**(AP) ENVIRONMENTAL SCIENCE 2022-23 March 13, 2023**

**Today’s Agenda (Day 123)**

1. Housekeeping Items

🡪 BRING:

1. Homework Check:

🡪

🡪

1. Class Activity:

🡪

🡪DAY: Chapter 14 PPT Review

1. **Section 14.1 - The Development of Agriculture**
2. **Section 14.2 - Fertilizer and Agriculture**
3. Section 14.3 - Agricultural Chemical Use
4. Section 14.4 - Problems with Pesticide Use
5. Section 14.5 - Why Are Pesticides So Widely Used?
6. Section 14.6 - Alternatives to Conventional Agriculture

HOMEWORK:

* READ: Chapter 14 – Agricultural Methods and Pest Management
* COMPLETE: Chapter 14 Vocabulary and Reading Guide
* **STUDY**: Chapter 14 Vocabulary Quiz and Chapter 14 Test

REMINDER**~~:~~**

* QUIZ: Ch 14 Vocabulary 🡪Mar. 14
* **TEST: Ch 14 🡪 March 16**
* **TEST: Ch 15 🡪 March 23**
* QUIZ: Ch 15 & 16 Vocabulary 🡪Mar. 30
* **TEST: Ch 16 & 17 🡪 April 4**
* **TEST: Ch 18 🡪 April 11**
* QUIZ: Ch 17 - 19 Vocabulary 🡪April 13
* **TEST: Ch 19 🡪 April 18**

Chapter 14 Vocabulary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alternative agriculture | Auxins | Bioaccumulation | Biocides | Biomagnification | Carbamates |
| Chlorinated hydrocarbons | Fungicides | Genetic engineering (biotechnology) | Genetically modified organism | Herbicides | Insecticides |
| Macronutrients | Micronutrients | Monoculture | Nonpersistent pesticides | Nontarget organisms | Organic agriculture |
| Organophosphates | Persistent pesticides | Pesticide | Pests | Pheromone | Polyculture |
| Rodenticides | Sustainable agricultures | Target organism | weeds |  |  |

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDECHAPTER 14**

REVIEW QUESTIONS

1. How does the practice of shifting agriculture provide nutrients for the growth of agricultural products?

2. Why is abandonment of fields important in a shifting agriculture system?

3. List conditions that make labor-intensive farming necessary.

4. How were the invention of machines and the development of monoculture linked?

5. Why are fertilizers used? What problems are caused by fertilizer use?

6. List three advantages and three disadvantages of large-scale mechanized monoculture.

7. What are micronutrients? How do they differ from macronutrients?

8. List two functions of soil organic matter.

9. Describe why pesticides are commonly used in mechanized agriculture.

10. How do persistent and nonpersistent pesticides differ?

11. What is biomagnification? What problems does it cause?

12. Describe how some populations of pests become resistant to pesticides.

13. How do sustainable farming practices differ from conventional mechanized monoculture?

14. Explain why a complete knowledge of the biology of a pest is important in using integrated pest management.

15. Describe three techniques used to control pests that do not involve the use of pesticides.

16. How is a genetically modified organism different from other organisms?

17. What characteristics have been introduced into insect-resistant and herbicide-resistant genetically modified crops?

18. List three reasons many sustainable farms are small family enterprises.

CRITICAL THINKING QUESTIONS [for APES students only]

1. If you were a public health official in a developing country, would you authorize the spraying of DDT to control mosquitoes that spread malaria? What would be your reasons?

2. Look at table 14.1. What caused the changes in the effectiveness of the insecticide? If you were an agricultural extension agent, what alternatives to pesticides might you recommend?

3. Imagine that you are a scientist examining fish in Lake Superior and you find toxaphene in the fish you are studying. Toxaphene was used primarily in cotton farming and has been banned since 1982. How can you explain its presence in these fish?

4. Are the risks of pesticide use worth the benefits? What values, beliefs, and perspectives lead you to this conclusion?

5. Do you think that current agricultural practices are sustainable? Why or why not? What changes in agriculture do you think will need to happen in the next 50 years?

6. Imagine you are an EPA official who is going to make a recommendation about whether an agricultural pesticide can remain on the market or should be banned. What are some of the facts you would need to make your recommendation? Who are some of the interest groups interested in the outcome of your decision? What arguments might they present regarding their positions? What political pressures might they be able to bring to bear on you?

7. Why are few consumers demanding alternative methods of crop production, and why are farmers not using those methods?