC BY-SA 2.0

Sweet and sour pork

Prep Time: 5 min

Cook Time: 20 min



Instructions

1:

Cook the rice according to instructions on package.

2:

While the rice is cooking, heat the oil in a frying pan. Add the onion and pork and cook until onions are soft. Add in the carrots, soy sauce, pineapple pieces (save the juice) and frozen mixed vegetables. Stir-fry for 5 minutes.

3:

In a small bowl, mix together the cornflour and pineapple juice with 2 tbsp of water. Add the sauce to the frying pan and cook until thick.

4:

Serve the sweet and sour pork over the rice.

Ingredients

2 c brown rice

1 tbsp oil

1 onion, diced

500g pork, diced

¼ bag carrots, diced

3 tbsp soy sauce

1 can pineapple pieces

2 c frozen mixed vegetables

1 tbsp cornflour

Notes

Remember, you don't need to peel the carrots.

This recipe assumes that the frozen mixed vegetables are a mix of peas, beans, corn and carrots. If your mix has larger vegetables like broccoli and cauliflower, then you may need to cook them for slightly longer.

To make this meal vegetarian or vegan, either exclude the pork or substitute it for a meat free alternative such as jackfruit. This will, however, change the overall cost, cooking time and nutrition information.

Nutrition Information		
	Average Quantity per Serving	% Daily Intake* (per Serving)
Energy	3283 kJ	38%
Protein	36.0 g	72%
Fat, total	19.3 g	28%
- saturated	5.8 g	24%
Carbohydrate	108.8 g	35%
Sodium	1217 mg	53%

*based on an average adult diet of 8700 kJ

Note: calculations based on recipe shown

Cost per serving = \$3.51



Cheesy one pot chicken pasta

Prep Time: 5 min

Cook Time: 15 min

Instructions

1:

Heat the oil in a large pot. Add the onion and chicken and cook until chicken is browned. Add in the garlic and cook for a further 1 minute.

2:

Whisk together the sour cream and milk and add to the pot along with the chopped tomatoes and chicken stock. Bring to the boil. Add in the pasta and simmer until the pasta is cooked.

3:

Stir through the spinach and cheese. When the spinach has wilted its ready to serve.

Notes

It is much cheaper to purchase stock cubes than to buy liquid stock. To use a stock cube, dissolve one cube in 1 c of boiling water. Adjust the quantities as necessary to get the amount required for the recipe.

The door is the warmest part of your fridge, so use it to store things like drinks and sauces, not your cream or cheese.

To make this meal vegetarian, either exclude the chicken or substitute it for a meat free alternative.

Ingredients

1 tbsp oil

1 onion, diced

300g chicken breast, diced

2 garlic cloves, finely chopped

125g lite sour cream

½ c milk

1 can chopped tomatoes

500ml chicken stock

½ bag pasta

1 bag baby spinach

1 c cheese, grated

Cost per serving = \$3.51

Nutrition Information		
	Average Quantity per Serving	% Daily Intake* (per Serving)
Energy	3020 kJ	35%
Protein	46.5 g	93%
Fat, total	30.6 g	44%
- saturated	17.0 g	71%
Carbohydrate	62.0 g	20%
Sodium	1158 mg	50%

*based on an average adult diet of 8700 kJ

Note: calculations based on recipe shown



"My attempt at recreating Ruby's creamy chicken pasta. It's almost there..." by InfoMofo is licensed under CC BY-SA 2.0

Satay tofu noodles

Prep Time: 10 min

Cook Time: 15 min



Instructions

1:

In a bowl, combine the peanut butter, vinegar, ginger, sweet chilli sauce and soy sauce. Set aside.

2:

Soak the udon noodles in a bowl of boiling water. Once they are soft, drain and set aside.

3:

Heat the oil in a frying pan. Add in the tofu and cook until all sides are brown. Place on a plate and set aside.

4:

In the same frying pan, add in the carrots, broccoli and cabbage and stir-fry for 5 minutes. Add in the satay sauce and once simmering add in the noodles and tofu.

5:

Once everything is coated in sauce and heated through, its ready to serve.

Ingredients

½ c peanut butter

1 tbsp vinegar

1.5 tsp crushed ginger

1 tbsp sweet chilli sauce

1.5 tsp soy sauce

3x 200g packets udon noodles

2 tbsp oil

1 pack firm tofu, cut into cubes

¼ bag carrots, cut into matchsticks

1 broccoli, cut into chunks

½ cabbage, thinly sliced

Notes

Remember, you don't need to peel the carrots.

Broccoli stalks are nutritious and delicious. When you throw away the stalk you are wasting food and money. To use, cut a small amount off the bottom of the stalk and peel with a vegetable peeler. Then cut the stalks into batons similar in size to the florets.

Firm tofu can be found in the refrigerator section of most supermarkets. Toss the tofu in cornflour before frying if you want it really crispy.

Nutrition Information		
	Average Quantity per Serving	% Daily Intake* (per Serving)
Energy	2753 kJ	32%
Protein	27.0 g	54%
Fat, total	29.3 g	42%
- saturated	4.2 g	17%
Carbohydrate	63.6 g	21%
Sodium	720 mg	31%

*based on an average adult diet of 8700 kJ

Note: calculations based on recipe shown

Cost per serving = \$4.09



"Stir-fry noodle" by pelican is licensed under CC BY-SA 2.0

Roast vegetable and sundried tomato pesto pasta

Prep Time: 5 min

Cook Time: 20 min



Instructions

1:

Preheat the oven to 200 °C.

2:

Add red onion, carrots, beetroot and potatoes to a roasting tray and toss in the oil. Roast for 20 minutes, or until cooked.

3:

In the meantime, cook the pasta according to package instructions. Drain and keep warm.

4:

When the vegetables are cooked, add them into the pasta along with the sundried tomato pesto. Mix to combine and serve.

Ingredients

- 1 red onion, cut into wedges
- ¼ bag carrots, chopped
- 1 beetroot, chopped
- 2 potatoes, chopped
- 1 tbsp oil
- ½ bag pasta
- 1 jar sundried tomato pesto

Notes

Remember, you don't need to peel the carrots, beetroot or potatoes.

Create an 'eat me first' shelf where you put food that other people can help themselves to, like leftovers and food that has a short shelf life.

Nutrition Information		
	Average Quantity per Serving	% Daily Intake* (per Serving)
Energy	1875 kJ	22%
Protein	13.8 g	28%
Fat, total	11.6 g	17%
- saturated	1.2 g	5%
Carbohydrate	66.7 g	22%
Sodium	635 mg	28%

*based on an average adult diet of 8700 kJ
Note: calculations based on recipe shown

Cost per serving = \$2.09



"171/365: fire roasted vegetables and pasta" by Mark Bonica is licensed under CC BY 2.0

Did you know that 1/3 of the food produced each year is lost or wasted?⁴ While your first instinct may be to blame big food companies and supermarkets, the reality is that in New Zealand most food waste occurs at a household level.⁵ In fact, food waste makes up more than 30% of all domestic kerbside rubbish collected.⁶ Sending food to landfill creates a big problem. As the food breaks down, the greenhouse gas methane is released which contributes to climate change.⁷ To quantify that, if food waste were a country, it would rank as the third-highest national emitter of greenhouse gases after the US and China.⁸ Not only is methane an environmental issue with wasting food, but all of the precious resources that went into producing that food (such as land, water, chemicals and energy) are also wasted.⁸ With this in mind, it might not be surprising that eliminating food waste was ranked as the third-best global solution to address climate change.⁹ This statistic is what really piqued my interest in food waste, along with the fact that it combines sustainability and food. But if the environmental benefits of reducing food waste are not convincing enough by themselves, there are also social and economic benefits. If just half of the food currently being lost and wasted was recovered, it would be enough to feed the undernourished global population.¹⁰ In New Zealand alone the amount of food wasted each year is enough to feed the entire Dunedin population twice over.⁶ Plus, if households did eliminate their food waste, they would save \$10.83 each week.⁶ As a student, saving money is a pretty good motivator.

This resource has been put together taking inspiration from multiple sources. If you would like to know more about food waste, Love Food Hate Waste (<https://lovefoodhatewaste.co.nz/>) is a great place to start. To contact us regarding these meal plans, please email food.waste@otago.ac.nz.

¹Lyndhurst, B. (2007). WRAP food behaviour consumer research (report to WRAP; currently unpublished). Retrieved from <https://www.wrap.org.uk/sites/files/wrap/Food%20behaviour%20consumer%20research%20quantitative%20jun%202007.pdf>

²Tucker, C. A., & Farrelly, T. (2016). Household food waste: The implications of consumer choice .in food from purchase to disposal. *Local Environment*, 21(6), 682-706. doi:10.1080/13549839.2015.1015972

³McMaster, A. (2020). Understanding food waste produced by tertiary students living in student flats: Implications for marketers and policy makers (Master's thesis, University of Canterbury, Christchurch, New Zealand). Retrieved from https://ir.canterbury.ac.nz/bitstream/handle/10092/100747/McMaster%2c%20Aimee_Master%27s%20Thesis.pdf?sequence=1&isAllowed=y

⁴Gustavsson, J., Cederberg, C., & Sonesson, U. (2011). Global food losses and food waste. Food and Agriculture Organization of the United Nations. Retrieved from <http://www.fao.org/3/a-i2697e.pdf>

⁵Environment Select Committee. (2020). Briefing to investigate food waste in New Zealand. Retrieved from https://www.parliament.nz/resource/en-NZ/SCR_96164/cebeaf7cf20b40245fdf5c60601d83a2ac5b105f

⁶Shine Yates Consulting. (2018). New Zealand food waste audits. Retrieved from <https://lovefoodhatewaste.co.nz/wp-content/uploads/2019/02/Final-New-Zealand-Food-Waste-Audits-2018.pdf>

⁷WRAP. (2007). Understanding food waste. Retrieved from http://www.wrap.org.uk/sites/files/wrap/FoodWasteResearchSummaryFINALADP29_3__07.pdf

⁸Scialabba, N., Jan, O., Tostivint, C., Turbé, A., O'Connor, C., Lavelle, P., ... Batello, C. (2013). Food wastage footprint: impacts on natural resources. Food and Agriculture Organization of the United Nations. Retrieved from <http://www.fao.org/3/a-i3347e.pdf>

⁹Hawken, P. (2017). *Drawdown: the most comprehensive plan ever proposed to reverse global warming*. Penguin Books. <http://dx.doi.org/10.22621/cfn.v13i2.2007>

¹⁰Food and Agriculture Organization of the United Nations. (2016). Food loss/waste. Retrieved from <http://www.fao.org/resources/infographics/infographics-details/en/c/414196/>

