

## Effects of soil-borne *Rhizoctonia solani* on canola seedlings after application of glyphosate herbicide

### DIRECTIONS:

1. Read the self-study exam carefully.
2. Answer the questions to this self-study exam by circling the best answer for each question.
3. Complete the self-study exam registration form.
4. Fold and place this self-study examination page in an envelope.
5. Enclose a payment for processing fees of \$14.95 for CAAR Members, and \$24.95 for non-members, plus GST or HST.
6. Mail your self-study exam and payment to: **The CCA Self-Study Exam**

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### SELF-STUDY EXAM:

After reading the pre-approved self-study article, please answer this 10-question exam and return it to CAAR. An exam score of 70 per cent or higher will earn you one credit in Pest Management.

You can take this exam online! Go to **caar.org** and click on Training to access the online article and exam. Contact the CAAR office at 800-463-9323 or info@caar.org for your Member login if you don't have it already.

1. **Glyphosate can remain unbound in soils where the glyphosate binding sites on soil particles are occupied by what?**
  - A. Other crop protection products
  - B. Phosphorus
  - C. Nitrogen
  - D. Potassium
2. ***Rhizoctonia solani* is an important component of the seedling disease complex on what crop used in this experiment?**
  - A. Corn
  - B. Wheat
  - C. Canola
  - D. Soybean
3. **What cultivar of crop was used?**
  - A. 3465
  - B. 3440
  - C. 3435
  - D. 3444
4. **What pre-plant intervals were used for seeding in this experiment?**
  - A. 15 and 20 days
  - B. 14 and 33 days
  - C. 14 and 15 days
  - D. 15 and 33 days
5. **What does CFU stand for?**
  - A. Colony forming units
  - B. Cluster forming units
  - C. Canola failure units
  - D. Colony failure units
6. **Application of glyphosate increased what two factors relative to the non-sprayed control in both years?**
  - A. Seedling emergence and damping off
  - B. Seedling emergence and seed yield
  - C. Seed yield and damping off
  - D. Seed yield and plant height

7. Contrast analysis across inoculum concentrations and glyphosate treatments showed three significant results. Which of these was NOT significantly different?
- A. Seedling emergence
  - B. Damping-off
  - C. Plant biomass
  - D. Plant height
8. It has been suggested that when glyphosate acts on weeds and susceptible volunteer crop plants, the inherent defense responses of the affected plants against pathogens is compromised. What is the suggested result?
- A. Weakened plants exude biocontrol hormones
  - B. Soil microbes are reduced
  - C. Soil-borne pathogens grow rapidly
  - D. Plant leaf cuticle is reduced, increasing moisture loss
9. Seedling blight, as determined by seedling emergence and damping-off of seedlings, was much more severe on plants seeded \_\_\_\_\_ days after glyphosate application.
- A. 14
  - B. 15
  - C. 21
  - D. 33
10. Because it is impractical to delay seeding for an extended period under Canadian conditions, pre-plant applications of glyphosate should be accompanied by effective seed treatment fungicides and what else?
- A. Delayed harvest
  - B. Cover cropping
  - C. Crop rotation
  - D. Side-banded fertilizer

## SELF STUDY EXAM REGISTRATION FORM:

(Please note: You must have your CCA Certification number on the form in order to be eligible for the CEU.)

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I approve payment by credit card and certify that I alone completed this self-study course, recognizing that an ethics violation may revoke my CCA status.

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*This exam issued April 2017, expired April 2020*

## EXAM EVALUATION FORM

(PLEASE TAKE A MOMENT TO PROVIDE US WITH SOME FEEDBACK ON THIS EXAM):

Rating Scale: 1 = Poor 5 = Excellent

Information presented will be useful in my daily crop advising activities.      1    2    3    4    5

Information was organized and logical.      1    2    3    4    5

Graphics/Tables were appropriate and enhanced my learning.      1    2    3    4    5

This article addressed the stated competency area and performance objective(s).      1    2    3    4    5

Topics I would like to see addressed in future materials: \_\_\_\_\_