

***The world consumes trillions of virtual gallons.***

Sever a pound of beef and you are also serving up 1,857 gallons of water. A cup of coffee? That's 37 gallons, enough to fill the average bathtub. Pull on a pair of jeans and you're soaking in 2,900 gallons. This is our freshwater consumption we don't directly see. It's called virtual water: the amount of water used to create a product. The concept was coined by geographer Tony Allan of King's College London in the early 1990's to explain why Middle Eastern countries, with limited water resources, were not in outright warfare over water. His answer? They imported food—food grown with other countries' water. Dutch scientist Arjen Hoekstra and colleagues at UNESCO and the University of Twente later calculated the virtual water in commodities as a tool for water management and to give countries, companies and individuals a clearer measure of their water footprint.

**VIRTUAL-WATER FLOW**

Trillions of gallons of virtual water are transferred in the global trade of agricultural products – comparable to the volume of water that yearly flows down the Congo River. Regions leading in beef and grain exports are the top exporters of virtual water. To feed a growing population, experts say that water-use efficiency will need to double in the next 20 years. Weighing the export value of a crop against its impact on the local water supply, and charging more to reflect the water's value, could become part of the equation.

**MEAT**

The virtual water in cattle, pig and fowl is the water they drink and the water used to grow their feed and clean their waste.

Gallons used to produce one pound of :

Beef	1,857 gallons	Pork	756 gallons
Sheep	731 gallons	Goat	127 gallons
Chicken	469 gallons		

**ANIMAL PRODUCTS**

Virtual-water totals include the water used to raise the animals and process the edible end product.

Gallons used to produce one pound of :

Sausage	1,382 gallons	Cheese	589 gallons
Eggs	400 gallons	Yogurt	138 gallons

**FRUITS AND VEGETABLES**

Both rainwater and irrigation water are included in virtual-water totals.

Gallons used to produce one pound of :

Figs	379 gallons	Plums	193 gallons
Cherries	185 gallons	Banana	103 gallons
Apples	84 gallons	Grapes	78 gallons
Oranges	55 gallons	Strawberries	33 gallons
Avocados	154 gallons	Corn	109 gallons
Beans	43 gallons	Potatoes	31 gallons

**COMMONS GOODS**

Cotton is a water-intensive crop and heavily fertilized. Nearly 15 percent of the virtual water in cotton goods represents water used to dilute wastewater for fertilized fields plus the water used to transform cotton into fabric. Coffee requires about the same amount of water as tea to grow, but it ranks far higher in virtual water because of the lower yield of end product per acre. That doesn't make drinking coffee a bad choice: More important than any product's virtual-water total is whether the region it comes from has sustainable water to grow the crop. Gallons used to produce one :

Blue jeans	2,900 gallons	Hamburger	634 gallons
Cotton T-Shirt	766 gallon	Glass of Milk	53 gallons
Cotton Bed sheet	2,800 gallons	Cup of Coffee	37 gallons
Glass of Wine	32 gallons	Glass of Beer	20 gallons
Cup of Tea	9 gallons		

***Virtual-water totals given here are global averages. They will vary by region, depending on farming practices and how raw materials are processed***