

AGRICULTURE REVIEW (AP ES)

1. Who has the food that it takes 16 lbs of grain to produce 1 lb of and 20% of the world's populations consume 80% of it?

I have MEAT. Consuming grain instead of meat would result in a twenty-fold increase in calories and an eight-fold increase in protein for people worldwide.
2. Who has the nutrition related conditions that kill over 11 million children per year, decrease mental abilities of those that survive, and affect 850 million people worldwide living in poverty?

I have MALNUTRITION and UNDERNUTRITION. Undernutrition stunts growth and weakens the immune system. Malnutrition leads to starvation, disease, and mental weakness.
3. Who has the specific condition related to nutrition that scurvy (vitamin C deficiency), pellagra (protein def), beriberi (vit B1 def), goiter (iodine def), rickets (vit D def), and kwashiorkor (protein def) are examples of?

I have MALNUTRITION. People may be getting enough calories, but not the right combinations of nutrients.
4. Who has what we call combining trees and shrubs with cropland to create a more integrated, diverse, productive, profitable, healthy, and sustainable land-use system?

I have AGROFORESTRY. This creates a more complex ecosystem supporting more birds, insects, and other animals than monocultures. It has the potential to help mitigate climate change as CO₂ is sunk into trees.
5. Who has what we call planting strips of crops between alleys of trees and shrubs?

I have ALLEY CROPPING. This provides shade for evaporation reduction, produces fruit, fuel wood, fodder, and trimmings to be made into mulch.
6. Who has the type of farming in which farmers grow only enough food to feed the family?

I have SUBSISTENCE AGRICULTURE. Planting and animal growing decisions are made with an eye toward the family's needs during the coming year, instead of the market value of their commodities.
7. Who has the practice of growing a series of dissimilar types of crops in the same area in sequential seasons for various benefits such as to avoid the buildup of pests when the same crop is planted year after year?

I have CROP ROTATION. Beans that are legumes (which have N fixing bacterial nodules on their roots that add fertilizer) can be planted one year and corn can be planted the next. This saves fuel and fertilizer application costs.

8. Who has the type of agricultural planting practice that uses a planter or seed drill that barely disturbs the soil?
I have LOW-TILL FARMING. This reduces erosion and can even add to top soil if green manure is grown and laid down on top of the soil.
9. Who has what occurred between 1950-1970 that increased crop yields 200% and now continues doing so through genetic engineering of crops?
I have THE GREEN REVOLUTION. This was made possible by planting monocultures, application of inorganic fertilizers & pesticides, and widespread use of irrigation systems. This is industrial agriculture.
10. Who has the technique that removes, modifies, or adds genes to a DNA molecule in a human food species to produce desired characteristics?
I have GENETIC ENGINEERING. Desired characteristics include fast growth, less spoilage, pest resistance, salt tolerance, pesticide tolerance, perennial vs annual, and low water consumption. Wow, that's asking a lot!
11. Who has the agricultural practice that consumes 75% of freshwater used by people for their needs?
I have IRRIGATION. 70% of the water is lost to evaporation and 40% of crop yields come from 16% of cropland that is irrigated.
12. Who has the food growing practice that integrates environmental health, economic profitability, and social and economic equity?
I have SUSTAINABLE AGRICULTURE. This could be done indefinitely into the future if done correctly reducing topsoil depletion, groundwater contamination, neglect of farm workers, and social injustices.
13. Who has the agricultural practice that kills unwanted pests, but accumulates in the food chain, increases food supply, but causes evolution of super pests, and makes agriculture more profitable, but threatens important pollinators?
I have PESTICIDE USE. They are often neurotoxins and extremely toxic to freshwater animals.
14. Who has the practice that has a goal of controlling pests using polyculture, mulching to control weeds, using natural insect predators, rotating crops, releasing sterilized males, genetically modifying crops, and judicious (with brains/wise) use of pesticides when needed?
I have INTEGRATED PEST MANAGEMENT. If you want a job for the future, IPM people are in demand and will continue to be!

15. Who has what occurs when livestock are allowed to eat grasses without giving rangeland a chance to recover?
I have OVERGRAZING. It reduces plant growth and root length and increases the chances the plant will die resulting in desertification, erosion, and spread of non-native plants (invasive species).
16. Who has what happens when resources such as seas, air, water, animals, and minerals are exploited by those desiring to become wealthy and the resource is polluted or degraded to the point of not being usable?
I have TRAGEDY OF THE COMMONS. This story parallels what is happening worldwide in regard to depletion and pollution.
17. Who has the type of agriculture that involves fish farming and fish ranching?
I have AQUACULTURE. This provides 5% of the food worldwide by stocking, feeding, protecting from predators, and harvesting aquatic species such as kelp, mussels, oysters, shrimp, salmon, trout, and catfish.