

Exercise 1

THE ECOLOGICAL FOOTPRINT OF YOUR CHEESEBURGER

MATERIALS FOR THE AGE GROUP 14-19 years



jv.wikipedia.org

Overview

Aim of the exercise: to learn how great the influence of animal ingredients in a product is on the overall Ecological Footprint of the food and to realize, what difference the choice of different meat types makes.

Duration: about 25 minutes

Setting: classroom and/or PC lab

(Optional Material: possibly a scale for weighing the parts of a cheeseburger)

Task

Calculate the Ecological Footprint of a cheeseburger:

On the next page is a table and a graphic, which gives you an overview on the average Ecological Footprint of food.

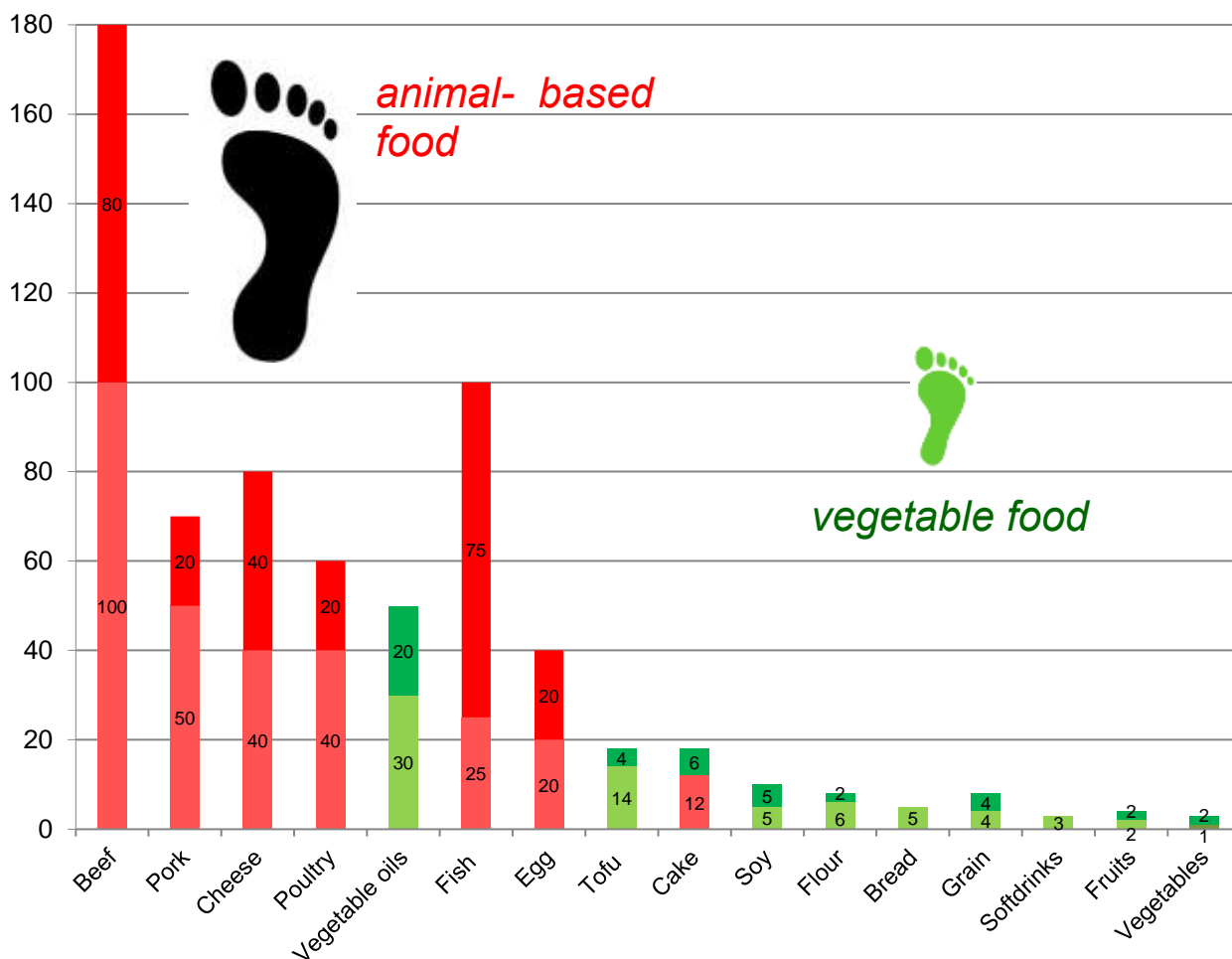
1. Calculate roughly the Footprint of your cheeseburger or hamburger by estimating or weighing the weights of the meat, the bread, the cheese etc. or by looking up the weights in the internet (e.g. hamburger from a Fast food chain). Use the average numbers of the global square meters (gm^2) of the table.
2. Then look at the result: how could you change the ingredients of your cheeseburger to get a smaller Footprint for it? Look at the graphic. What else can you choose instead of beef to reduce the Ecological Footprint of your hamburger? Pork, poultry, fish, tofu, falafel, vegetables?

How does the size of the Footprint change if you leave out the cheese?

Roughly calculate the Footprint of a burger with a different filling than beef.

Food	from gm ² /kg	to gm ² /kg
Beef	100	180
Cheese	40	80
Pork	50	70
Poultry	40	60
Vegetable oils	30	50
Fish	25	100
Egg	20	40
Tofu	14	18
Soy	5	10
Flour	6	8
Grain	4	8
Bread	5	
Vegetables	1	3

The reason, why there are 2 values for each food (Beef from 100 to 180 gm²/kg) is, that the Footprint depends on the type of animal husbandry and on the way the food is produced. E.g. fish, which is fed with other fish (salmon) has a higher Footprint, than fish, which is fed with plants (pangasius) or fish, which is not fed at all because it is a wild fish (sardine, herring).



Result

The Ecological Footprint of a cheeseburger could look like this:

Meat (beef) 50 g:	7 gm ²
Bread 60 g:	0.3 gm ²
1 Cheese 20 g:	1.2 gm ²
2 tomato slices 10 g:	0.02 gm ²
Salad, onions 5 g:	0.01 gm ²
<u>Sum</u>	<u>8.53 gm²</u>

8.53 gm² is the Ecological Footprint of my hamburger.

If I use meat from poultry instead of beef, the meat would have a Footprint of 2.5 gm².
So the whole **Footprint of a chicken-burger would be 4.03 gm²** - less than a half of a hamburger!



png.img.com

How big would the Ecological Footprint of a veggie burger be?

⇒ You can find other exercises, games and information about the Ecological Footprint in general or about the Ecological Footprint of nutrition, housing, mobility and consumption here:

- Offline Material: <https://www.e-co-foot.eu/de/download-der-materialien/>
- Online e-learning: <https://www.e-co-foot.eu/elearning/>