

Quiz 4 for Module 6: Wind Energy in Agriculture

1. What are the two main factors that create wind?

The sun and Earth's rotation.

2. Where in the United States can some of the most wind potential be found?

The Midwest

3. Briefly explain the concept of mechanical wind power and give an example of its application on a farm.

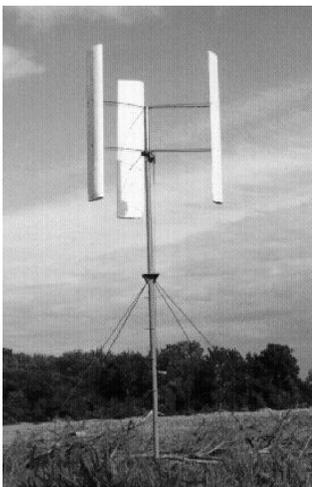
Mechanical wind power converts the kinetic energy of the wind into mechanical power. Could be used to pump water for irrigators or livestock or to grind grain.

4. Electrical wind power converts the rotational energy of a turbine into electrical current when it spins copper coils inside a generator.

5. What is the difference between an upwind and downwind wind turbine?

Upwind- blades are in front of motor (faces into the wind), downwind- blades are behind motor (faces same direction as the wind)

6. Label the turbine designs below as either horizontal axis or vertical axis:



A. Vertical



B. Horizontal

7. What are two advantages to having small scale wind turbines?

Can supplement farm energy use, reliable and remote electricity, energy independence, extra income

8. Grid-tied renewable energy systems are:

A. Exclusively for on-site power use.

B. Exclusively for delivery into power grid.

C. To be used on-site and also to overflow into the power grid.

9. Installing an off-grid wind energy system can be less expensive than extending a power line to the electrical grid. True or false?

True

10. What are two advantages to large scale wind energy production?

Income for farmers through leasing of land, pollution free energy production, small footprint on land, American made energy source, provides jobs, competitive with the cost of fossil fuels