



AGENCY OF AGRICULTURE, FOOD & MARKETS

Water Quality Division  
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### Webinar Water Quality Educational Credit Request Form

*Instructions: Please complete for WQ Educational Credits. You may print and mail this form or complete electronically and email. If completing electronically, download and save a copy first, then type in the form, then save and attach to email. Alternatively, you may also print, write in the form, and then scan or take a photo and attach to email.*

#### CONTACT INFORMATION

Business/Farm Name: \_\_\_\_\_

Operation Type (check one): Farmer Custom Applicator Both

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Town: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

#### WEBINAR INFORMATION

**Webinar Title:** Nutrient Flows: pH, CEC, and Phosphorus (NMP Lesson 2)

**Course Description:** This recorded webinar presented by UVM Extension Northwest Crops and Soils Program presents an overview of the essential nutrients plants require and some soil processes that govern nutrient availability is given. This video focuses on pH, the cation exchange capacity (CEC), and phosphorus. Viewers are introduced to the phosphorus cycle and the Phosphorus Index (P-Index).

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**Link to Recorded Webinar:** <https://www.youtube.com/watch?v=vCyRetTN1F8>

See reverse to answer

**WEBINAR QUESTION FOR WATER QUALITY EDUCATIONAL CREDITS**

What was the most interesting thing you learned?

- a) Soil has a negative charge. The cation exchange capacity is the ability of the soil to hold on to plant nutrients with positive charges (cations like calcium, magnesium, ammonium (nitrogen), etc.). Soils with a higher clay content have more negative charge and thus have higher CEC than soils with higher sand content. This is why nitrogen and potassium leach more easily from sandy soils
- b) Soil may hold more nutrients than are available to the plants. This may be because the pH needs to be adjusted. For most plants, the optimal pH is above 6.0 which allows for maximum soil nutrient availability. Liming soil can increase pH and increase nutrient availability.
- c) Phosphorus (a negatively charged nutrient) in the soil can bind to aluminum, iron, and calcium (positively charged nutrients) and be unavailable to the plants.
- d) Soil phosphorus is not very mobile and does not easily move downward. Soil phosphorus is higher closer to the surface. Most phosphorus is in the top 6-8 inches of soil. One way to keep phosphorus from reaching surface water is to minimize erosion. This can be done with timely application of manure and fertilizer.
- e) The phosphorus index is a model used to predict the risk of sediment bound and dissolved phosphorus loss from each field. Among other things, it takes into account soil drainage, elevation, soil cover by crops, distance to surface water, soil test phosphorus levels, time of application, rate of application, annual predicted soil loss.
- f) Other (please type):

I certify by signing\* my name here, that I watched the recorded webinar.

Signature \_\_\_\_\_ Date \_\_\_\_\_

*\*If completing and submitting electronically a typed signature/name will be accepted.*

**Please submit this completed form to:**

**Vermont Agency of Agriculture, Food and Markets  
WQ Education Credits  
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**Please direct any questions to the Vermont Agency of Agriculture, Food & Markets  
Please call: (802) 828-2431 or Email: [AGR.WaterQuality@vermont.gov](mailto:AGR.WaterQuality@vermont.gov)**