

Food Safety Laboratory Capacity Building

Module 8 Quiz – Answer Key

1. What is the most important characteristic of a method?

- a. Highly selective
- b. Very low LOD
- c. Fit for purpose (includes all the others parameters)
- d. Multi-residue
- e. High throughput

2. In AOAC 991.31, are the detection methods considered highly selective?

- a. Yes (for the method because of the immune column)
- b. No (if we talk about the detector)
- c. I don't know

3. What is the objective of the point system for different parts of a result?

- a. Agreed understanding of the value of each type of result
- b. Agreed understanding that some methods are better than others
- c. Agreed understanding that results don't need to be reviewed if they score > 4 points
- d. I don't know

4. Which of the following must be included in the purpose of a multi-residue method? (Select all that apply)

- a. Whether it is quantitative or qualitative
- b. Which residues or contaminants it measures
- c. Which commodities are covered
- d. Whether the laboratory must be accredited to use it (but depending on your regulation)
- e. Whether it is appropriate for international trade

5. How many pesticide residues should one aim to include in their MRM method?

- a. >1,000 because that is the number of pesticides on the market
- b. <100 because the dwell time is too short with more residues
- c. Whatever the purpose of the laboratory requires
- d. The number of pesticides MRLs in the country's regulations
- e. I don't know

6. Can product ions be measured in HRMS?

- a. Yes
- b. No
- c. I don't know

Response b. (because one HRMS does not have a collision chamber so no daughter ions). However, you could have a HRMS-MS that has a collision chamber

7. What factors increase the cost of analysis by HRMS? (Select all that apply)

- a. Instrument cost
- b. Consumables cost
- c. Cost of reference standards
- d. Cost of maintenance

Responses: All of them. For b and c, it will depend on what was your method before that.

8. Why is intentional economic adulteration a good target for the use of HRMS? (Select all that apply)

- a. Large number of potential contaminants
- b. Large number of potential commodities
- c. Unknown unknown
- d. Large amount of water added to increase weight
- e. Very low concentrations

9. Why are dietary supplements investigated by HRMS? (Select all that apply)

- a. For potential plant toxins
- b. For economic adulteration
- c. For brand protection
- d. For pharmaceutical active ingredients

10. Please describe why HRMS may not be the best choice for all food safety laboratories (Please list at least 3 reasons)

- It is expensive
- Need a lot of experience
- If there are no unknown unknowns, there is no need of HRMS.