



# *Green Food Report*

*On the Nutritional Adequacy of a Vegan Diet*

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# Introduction

This report is an additional document complementing the Essay<sup>1</sup>: 'Green Food Report: On the Nutritional Adequacy of a Vegan Diet' written for SCICAPS250 in Spring 2020. This internship and course aimed to add to current academic material the Eleanor Green Office (EGO) has on sustainability and ways individuals can help combating climate change. As none of the current EGO members had extensively researched the nutritional adequacy of a vegan diet, we felt obligated to do at least some research prior to offering adhering to a vegan diet or choosing to incorporate more vegan meals in one's day to day life as an option for being more environmentally friendly.

While all main information is included in the essay, this document may serve as a more practical guide for (to-be) vegans of UCR aiming for a more balanced diet. It will mention several sources of all nutrients included in the main essay, while providing the Recommended Daily Allowance (RDA)<sup>1</sup>and the Upper Tolerable Intake Levels (UL)<sup>1</sup>for all where applicable. All information for the nutrients in various types of food has been retrieved from Davis & Melina<sup>2</sup>unless stated otherwise. Due to a time limitation and the fact that the book 'Becoming Vegan' has been written in America, most volume-references will be given in cups rather than grams unless otherwise specified. All beans and grains are cooked whereas vegetable-weights are raw. Enjoy this guide and stay Green!





# Iron

RDA<sup>1</sup>:

- 8mg: Males and menopausal females (vegan 14,4mg\*)


- 18mg: Females of childbearing age (vegan 32,4mg\*)

\* Vegans potentially need 1,8 times more iron than non-vegans (see essay p.4)

UL<sup>1</sup>:

- 45mg

Food (1/2 cup)	Iron (mg)	Food (1/2 cup)	Iron (mg)
Lentils	3,5	Dried figs	1,6
Chickpeas	2,5	Ground linseed	6,4
Beans (e.g. kidney beans)	2,1	Chia seeds	6,6
Tofu	2,1-3,5	Pumpkin seeds	5,8
Quinoa	1,4	Hemp seeds	9,8
Spelt	1,7	Cashew nuts	4,2
Oatmeal	1,1	Almonds	2,8
Dried apricots	1,8	Kale	1,2
Raisins	1,6	Spinach	3,4
Dried coconut	1,6	Bok choy	0,9



# Zinc

RDA<sup>1</sup>:

- 11mg: Males

- 8mg: Females

UL<sup>3</sup>:

- 40mg

Food (1/2 cup)	Zinc (mg)	Food (1/2 cup)	Zinc
Lentils	1,3	Mushrooms	0,3-0,5
Chickpeas	1,3	Ground linseed	1,2
Beans (e.g. kidney beans)	0,9	Chia seeds	4
Tofu	1,1-2,1	Pumpkin seeds	5,2
Quinoa	1,1	Hemp seeds <sup>4</sup>	6,11
Spelt	1,3	Cashew nuts	4
Oatmeal	1,2	Almonds	2,2
Wholemeal bread, slice	0,5	Walnuts	1,8
Avocado, raw, medium	1,3	Pine nuts	4,4
Garlic	0,8	Sesame seeds	5,6



# Calcium

RDA<sup>1</sup>:

- 1000mg: Adults
- 1200mg: Males above 70 and Females above 50

UL<sup>5</sup>:

- 2500mg between 19 and 50 years old.
- 2000mg 51 and older

Food (1/2 cup)	Calcium (mg)	Food (1/2 cup)	Calcium (mg)
Soybeans	93	Garlic	130
White beans	85	Kale	100
Edamame	49	Bok choy	84
Tempeh	97	Sweet potato	47
Tofu <sup>6</sup>	200	Almonds	192
Quinoa	17	Brazil nuts	114
Whole wheat bread, slice	48	Chia seeds	538
Amaranth	58	Flax seeds	162
Spinach	129	Sesame seeds	712
Parsley	89	Tahini, 2 tbsp	43



# Selenium


## RDA:

- 55mcg: everyone above 14<sup>1</sup>
- 60mcg: pregnant women<sup>7</sup>
- 70mcg: breastfeeding women<sup>7</sup>

## UL :

- 400mcg

Food (1/2 cup)	Selenium (mcg)	Food (1/2 cup)	Selenium (mcg)
Kidney beans	61	Brazil nut, 1/8 cup	340,5
Pinto beans	6	Chia seeds	48
Whole wheat spaghetti	19	Sesame seeds	26
Brown rice	10	Sunflower seeds	38
Whole wheat bread, slice	11	Molasses, 1 tbsp	3,6
Amaranth	9	Oatmeal	7
Garlic	10	Quinoa	3
Mushrooms	5	Spelt	4
Asparagus	6		
Coconut, dried	4		



# Iodine

RDA<sup>1</sup>:

- 150mcg

UL :

- 1100mcg

*The iodine content of foods depends on the iodine content of the soil which the product grows in.<sup>1</sup> Therefore, it is important for vegans to consume the recommended amounts of sodium, including salt either fortified with iodine or sea-salt.*





# Vitamin B2 - Riboflavin

RDA<sup>1</sup>:

- 1,1mg: Females

- 1,3<sub>9</sub>mg: Males

UL :

No UL has been established, however even though currently no adverse effects are known does not imply that there are none. Caution for excessive consumption is advised.

Food (1/2 cup)	Riboflavin (mg)	Food (1/2 cup)	Riboflavin (mg)
Edamame	0,12	Dried apples	0,3
Soybeans	0,49	Fortified plant-based milk, 100ml	0,21*
Tempeh	0,31	Grapefruit, medium	0,08
Quinoa	0,11	Asparagus	0,13
Wild rice	0,08	Avocado, medium	0,26
Almonds	0,80	Broccoli	0,10
Cashew nuts	0,14	Red hot chile peppers	0,99
Pine nuts	0,16	Spirulina, 1 tbsp	0,26
Tahini, 2 tbsp	1,04	Brown mushrooms	0,20
Sesame seeds	0,18	Sun-dried tomato	0,14

\* based on plant-based milks in Dutch grocery stores (e.g. Alpro soya and Albert Heijn-brand milk)

# Vitamin B12 - Cobalamin

RDA<sup>1</sup>:

- 2,4mcg

UL<sup>1</sup>:

No UL has been established, however adverse effects have been found when one has elevated B12 levels. Caution for excessive consumption is advised.

Supplements could ensure vegans obtain enough vitamin B12 needed for bodily processes. Supplements come in several 'packages', including fortified foods like plant-based milk and nutritional yeast, as well as pills. When consuming B12 pills, those with extremely high multiplications of the RDA (e.g. 4000%) should be avoided.<sup>2</sup>

Food	Cobalamin (mcg)
Fortified plant-based milk, 100ml	0,38*
Nutritional yeast, fortified, 1 tbsp	2,4

\* based on plant-based milks in Dutch grocery stores (e.g. Alpro soya and Albert Heijn brand milk)



# Vitamin D

RDA<sup>1</sup>:

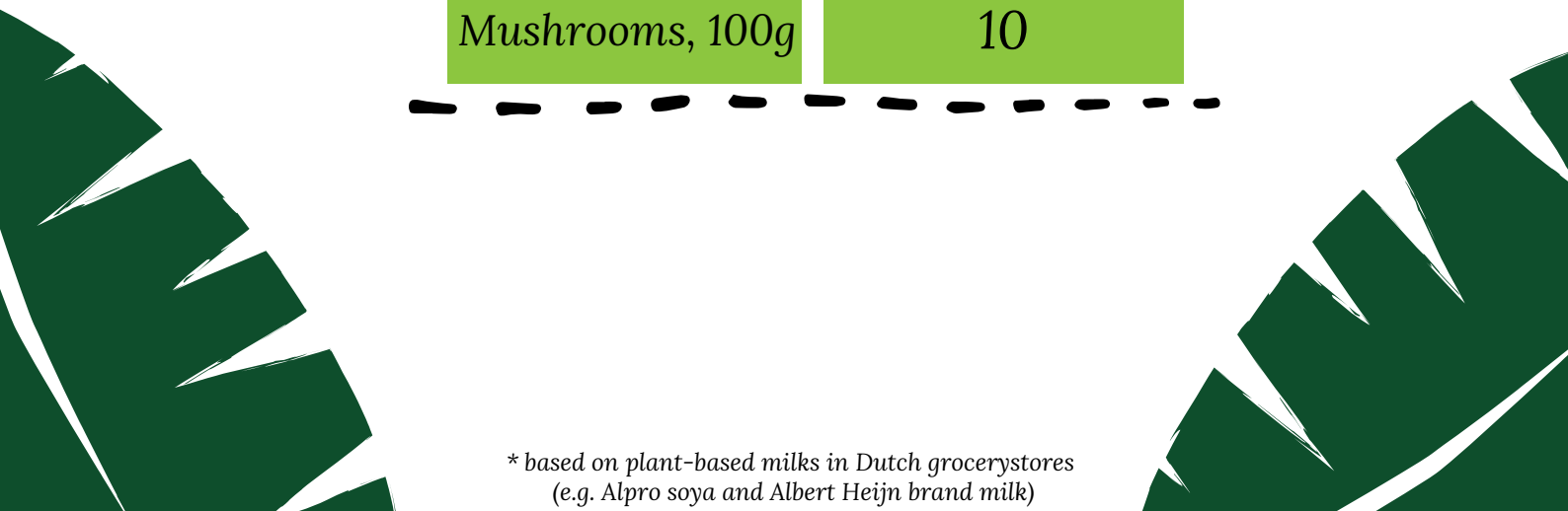
- 15 mcg (600 IU)

UL<sup>10</sup>:

- 100 mcg (4000 IU)

Regular and moderate sunlight exposure will aid in receiving an adequate amount of vitamin D. During winter or when due to circumstances it is not possible to get vitamin D through sunlight, fortified foods and mushrooms can aid in reaching the RDA.<sup>2</sup>

Source	Vitamin D (mcg)
Fortified plant-based milk, 100ml	0,75*
Fortified margarine, 1 tsp	0,5
Mushrooms, 100g	10



\* based on plant-based milks in Dutch grocery stores (e.g. Alpro soya and Albert Heijn brand milk)

# Protein

RDA<sup>1</sup>:

- 0,83 g/kg/day for non-vegans (0,83 \* your weight)

- 0,90 g/kg/day for vegans

UL<sup>11</sup>:

- 3,5 g/kg/day

Food (1/2 cup)	Protein (g)	Food (1/2 cup)	Protein (g)
Edamame	10	Pumpkin seeds	20
Soybeans	15	Sesame seeds	12
All other beans (e.g. chickpeas)	7	Chia seeds	12
Tofu, firm	20	Broccoli	2
Oatmeal	3	Garlic	4
Quinoa	4	Shiitake mushrooms, dried	20
Almonds	14-16	Peas	4
Cashew nuts	12	Spirulina, 1 tbsp	4
Line seeds, grounded	12	Sun-dried tomatoes	4
Hemp seeds	26	Coconut milk, fresh	3

# Omega-3 fatty acids

RDA:

- 1.6g: males<sup>1</sup>

- 1.1g: females (1.4 when pregnant and 1.3 when lactating)<sup>12</sup>

UL<sup>12</sup>:

- Although no UL has been set, it is advised not to exceed 3 grams a day

Food (1 tbsp, 15ml)	ALA (g)	Food (30 g)	ALA (g)
Canola oil	1,3	Butternuts	2,5
Flaxseed oil	7,3	Chia seeds, 2 tbsp	4
Hempseed oil	2,5	Flaxseeds, ground, 2 tbsp	3,2
Soybean oil	0,9	Hemp seeds, 2 tbsp	1,7
Olive oil	0,1	Walnuts	2,6
Walnut oil	1,4	Peanuts	0,001



# Sample menu

To make it a bit easier to eat a varied and complete vegan diet, a sample menu is provided here. Due to the fact that I am not a certified nutritionist, a menu compiled by Davis and Melina<sup>2</sup> has been utilized. This menu is based on a 76 kg (168 pound) individual and provides around 2000 calories.

## Breakfast

- 2 slices of toast
- 2 tablespoons tahini
- 1 tablespoon molasses
- 1 glass of calcium-fortified orange-juice

## Lunch

- 1 tortilla + 60g black/pinto/refried beans
- 1 tomato + 75g lettuce + 1/4 avocado + salsa
- 125ml fortified plant-based milk (e.g. almond, soy)

## Dinner

- 100g whole grains (e.g. quinoa, brown rice)
- 250g mixed lettuce
- 2 tablespoons dressing with fortified nutritional yeast
- 80g tempeh with BBQ sauce

## Snacks

- 40g dried figs and 1 orange
- 30g pumpkin seeds
- 125ml fortified plant-based milk (e.g. almond, soy)
- 30g dark chocolate





# References

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