2021 MAC | CCA POSTER QUESTIONS

SECTION 1: NUTRIENT MANAGEMENT

Complete all 10 questions (1-10) for ½ CEU

Exploring the effect of high nitrogen rates on oat production

1. Leaf diseases in oats were greatest:
    a. At high N rates
    b. At low N rates
    c. Where lodging occurred
    d. Where protein was highest

2. For oats a grade of No. 3 CW, requires:
    a. Minimum test wt of 51 kg/hL
    b. Maximum test wt of 51 kg/hL
    c. Minimum protein of 10.5%
    d. Leaf disease below a rating of 5

3. Which 2 response curves were most similar?
    a. Yield and SPAD
    b. SPAD and NDVI
    c. Yield and NDVI
    d. N rate and lodging

4. What was the base soil test N level?
    a. 34 kg/ha N
    b. 54 kg/ha N
    c. 62 kg/ha N
    d. 92 kg/ha N

5. The numerically highest yield occurred at what soil & fertilizer nitrogen rate?
    a. 92 kg/ha N
    b. 114 kg/ha N
    c. 136 kg/ha N
    d. 156 kg/ha N

Fall nitrification inhibition of anhydrous ammonia in Manitoba

6. Nitrification inhibitors are meant to extend persistence of nitrogen in the _____ form:
    a. ammonium
    b. urea
    c. nitrate
    d. nitrite

7. The least ammonium N (NH_4^+) concentration in the fall was found in what treatment?
    a. 140 N as NH_3
    b. 110 N as NH_3
    c. 110 N as NH_3 plus CENTURO
    d. Check plot

8. The greatest concentration of NH_4^+ in the early spring was found in what treatment?
    a. 140 N as NH3
    b. 110 N as NH3
    c. 110 N as NH3 plus CENTURO
    d. 110 N as NH3 plus N-Serve

9. Soil N levels were sampled:
    a. Between the bands to 24” deep
    b. Between the bands to 12” deep
    c. In the bands to 24” deep
    d. In the bands to 12” deep

10. Between late fall and late spring, NH_4^+ concentration in the bands decreased as it was _____
    a. converted to nitrate (NO_3^-)
    b. lost to leaching
    c. lost to volatilization
    d. taken up by the crop

SECTION 2: SOIL AND WATER MANAGEMENT

Complete all 10 questions (11-20) for ½ CEU

The 2021 Manitoba Fall Soil Moisture

11. The dielectric permittivity of ice is about:
    a. 80
    b. 30
    c. 3
    d. 1

12. Volumetric soil moisture values displayed by soil moisture sensors _____ as soil temperature approaches or drops below the freezing point.
    a. decrease
    b. increase
    c. remain the same
    d. increase, then reduce

13. The amount of soil moisture that the soil can hold for plant use is:
    a. percent of available water holding capacity
    b. field capacity
    c. wilting point
    d. water holding capacity

14. The 2021 fall soil moisture map showing the amount of available moisture map at 0 – 120 cm shows that most areas have _____ mm of available soil moisture prior to soil freeze-up
    a. < 150 mm
    b. 150 – 225 mm
    c. 225 – 300 mm
    d. > 300 mm

15. With soils having different abilities to hold water, which parameter is used to standardize soil moisture observations regardless of the soil type?
    a. water holding capacity
    b. percent of available water holding capacity
    c. soil texture and organic matter
    d. dielectric permittivity

Direct vs Traditional Potato Planting in Manitoba

16. “Direct” planting included:
    a. No other tillage
    b. Spring vertical tillage
    c. Fall subsoiling
    d. Inter row cultivation

17. Compacted subsoils were fractured by
    a. Extensive penetrometer insertion up to 214”
    b. Running 1 ¼” shanks at 15” deep
    c. Using controlled traffic farming
    d. 2 spring cultivations before the planter

18. Compaction s measured with the penetrometer was::
    a. No difference between depths
    b. Consistently greater using traditional tillage
    c. Consistently greater with direct seeding
    d. No difference between traditional or direct planting

19. Which was not an advantage of greater surface residue with direct seeding:
    a. Less eroded hills
    b. Greater moisture conservation
    c. Greater disease suppression
    d. Buffered heating of top soil

20. Potatoes under direct seeding had:
    a. Slower emergence and higher yield
    b. Quicker emergence and lower yield
    c. No difference in emergence but greater yield
    d. Slower emergence but no difference in yield

SECTION 3: CROP MANAGEMENT
Complete all 10 questions (21-30) for ½ CEU

Performance of commercial wheat varieties under organic production

21. Low yields tended to be from sites:
    a. in Saskatchewan
    b. with high soil P, drought and weedy
    c. with low soil P, excess water and weeds
    d. with low soil P, drought and weeds

22. Which variety yielded highest under the "high yield" organic conditions?
    a. AAC Brandon
    b. AAC Tradition
    c. Vesper
    d. Glenn

23. The most common wheat variety grown by organic growers?
    a. AAC Brandon
    b. AAC Tradition
    c. Vesper
    d. Glenn

24. AAC Tradition is bred for organic production and compared to AAC Brandon is:
    a. Lower yielding
    b. shorter
    c. earlier in maturity
    d. later in maturity

25. Which variety has superior fusarium head blight (FHB) resistance?
    a. AAC Tenacious
    b. AAC Brandon
    c. Vesper
    d. Glenn

Agronomic practices can help to reduce free asparagine (ASN) in western Canadian wheat

AND

Relationship between free asparagine concentration and dough quality in Canadian hard red spring wheat

26. What is the problem with free asparagine in wheat based bakery products?
    a. Low falling numbers
    b. Causes gluten intolerance
    c. Probable carcinogen
    d. Contributes to obesity in society

27. Dough strength is determined from the:
    a. Farinograph
    b. Extensograph
    c. Texvol
    d. UPLC-PDA Free ASN analysis

28. The factor with the greatest effect on dough strength and loaf volume was:
    a. genetic
    b. environment
    c. genetic x environment
    d. fertilization

29. The variety with the highest free asparagine concentration was :
    a. AAC Brandon
    b. AAC Elie
    c. CDC Plentiful
    d. Glenn

30. Fertilization treatments significantly increased
    a. Dough strength
    b. Dough resistance to extensibility
    c. Specific loaf volume
    d. None of these parameters

SECTION 4: PEST MANAGEMENT
Complete all 10 questions (31-40) for ½ CEU

Pesticide rinsate biobed for conserving water quality

31. Biobeds contain mixtures of :
    a. Straw, peat and soil
    b. Straw, animal carcasses, domestic food waste
    c. Peat, food waste and soil
    d. Soil, wood chips and ash

32. Biobeds performed poorly in reducing concentrations of:
    a. 2,4-D
    b. MCPA
    c. chlopryalid
    d. metolachlor

33. Which of the following pesticides are adequately removed in single cell biobeds?
    a. dicamba
    b. MCPA
    c. 2,4-D
    d. fenoxaprop

34. Which of the following pesticides were not adequately removed in dual cell biobeds?
    a. boscalid
    b. EPTC
    c. MCPA
    d. propiconazole

35. Below ground biobeds are located at:
    a. Grand Prairie
    b. Vegreville
    c. Outlook
    d. Carman

Post registration assessment of fusarium head blight resistance in spring wheat

36. Which years had the highest levels of FDK% and DON ppm:
    a. 2015 and 2016
    b. 2009 and 2010
    c. 2012 and 2015
    d. 2016 and 2019

37. Which year was the lowest levels of FDK% and DON ppm:
    a. 2010
    b. 2013
    c. 2017
    d. 2018

38. The Canada Grain Commission's grading factor to predict DON in wheat is:
    a. HVK%
    b. % protein
    c. FDK%
    d. Falling number

39. Which of the following CWRS varieties had the lowest FDK?
    a. AAC Viewfield
    b. AAC Brandon
    c. AAC Redberry
    d. Glenn

40. The single highest level of DON was observed in which wheat class?
    a. CWRS
    b. CPSR
    c. CWSP
    d. CWSWS