MANITOBA AGRONOMISTS CONFERENCE 2019

POSTER QUESTIONS

Total possible CCA Credits available: 2.5 CEU’s

There are 5 Sections attached.

Section 1: 10 questions for 0.5 CEU’s in Nutrient Management
Section 2: 10 questions for 0.5 CEU’s in Soil and Water Management
Section 3: 10 questions for another 0.5 CEU’s in Soil and Water Management
Section 4: 10 questions for 0.5 CEU’s in Crop Management
Section 5: 10 questions for 0.5 CEU’s in Integrated Pest Management

TO RECEIVE CCA CREDITS YOU MUST:

• write your name, signature and CCA # below
• answer questions independently
• correctly answer 7/10 or more questions
• drop off quiz in the CCA Collection Box in Rm 138
  or submit via fax to CROPS (204) 745-5690 or email to John.heard@gov.mb.ca by December 31, 2019
• just fax or email the answer table (see next page)

NAME: _____________________________________________________________________

SIGNATURE: ___________________________________________________________________

CCA #: ______________________________________
### Answer Table

**Section 1: Nutrient Management**

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**Sec 3: Soil and Water Management (2)**

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**Sec 4: Crop Management**

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**Sec 5: Integrated Pest Management**

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Development of 4R Phosphorus Fertilization Options for Manitoba Farmers and Agronomists

1. The second most common method of phosphorus placement in Manitoba wheat crops is?
   a. Seed placed
   b. sidebanded
   c. mid row banded
   d. broadcast

2. A long-term sustainability approach to phosphorus considers:
   a. Long term land tenure
   b. Economic yield response
   c. Short term land rent
   d. Current crop prices and fertilizer costs

3. Buffering capacity (BC) is:
   a. The amount of P required above removal to raise soil test P 1 ppm.
   b. The amount of P required above removal to raise soil test P 1 lb/ac.
   c. The amount of P₂O₅ required above removal to raise soil test P 1 ppm.
   d. The amount of P required above removal to raise soil test P₂O₅ 1 ppm.

4. The rotational fertilization with P is appropriate when:
   a. Manure is not available
   b. Sideband options are available
   c. Using expensive, specialty forms of P
   d. Annual P rates cannot be safely or practically applied at seeding

5. Which of the following situations may best fit a “short term sufficiency” approach?
   a. Newly purchased land
   b. Slow P prices
   c. High crop values
   d. Rented land
Identifying the Influence of Agronomic Management on N uptake and Distribution patterns in Spring Wheat

6. Which cultivar took up more of its N following anthesis than the others?
   a. AAC Brandon
   b. AAC Cameron
   c. Prosper

7. Which N management practice had the greatest N uptake?
   a. 78 kg/ha N as urea
   b. 156 kg N/ac as urea
   c. ESN: urea blend
   d. Split application of urea

8. Nitrogen remobilized from leaf and stem tissue was strongly related to:
   a. N taken up before anthesis
   b. N taken up after anthesis
   c. Split N levels
   d. Total N uptake

9. Which cultivar remobilized the least N from stem tissue
   a. AAC Brandon
   b. AAC Cameron
   c. Prosper

10. Use of the PGR resulted in:
    a. More pre-anthesis N uptake
    b. Less pre-anthesis N uptake
    c. More total N taken up
    d. Less total N taken up
Anthronutrients: Soil Amendments for Closing Urban to rural Nutrient Cycles

11. Anthronutrients are:
   a. Waste nutrients from urban areas recycled back to farms
   b. Waste nutrients from farms recycled back to cities
   c. Recycling of manure nutrients onto crop farms
   d. Recycling of food wastes to farms

12. Struvite is extracted from:
   a. Composting organic material in the absence of oxygen
   b. Composting organic material in presence of oxygen
   c. Precipitation of P from wastewater or manure
   d. Decomposing food waste by insects

13. Which nutrient has the higher P content?
   a. struvite
   b. mono ammonium phosphate
   c. frass
   d. digestate

14. Struvite performed better than the unfertilized control in the:
   a. wheat field study
   b. wheat pot study without N
   c. wheat pot study with N
   d. rye grass pot study with N

15. Which nutrient form performed most similar to MAP in all tests?
   a. struvite
   b. frass
   c. digestate
   d. compost
Constructing a biobed system for rinsate management in Manitoba

16. Biobeds are used to:
   a) Compost straw
   b) Decontaminate pesticide rinsate
   c) Remove nitrates from the water
   d) Store all the pesticide rinsate

17. The biomix is a 2:1:1 mixture of:
   a) Soil:straw:peat
   b) Peat:soil:straw
   c) Peat:straw:soil
   d) Straw:soil:peat

18. Pea gravel is used as a base in the bed to:
   a) Fix N so straw will decompose in the biobed
   b) Allow uniform heating in spring period
   c) Prevent rapid rotting of the biomix
   d) Aid in drainage

19. The heating tubes are used to:
   a. Prevent water from freezing in the winter
   b. To keep microbes active during winter months
   c. For spring and fall warming of the biobed
   d. Accelerate volatilization of pesticide residues

20. Pesticide residues are applied to the biobed through:
   a. The weeping tile
   b. A collection trough connected to nozzles and booms
   c. A drip irrigation manifold
   d. Gravity flow from the rinsate storage tank
The Resurgence of Sol Survey: Not a Lost Art

21. A 1:20,000 scale soil survey is composed of ____ pits per section?
   a. 1
   b. 6
   c. 20
   d. 36

22. A simple map unit of \( \text{NDL} \) indicates:
   \( \text{1c2s} \)
   a. Moderately eroded
   b. Nearly level
   c. Moderately stony
   d. Non saline

23. A compound map unit of \( \text{NDL}^{7} - \text{DRO}^{3} \) indicates:
   \( \text{1c1x x x 1 s} \)
   a. 70% slightly eroded
   b. 30% slightly eroded
   c. 70% level
   d. 30% nearly level

24. Which factor is not used in classification of soil:
   a. texture
   b. carbonates
   c. drainage
   d. fertility

25. The predominant survey coverage in the Interlake region is on the scale of:
   a. 1:63,360
   b. 1:100,000
   c. 1:125,000
   d. 1:126,720
Know and Grow – Weather Monitoring for Farm Management

26. At which site is the smallest increase in temperatures between 1951-80 to 1981-2010?
   a. Souris
   b. Carman
   c. Zhoda
   d. Dauphin

27. The Manitoba Weather program has a 108 sites powered by:
   a. Nuclear fusion
   b. Wind power
   c. Hydro electricity
   d. Solar power

28. What weather data is gathered at a height of 1.5m?
   a. Wind speed
   b. Humidity
   c. Solar radiation
   d. Barometric pressure

29. Data is transmitted from the weather stations;
   a. During government working hours and never on statutory holidays
   b. Daily
   c. Hourly during the winter
   d. Every 15 minutes year-round, rain or shine

30. The current conditions page does not include:
   a. Wind speed and direction
   b. Available soil moisture
   c. Hourly precipitation
   d. Soil temperature and relative humidity
FLAWED VS SOUND ON-FARM TESTS

31. What research principle was overlooked in evaluating the biofertilizer?
   a. replication  
   b. randomization  
   c. statistical analysis  
   d. control treatment

32. Numerically the biofertilizer produced how much more yield than the grower’s normal practice:
   a. 2.0 bu/ac  
   b. 6.4 bu/ac  
   c. 8.8 bu/ac  
   d. 3.4 bu/ac

33. Nutrient efficiency benefits of new products may be masked by:
   a. Using high fertilizer rates  
   b. Low soil test values  
   c. Good weed control  
   d. Early seeding

34. Variability between combine passes can be reduced by:
   a. Harvesting across the slope  
   b. Avoiding harvest of sprayer tracks  
   c. Swathing instead of straight cutting  
   d. Harvesting in one direction only

35. Based on the soil testing, one would expect a greater response to copper fertilizer:
   a. On the eroded upper slope  
   b. On the lower slope  
   c. Across both slope positions  
   d. No response
36. Microbial biomass carbon was greatest in which system?
   a. Organic system in grain-only rotation
   b. Organic system in forage-grain rotation
   c. conventional system in grain-only rotation
   d. conventional system in forage-grain rotation

37. In the original PFP studies, revenues were increased without impacting weeds or crop yield by:
   a. summer fallowing
   b. use of pre-emergence herbicides
   c. occasionally omitting in-crop herbicides
   d. regular use of herbicides

38. Manure studies in the NCLE project included use of:
   a. Commercial fertilizer and solid poultry manure
   b. Liquid poultry manure and solid dairy manure
   c. Liquid dairy manure and solid pig manure
   d. Commercial fertilizer and liquid pig manure

39. To determine the “best cropping system” in this ecozone which nutrient use efficiency approach is used?
   a. Short-term sufficiency model
   b. Long-term sustainability model
   c. Nutrient balance model
   d. Build-maintain-deplete model

40. Which specific environmental concerns will be addressed with cover crops?
   a. Wind erosion
   b. salinity
   c. N₂O fluxes
   d. NO₃ leaching
2019 Update on Potato Crop, Disease and Insects in Manitoba

41. How many Manitoba acres were left unharvested in 2019?
   a. 76% of the crop
   b. 12,000 acres
   c. 8,000 acres
   d. 4,000 acres

42. Which potato growing area suffered the lowest temperatures in late September?
   a. Altona
   b. Carberry
   c. Portage
   d. Glenboro

43. Which of the following diseases was not observed in 2019?
   a. Early blight
   b. Late blight
   c. Verticillium wilt
   d. Black dot

44. Which common pest was not reported in the update?
   a. European corn borer
   b. Green Peach aphid
   c. aphid
   d. Colorado potato beetle

45. *Colletotrichum coccodes* causes:
   a. Black leg
   b. Black dot
   c. Stem rot
   d. Late blight
Rapid spread of glyphosate-resistant kochia in Manitoba

46. The first confirmation of Group 2 resistance by kochia in western Canada was in ________.
   a. 1988  
   b. 2012  
   c. 2013  
   d. 2018

47. In the greenhouse populations considered “moderate resistant” had:
   a. 1-20% resistance  
   b. 21-60% resistance  
   c. 61-80% resistance  
   d. 41-60% resistance

48. The crop with the highest portion of GR kochia in 2018 was:
   a. corn  
   b. canola  
   c. cereals  
   d. soybean

49. By 2018 what portion of sampled kochia in Manitoba was GR?
   a. 44%  
   b. 53%  
   c. 59%  
   d. 70%

50. Growers will need to shift kochia management strategies to include:
   a. Crops with stacked resistance traits  
   b. Forages in rotation  
   c. Use of cover crops  
   d. Summer fallowing