

Meat consumption: an overview of organizations and their impact

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Introduction

Meat is perceived as an essential nutritional source by people and the absence of it is seen as an alarming occasion as if there is no substitution when the topic is meat. However in recent years, a shift from meat based diets to meat free diets is happening rapidly. Despite the general perception about the necessity of animal consumption, researches show that it is possible to substitute meat with plant based nourishment; indeed there are many advantages of practicing a plant based nourishment.

Although the plant based diet is deemed as extreme and impossible, there are many organizations (mostly about animal rights) that promote and support these kind of diets. In this report, organizations from France and Turkey who aim to increase awareness about the -ethical, environmental or health related- results of meat consumption will be mentioned. The relation between the cultures of these countries and methods of these organizations will be analyzed. Furthermore, the reasons behind this rapid change in number of people who choose meat free diets will be examined.

Concerns About Vegetarianism and Veganism

1) Health Effects

Vegetarian and vegan diets are generally criticized for being restrictive and unhealthy. However, recent research shows that a balanced plant-based diet can indeed be sustainably healthy and it can have further potential benefits. For instance, recent research links consumption of red and processed meat to increased risk of several types of cancer (Cross et al., 2007). Some studies conclude that a carefully designed plant-based diet can be a useful strategy for reducing the risk of cancer (Lanou and Svenson, 2011), while others find no significant differences between vegetarians/vegans and omnivores.















































Consuming plant foods that are rich in fiber, antioxidants and other phytochemicals can also be beneficial in maintaining a healthy weight. Several cross-sectional studies show that on average, vegetarians and vegans have lower BMI (body mass index) and a low plasma cholesterol concentration (Key et al., 2006).

Vegetarian and vegan diets are rich in vitamin C, vitamin E, magnesium, n-6 fatty acids, folic acid and fibre and low in protein, saturated fats, vitamin B12, calcium and zinc (Key et al., 2006). There are also differences between vegetarians and vegans. Vegans on average have particularly lower levels of calcium and B12 compared to vegetarians.

i) Nutritional Concerns

Protein:

Contrary to common knowledge, protein deficiency is not a major concern in a balanced vegetarian or vegan diet. Recommended dietary reference intake of protein is on average 56 grams for males and 46 grams for females. The chart below shows plant-based foods that are rich in protein.

	1 medium banana 105 cals 1.5 g pro		1 oz raisins 85 cals 1 g pro		edamame, shelled 1/2 cup, cooked 120 cals 13 g pro		2 cups leafy greens 20 calories 1 g pro
	1 cup strawberries 46 cals 1 g pro		2 medjool dates 66 cals 1 g pro		black-eyed peas 1/2 cup, cooked 100 cals 13.5 g pro		quinoa 1/2 cup, cooked 111 cals 4 g pro
	1 cup purple grapes 104 cals 1 g pro		1 oz almonds, (23 ea) 164 cals 6 g pro		green peas 1/2 cup, cooked 62 cals 4 g pro		steel cut oats 1/2 cup, cooked 85 cals 3.5 g pro
	1 cup green grapes 104 cals 1 g pro		1 oz pecans, 19 halves 196 cals 3 g pro		black beans 1/2 cup, cooked 113 cals 8 g pro		brown rice 1/2 cup, cooked 109 cals 2.5 g pro
	2 tangerines medium 94 cals 1.5 g pro		1 oz walnuts, 14 halves 185 cals 4.5 g pro		kidney beans 1/2 cup, cooked 113 cals 8 g pro		wild rice 1/2 cup, cooked 83 cals 3.5 g pro
	1 cup blueberries 84 cals 1.1 g pro		1 oz cashews 157 cals 5.2 g pro		navy beans 1/2 cup, cooked 127 cals 8 g pro		1 baked potato large (299 g) 278 cals 8 g pro
	1 cup blackberries 62 cals 2 g pro		1 tbsp almond butter 98 cals 3.5 g pro		adzuki beans 1/2 cup, cooked 147 cals 9 g pro		1 sweet potato large (180 g) 162 cals 4 g pro
	1 cup raspberries 64 cals 1.5 g pro		6 celery sticks (5" stalks) 18 cals 0.75 g pro		pinto beans 1/2 cup, cooked 122 cals 8 g pro		1 whole grain tortilla sprouted, Ezekiel 80 cals 3 g pro
	1 cup pineapple 82 cals 1 g pro		6 carrot sticks, 5" stalks (~10 baby carrots) 50 cals 1 g pro		garbanzo beans 1/2 cup, cooked 134 cals 7.5 g pro		unrefined EVOO 1 teaspoon or 5 mL 40 cals 0 g pro
	1 medium apple 95 cals 0.5 g pro		1 avocado (136 g) 227 cals 3 g pro		non-GMO corn 2/3 cup, cooked 100 cals 3 g pro		balsamic vinegar 1 tablespoon (15 mL) 20 cals 0.8 g pro
	2 kiwifruit 84 cals 1.6 g pro		2 tbsp guacamole 80 cals 2 g pro		mixed vegetables 2/3 cup, cooked 60 cals 2 g pro		4 green olives 16 cals 0.15 g pro
	1 cup cherries 87 cals 1.5 g pro		1 cup cherry tomatoes or ~ 10 each 30 cals 1.5 g pro				Earth Balance butter 1 teaspoon or 5 mL 27 cals 0 g pro


 **chart key:** 1 tsp = 5 mL; 1 tbsp = 15 mL; 1 oz = 30 mL; 1 cup = 8 oz = 240 mL
grams (g); protein (PRO); calories (CAL); teaspoon (tsp); tablespoon (tbsp); ounce (oz); milliliters (mL)

Chart prepared by Rana Mcdonald, LD

B12:

Vitamin B12 (cobalamin) is produced in the digestive tracts of mammals so it can only be obtained from animal products such as meat, dairy and eggs. Vitamin B12 is essential for the proper functioning of the brain and nerve cells. Recommended dietary allowances for B12 is 2.4 mcg for female and male adults. Table 1 includes a selected list of B12 sources.

Food	Micrograms (mcg) per serving
Breakfast cereals, fortified with 100% of the DV for vitamin B12, 1 serving	6
Trout, rainbow, wild, cooked, 3 ounces	5.4
Salmon, sockeye, cooked, 3 ounces	4.8
Trout, rainbow, farmed, cooked, 3 ounces	3.5
Tuna fish, light, canned in water, 3 ounces	2.5
Cheeseburger, double patty and bun, 1 sandwich	2.1
Haddock, cooked, 3 ounces	1.8
Breakfast cereals, fortified with 25% of the DV for vitamin B12, 1 serving	1.5
Beef, top sirloin, broiled, 3 ounces	1.4
Milk, low-fat, 1 cup	1.2
Yogurt, fruit, low-fat, 8 ounces	1.1
Cheese, Swiss, 1 ounce	0.9
Beef taco, 1 soft taco	0.9
Ham, cured, roasted, 3 ounces	0.6
Egg, whole, hard boiled, 1 large	0.6
Chicken, breast meat, roasted, 3 ounces	0.3

Table 1. Selected Food Sources of Vitamin B12
Source: U.S. Department of Health and Human Services

Lacto-ovo vegetarians can get enough B12 by consuming dairy and eggs. For vegans, the only reliable sources of B12 are fortified foods and supplements. Hence transition from omnivore to vegan diet is associated with a high risk of B12 deficiency. People who are following a vegan diet tend to consume organic/natural products and they may avoid taking supplements. Several NGO's we have interviewed in underlined the importance of this issue among vegans and they are actively working on it to inform people who have transitioned to a vegan lifestyle.

Calcium and Zinc:

Studies show that plant-based diets have lower intake levels of calcium and zinc. However, these micronutrients are abundant in a wide assortment of vegetables. Fortified foods such as fortified bread, soy milk and almond milk, green leafy vegetables, kidney beans, black eyed-beans, chickpeas are rich in calcium. The best plant-based sources of zinc include whole grains, beans, legumes, nuts and seeds.

2) A case for veganism: environmental problems

Recent estimates suggest that animal agriculture is responsible for 18 percent of greenhouse gas emissions more than the combined emissions from all transportation, which is at 13 percent (Steinfeld et al., 2006). Methane gas is 25 times more destructive for the environment than carbon dioxide and only cows produce 150 billion gallons of methane per day (Shindell et al., 2009).

A recent study by Oxford Martin School is the first to estimate the effects of plant-based diets on climate change. They find that a widespread switch to vegetarianism could curb greenhouse emissions by 63 percent and veganism by 70 percent (Springmann et al., 2016).

For further reading, a very detailed analysis of the issue can be found in the United Nations report *Livestock's Long Shadow: Environmental Issues and Options*.

Another issue with animal products is that the production process is not efficient, because you are feeding the livestock much more than the amount of food you get in the end. Hoekstra (2008) and Gerbens-Leennes, Mekonnen and Hoekstra (2013) also show that animal products have a larger footprint compared to crop products. On average, 15.500 litres of

water is used to produce 1 kg of meat, 250 litres of water is used to produce 1 glass of milk (250 ml), 3.900 litres of water is used to produce 1 kg of chicken. Table 2 includes a list of water footprint of different food products.

Food item	Unit	Global average water footprint (litres)
Apple or pear	1 kg	700
Banana	1 kg	860
Beef	1 kg	15,500
Beer (from barley)	1 glass of 250 ml	75
Bread (from wheat)	1 kg	1,300
Cabbage	1 kg	200
Cheese	1 kg	5,000
Chicken	1 kg	3,900
Chocolate	1 kg	24,000
Coffee	1 cup of 125 ml	140
Cucumber or pumpkin	1 kg	240
Dates	1 kg	3,000
Groundnuts (in shell)	1 kg	3,100
Lettuce	1 kg	130
Maize	1 kg	900
Mango	1 kg	1,600
Milk	1 glass of 250 ml	250
Olives	1 kg	4,400
Orange	1 kg	460
Peach or nectarine	1 kg	1,200
Pork	1 kg	4,800
Potato	1 kg	250
Rice	1 kg	3,400
Sugar (from sugar cane)	1 kg	1,500
Tea	1 cup of 250 ml	30
Tomato	1 kg	180
Wine	1 glass of 125 ml	120

Table 2. The water footprint of different food items. Taken from *The water footprint of different food items*, Hoekstra (2008)

The land needed to grow enough food to feed a person following a plant based diet and an omnivore diet also varies a lot. The land required to feed a vegan for 1 year is approximately 1/6 acres, a vegetarian is 3 times as much of a vegan and a meat eater is 18 times as much of a

vegan (Robbins, 2012). In order to maintain the unsustainable land needed to raise livestock, 1-2 acres of rainforests are being cleared every second and animal agriculture is responsible for 91 percent of Amazon Rainforest destruction (Margulis, 2004).

Concerning all these facts about livestock and animal agriculture, a plant-based diet can be also beneficial for the environment that is beyond ethical and health-related issues.

Interviews

Veggie World Lyon



VeggieWorld is deemed as Europe's largest and oldest vegan trade fair for products and services aimed at both the general public and industry. In order to get in contact with the companies and organizations from France we chose the Lyon branch of this event which is held in January. During our interviews, three organizations caught our

attention. These three organizations' representatives' own words about how their organization works, how the French culture impacted the direction of their actions and their thoughts about the recent changes in number of the vegan and vegetarian people and the reasons behind it, are available below.



L214:



It is difficult to count the amount of people following this diet in France. We don't have the exact number. But the thing that does matter is not the amount of vegan people in France. The minds of the people are changing. The most important point is to change the way that people think at schools, institutions of the state, etc. So we feel that the development of

veganism is improving. The number of vegan people is also increasing but it is not the most important point for us.

It is a long way because we are fighting against animal exploitation and the industry behind it and its financial interest. So the most important point for us is to change the laws step by step because it is a long way.

Our government follows a very restrictive policy about veganism. They do not want to include vegetarian meals in prisons, hospitals and schools because of the financial interest of the meat lobby. The meat industry is very powerful in France so the government do not want to change anything. Our government still teaches children that it is good to have cows in the fields ready to give us food. They don't want to show some other possibilities about diets. Eating meat, that's the only policy of our government.

L214 is now a big enough organization to be able to speak directly to our politicians and tell them the situation about, for example, the egg system in France in order to end the big industrial farms where chickens grow with no grass and no sunlight. We got that power but still we are working against this kind of firms, this industry. We are still fighting against this industry.

The change starts to go faster now. We can see the development of veganism in France and they conceive a lot of different vegan products. A lot of people started businesses proposing selling vegan products. So we can say that it's going really fast and we are happy about it.

For most of the people, the reason behind choosing a vegan diet is all about animal ethics. When you do boycott leather in shoes for example, and the fur, for some of us it is all about animal rights. But for some older people it is about health. Because they are getting older and they start to believe, if they stop eating meat and drinking milk maybe they will be more healthy.

Association Vegetarienne de France:



We are a vegan organization. We help people to go vegetarian and vegan. we think everything is good when they are in the good direction. So we are not saying, only veganism is right and everything else is wrong. I think the process of change in France is really slow. France is one of the last European countries when the topic is veganism. There are many people who don't want to hear about it so this kind of events are rare. It is the first time in Lyon for Veggie World and Lyon is the second biggest town in France. Our culture is the reason behind this slow process. Many people in France say meat is irreplaceable. The French cuisine may be one of the reasons. Prices of the vegan products are another reason. When I first

went vegan, I thought that it would be a lot cheaper because meat is very expensive, cheese too. but vegan products are very expensive because they are rare. There are a few shops. It is difficult because false meat is as expensive as real meat. But I think things are going in the right direction as there are more and more shops and restaurants that offer vegan products. Even in non-vegan places like markets or restaurants, there are more and more vegan products.

Our organization gives information. This is the main thing that we do. We help people to eat less meat and go vegetarian or vegan if they want. We help with all kinds of documents to understand how it works, how to cook. We help them meet other vegans. Many people understand the problems but there are few people who really do something. I think it's because it is difficult and they can't even stop eating meat. So I think there are not many vegans but looking at this event there are many people so maybe I'm wrong, I don't know.

Societe Vegan:

Societe Vegan is a French association who tries to make veganism feasible. The association tries to protect the vegan community from B12 deficiency. We try to provide information to people who are interested. The main focus became the nutritional deficiency because it was a big problem. There was even a vegan girl who died because of it in France. Everybody thought that plant-based nutrition is enough but it was not. Because of that the association changed the direction and now we provide information to people. Because the first objective was to make veganism public and feasible. It's not possible if people are dying or getting sick. So we provide

information about nutrition and we sell a product which is a multivitamin complex and with the revenue we give free to people who need it. There are other projects that we could engage in but we are not because this is a priority. 50% of vegans have B12 deficiency because they lack information.

There are more and more vegans. It is a popular subject. But compared to the world population, there is still a few vegans. So it's increasing, it's on the rise but it's still really low. And we don't know if people who are vegan now will still be vegan in a few years because of problems of deficiency for example. If you have a health problem, you don't want to stick with veganism. So we want to stay cautious about the problems and keep the people informed.

Recent Trends and Developments in Turkey

Vegan alternatives to meat and dairy

The recent developments in Turkey are very promising. Veggy, recently became the first all-vegan Turkish company to produce vegan alternatives to meat products. They are currently producing tofu, vegan döner, schnitzel, meatballs and a minced meat alternative, pea protein. Their products are available in nearly every city in Turkey. The pricing of vegan alternatives is almost the same with meat products. This pricing strategy is a bit questionable as these products are generally soy or pea based, which on average are much more cheaper to produce. There can be several plausible explanations of the pricing strategy. Firstly, the demand for vegan products is relatively low as they attract a smaller market of customers, while meat-producing companies are large and they benefit from economies of scale. The government also heavily subsidizes the animal agriculture industry. Plant-based diets are generally followed by people with higher level of socioeconomic status, so those who demand vegan products can afford to pay more for these alternatives, hence this can be a form of rent seeking. We have discussed the pricing issue with La Boucher Vert, a similar company based in France, and they have underlined that their products should be compared with organic meat products, as all of their produce is GMO-free, preservative-free and organic. From this point of view, vegan alternatives are much cheaper in comparison to the organic meat products.

Another Turkish company, Trakya Çiftliği has also very recently started to produce vegan milk, yogurt and a variety of cheese products.

2016 TVD Vegan Day Event

On November 1, 2016, TVD (Vegetarian and Vegan Foundation in Turkey) organized a Vegan Day event for the first time in Turkey.



2016 TVD Vegan Day Event

The first Vegan festival of Turkey, jointly organized by TVD and the municipality of Didim, will be held on 29-30 April. The municipality of Didim has been recently self-declared as the first veg-friendly city of Turkey. In addition to the vegan festival, hotels and restaurants will be adding veg-friendly options to their menus; residents of the town are encouraged to cut meat entirely for one day a week.

Conclusion

Meat consumption still holds its position as an essential part of daily diets. However, the vegan and vegetarian scenes in cities such as Lyon and İstanbul shows that, the popularity of plant-based diets is increasing rapidly. Vegan and vegetarian events are in demand and the level of participation of this kind of events can not be underestimated.

Every day, more and more vegan or vegetarian products are launched and the prices are adjusting to the high demands of the people. The animal rights organizations are catching up with the speed of these products and events by organizing events to inform people and precluding the problems of choosing a plant-based diets such as nutrition deficiency.

Overall, the world is changing and the choice of not eating animals is more feasible than ever before. Popularity of veganism and vegetarianism is on the rise and animal rights organizations are promoting this trend in every possible way. Today, eating meat is not a must, but rather a choice. Hereby, the question is what you are choosing in the light of the knowledge of animal exploitation. Whether you choose to keep the animals alive or eat them, is up to you.

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