

Water Windmill Challenge

Importance of Water

How much water do we use everyday?

Millions of gallons of water go into every product we buy, use and throw away. It takes 24 gallons of water to make 1 pound of plastic . . . twice as much to make the plastic bottle as the water in the bottle. Whether it is the gas we put in our car, the hamburger we have for lunch or the t-shirt we put on for school, the important link is WATER!

Only 1% of the water found on earth is considered safe for humans to drink and use. The rest is salty or frozen in the polar ice caps. We can't make more water, but we can all become better stewards of this important natural resource.

Agriculture innovation is increasing the efficiency of water usage needed to produce food while enabling fewer farmers to feed a growing population. Over the past 45 years, the human population has doubled. If current growth rates continue, in 80 years the U.S. population will be twice what it is now. Today, one U.S. farmer is able to feed 155 people and is the leading producer of more than 50 foods of importance to diets around the world. Technology and innovation drives the ability of agriculture to feed more people on fewer acres while becoming more sustainable for future generations. Every person and industry leaves a water footprint. The agriculture industry is reducing its water footprint through advancements in plant and animal genetics, engineering solutions, and adoption of alternative energy sources.

Supplementing existing surface water sources is a real problem for livestock and crop farmers in the Midwest. Looking below the earth's surface to tap into ground water resources, allows farmers to continue to provide the water needed for their families, crops and livestock.

Advances in technology have made this easier. The traditional, mechanically powered windmills that dotted the land 150 years ago are being replaced by high-efficiency wind turbine generators. Sleek, aerodynamic designs with curved blades and heavy, gear-less wind turbine motors generate power to pump water quickly and efficiently.

How much water does it take to produce the following items? Match the amount of water with the correct product.

- | | |
|-----------------------------------|--------------------------------|
| ____ 1. apple | a. 7000 liters or 1849 gallons |
| ____ 2. glass of apple juice | b. 6.6 liters or 1.75 gallons |
| ____ 3. 1 lb of beef | c. 8000 liters or 2113 gallons |
| ____ 4. cotton shirt (250 g mass) | d. 2500 liters or 660 gallons |
| ____ 5. jeans (800 g mass) | e. 230 liters or 61 gallons |
| ____ 6. gallon of gasoline | f. 125 liters or 33 gallons |

(amounts taken from <http://waterfootprint.org/en/resources/interactive-tools/product-gallery/>)

To check your personal water footprint, visit: <http://waterfootprint.org/en/water-footprint/personal-water-footprint/>

*This document may be reproduced for educational purposes, but it may not be reposted or distributed without crediting GrowNextGen and The Ohio Soybean Council and soybean checkoff.



Water Windmill Challenge

Answers to importance of water

1. apple a. 125 liters or 33 gallons
2. glass of apple juice b. 230 liters or 61 gallons
3. 1 lb of beef c. 7000 liters or 1849 gallons
4. cotton shirt (250 g mass) d. 2500 liters or 660 gallons
5. jeans (800 g mass) e. 8000 liters or 2113 gallons
6. gallon of gasoline f. 6.6 liters or 1.75 gallons