

Nutrient Management Planning Handbook



University of Kentucky College of Agriculture
and
USDA – Natural Resources Conservation Service

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KENTUCKY NUTRIENT MANAGEMENT SPECIALIST CERTIFICATION

COURSE CURRICULUM (as of February 2002)

A Certified Nutrient Management Specialist is an individual who has completed all necessary training and has demonstrated an ability to develop a Nutrient Management plan. In Kentucky, a certified specialist may be an employee of NRCS, an employee of another federal or state agency or an approved third party vendor such as a private firm or individual. In order to become certified, individuals must complete the coursework and assignments as outlined in this curriculum. Although there is no time requirement, it is expected that the curriculum should be completed during a 3 to 6 month period depending upon course schedules and other issues encountered by the participants. NRCS and other agencies will maintain verification of course completion and certification registers for their employees and the Kentucky Certified Crop Advisor (CCA) Board will maintain this information for CCA's. As participants complete the curriculum, certificates will be furnished from NRCS in Kentucky.

UNIT 1 A. Kentucky Nutrient Management Course - Part 1

This course is offered online. It is designed to be one of the first courses that should be completed in the curriculum. The material consists of self paced modules with topical information pertaining to the basic science concerning nutrient management and environmental considerations. Registration, course material and completion verification can be accessed at: <http://www.uky.edu/Ag/AgPrograms/nmot/welcome.html>

UNIT 6 B. NRCS Conservation Planning Course 5 modules

This course is offered online. It is designed to be among one of the first courses that should be completed. The material consists of self paced modules with topical information pertaining to the basic science concerning natural resource conservation planning. Registration, course material and completion verification can be accessed at: <http://www.ftw.nrcs.usda.gov/start.htm>

UNIT 7 C. NRCS Course: "Ag. Waste Mgt. Systems - Primer"

This course is offered online. It is designed to be among one of the first courses that should be completed. The material consists of self paced modules with topical information pertaining to nutrient management with a primary focus on Agricultural Waste Management Systems. Registration, course material and completion verification can be accessed at:

http://www.nedc.nrcs.usda.gov/courses/ag_waste_primer.htm

UNIT 2 D. Kentucky Nutrient Management Course - Part 2

This one-day course is to be completed in the classroom. The material will focus on the NRCS Kentucky Nutrient Management Standard (590), University of Kentucky information and other state specific technical applications. During the training, an example Nutrient Management Plan will be reviewed. *Note: The Kentucky Nutrient Management Course - Part 1 should be completed in advance of attending the Part 2 session.*

Ur 7 2

E. Development of a Sample Nutrient Management Plan

During Part 2, participants will be given a case study from which to complete a Nutrient Management Plan as a homework assignment. This assignment will be reviewed by a NRCS committee.

UNIT 3

F. Kentucky Nutrient Management Course - Part 3

This one-day course is to be completed in the classroom and in the field. The material will focus on the NRCS Kentucky Nutrient Management Standard (590) and the Kentucky Phosphorus Index. During the training, an example Phosphorus Index calculation will be reviewed. *Note: The Kentucky Nutrient Management Course - Part 2 should be completed in advance of attending the Part 3 session*

Unit 3

G. Development of a Sample Nutrient Management Plan with/P-Index Calculation

During Part 3, participants will be given a case study from which to complete a Nutrient Management Plan and P-Index calculation as a homework assignment. This assignment will be reviewed by a NRCS committee.

UNIT 4

H. NRCS Revised Universal Soil Loss Equation (RUSLE)

This course is to be completed in the field and in the classroom. The material will focus on how soil erosion predictions are calculated. During the training, participants will be presented with an overview of the RUSLE science and equation. Participants will also work through sample calculations using the materials provided. This course will most likely be offered during the time scheduled for Kentucky Nutrient Management Course - Part 3.

UNITS 5

I. NRCS Introduction To Water Quality

This course is offered online. It may be completed at any time during the certification process. The material consists of self-paced modules with topical information pertaining to the basic science concerning natural resource conservation planning with an emphasis on Water Quality considerations. Registration, course material and completion verification can be accessed at: http://www.nedc.nrcs.usda.gov/courses/introduction_to_water_quality.htm

J. Certification Maintenance and Continuing Education

Following certification, continuing education will be necessary to stay tuned with changes in technology, updated standards, regulatory issues and other concerns. This will be accomplished by attending an annual one-day Nutrient Management refresher course that will be scheduled in conjunction with Certified Crop Advisor or other functions. This refresher course will be announced as schedules become arranged.

For further information contact: J. David Stipes, NRCS Agronomist, Curriculum Facilitator
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Lexington, Kentucky 40503-5479
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FAX (859) 224-7410
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USE THIS
AGENDA TO
ASSEMBLE PARTS 2-3

KENTUCKY NUTRIENT MANAGEMENT COURSE PART II – THE PLANNING PROCESS

University of Kentucky Research Education Center
Princeton, Kentucky

Presenters:

Frank Sikora, University of Kentucky Testing Coordinator
Henry Duncan, Water Quality Liaison, UK Coop Extension Service
Monroe Rasnake, University of Kentucky
Bill Thom, University of Kentucky
David Stipes, State Agronomist, Natural Resources Conservation Service

Facilitator:

Amanda Abnee, Extension Associate, UK Coop Extension Service

Note: This Course Is Part Of The Kentucky Nutrient Management Planning Certification Process

January 30, 2003 (3.5 NM CCA-CEU's Applied For)

- | | |
|----------|---|
| 12:30 pm | Registration |
| 1:00 pm | Welcome from Extension and NRCS
Henry Duncan, DOC and David Stipes, NRCS |
| 1:10 pm | NRCS 590 Standard – Policy on Use/Specialist Certification
David Stipes |
| 1:45 pm | Interface with Agriculture Water Quality Act
Amanda Abnee, UK and Henry Duncan |
| 2:00 pm | Kentucky 590 Phosphorus Threshold
Kentucky 590 Phosphorus Index BMPs
Frank Sikora, UK |
| 2:30 pm | Sample P-Index Calculation
Kentucky Nutrient Management Planning Certification Process
David Stipes |
| 3:00 pm | Break |
| 3:10 pm | Nutrient Management Planning
David Stipes, Monroe Rasnake, Bill Thom, UK and Frank Sikora
Basic Planning Concepts
Animal Manure Volume Calculations and Land Application
Short-term Planning: "Using Electronic Planning Tools"
Long-Term Planning: "Using Experience" |
| 4:00 pm | Participant Assignment
David Stipes and Other Instructors
Classroom Participation and Review of Sample Plan
Participants will be assigned a planning scenario for a beef and dairy operation. Each trainee (those desiring certification) will be required to submit a plan for each operation to NRCS for checking. |
| 5:00 pm | Adjourn (Individual Assistance Session)
Instructors will be available for further discussion about the participant exercise and demonstration of software. Those not interest in further explanation of the participant exercise are not required to stay for this <u>optional</u> session. |

**KENTUCKY NUTRIENT MANAGEMENT COURSE
PART III – ON-FARM PRACTICUM**

*University of Kentucky Research and Education Center
Princeton, Kentucky*

Presenters:

*Frank Sikora, University of Kentucky Testing Coordinator
Henry Duncan, Water Quality Liaison, UK Coop Extension Service
Monroe Rasnake, University of Kentucky
David Stipes, State Agronomist, Natural Resources Conservation Service
Peggy Jackson, Kentucky Division of Water*

Facilitator:

Amanda Abnee, Extension Associate, UK Coop Extension Service

***Note: This Course Is Part Of The Kentucky Nutrient Management Planning
Certification Process.***

January 31, 2003 (4 NM and .5 SW CCA-CEU's Applied For)

8:00 am – 9:00 am	Registration and Computer Entry of Previous Day Plans
9:00 am	Introduction and Instructions for Field Exercise
9:10 am	Travel to Field Sites - UK Research Farm
	Field Exercise: Kentucky Phosphorus Index <i>Participants will travel to each station in a group</i>
	Station 1. Residual Soil Test (P) Level - Frank Sikora
	Station 2. Impaired Watershed - Peggy Jackson Major Land Resource Area (MLRA) Hydrologic Soil Group (HSG)
	Station 3. Application Timing - Henry Duncan Application Method
	Station 4. Field Slope Percent - David Stipes Land Cover Percent
	Station 5. Downstream distance to a Spring, Stream, or Other Waterbody Vegetative Buffer Width - Monroe Rasnake
10:30 am	Visit field to gather information P-index - UK Farm F. Sikora, P. Jackson, H. Duncan, D. Stipes, M. Rasnake
11:30 am	Lunch on your own

12:30 pm

Practice Farm Nutrient Management Plan -
David Stipes/Monroe Rasnake
Instructors will distribute assignment and provide
Instructions.

Develop a Five-Year Nutrient Management Plan for Farm
As part of the plan, participants will:
Calculate P-Index for required fields
Calculate manure and nutrient production
Plan best system of manure utilization
Determine if off-farm movement of manure is needed
Discuss long-term implications regarding STP increases

Participants will be assigned a planning scenario for a
Poultry operation. Each trainee (those desiring
certification) will be required to submit a plan for the
operation to NRCS for checking.

2:00 pm

Revised Universal Soil Loss Equation (RUSLE) -
David Stipes

2:30 pm

Wrap-up and Evaluation - Henry Duncan
Instructors will be available for additional assistance.

Nutrient Management Planning Handbook

Developed by the

Nutrient Management Focus Group
of the
Environmental & Natural Resource Issues Task Force
University of Kentucky College of Agriculture

J. Henry Duncan, co-chair
Water Quality Liaison
UK College of Agriculture

Douglas H. Hines, co-chair
Resource Soil Scientist – Nutrient Management
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USDA-NRCS

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Extension Dairy Specialist
Animal Science Department
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Bracken County, Kentucky

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Executive Director
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Tony Pescatore
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Animal Science Department
UK College of Agriculture

GLM Chappell
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Director
KY Division of Conservation

Kara Colvin
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Boone County, Kentucky

Amanda Abnee
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Agriculture Programs Department
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Kentucky Nutrient Management Training Course

Presenters:

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Kentucky Nutrient Management Training

Presenters:

*Dr. Bill Thom, University of Kentucky, Dept. of Agronomy
Dr. Frank Sikora, University of Kentucky Soil Testing Coordinator
Henry Duncan, Water Quality Liaison, UK Coop Extension Service
Dr. Monroe Rasnake, University of Kentucky, Dept. of Agronomy
Joe Cain, Senior Agronomist, Southern States Cooperative, Inc.
Peggy Jackson, Kentucky Division of Water
Steve Patterson, Southern States Cooperative, Inc.*

Facilitator:

Amanda Abnee, Extension Associate, UK Coop Extension Service

Feb 3, 2004

- 8:00-10:00 am Basic Agronomics of Nutrient Management
Bill Thom, PhD
- 10:00-10:30am Break
- 10:30-12pm Introduction of Kentucky Nutrient Management Planning Part I Online Course
<http://www.uky.edu/Agriculture/AgPrograms/nmot/>
Amanda Abnee, MS
- Noon Lunch
- 1:00-1:15pm Welcome from Southern States and Extension
*Joe Cain, BS
Henry Duncan, EdS*
- 1:15-2:15pm NRCS 590 Standard – Policy on Use/Specialist Certification
Kentucky Nutrient Management Planning Certification Process
Joe Cain
- 2:15-3:15pm Interface with Agriculture Water Quality Act
Amanda Abnee and Henry Duncan
- CAFO Update
Peggy Jackson, BS
- 3:15-3:30pm Break
- 3:30-5pm Kentucky 590 Phosphorus Threshold
Kentucky 590 Phosphorus Index BMPs
Frank Sikora, PhD
- Sample P-Index Calculation
Monroe Rasnake, PhD
- Basic Nutrient Management Planning Concepts
Frank Sikora
- Review beef sample plan, assign poultry plan for homework
Henry Duncan and Monroe Rasnake
- 5pm Adjourn

Feb 4, 2003

8:00-10:00 am Review assigned poultry plan

Electronic Nutrient Management Planning Tools
Monroe Rasnake and Joe Cain

10:00-10:30am Break

10:30-12pm Using Electronic Tools to Complete Sample Plan

Noon Lunch

1pm Travel to Field Sites – UK Main Chance Research Farm

Field Exercise: Kentucky Phosphorus Index
Participants will travel to each station in a group

Station 1. Residual Soil Test (P) Level - Frank Sikora

Station 2. Impaired Watershed - Peggy Jackson
Major Land Resource Area (MLRA)
Hydrologic Soil Group (HSG)

Station 3. Application Timing - Henry Duncan
Application Method

Station 4. Field Slope Percent – Joe Cain
Land Cover Percent

Station 5. Downstream distance to a Spring, Stream, or Other Waterbody
Vegetative Buffer Width - Monroe Rasnake

3:00-3:30pm Break

3:30-5pm Visit field to gather information P-index - UK Farm
Monroe Rasnake, Joe Cain, Frank Sikora

5pm Adjourn

Feb 5, 2003

8am Practice Farm Nutrient Management Plan
All presenters

Develop a Five-Year Nutrient Management Plan for Farm for a Dairy Operation
As part of the plan, participants will:

- *Calculate P-Index for required fields*
- *Calculate manure and nutrient production*
- *Plan best system of manure utilization*
- *Determine if off-farm movement of manure is needed*
- *Discuss long-term implications regarding STP increases*

Noon Lunch

- 1:00pm Strategic planning for nutrient management
Steve Patterson, Southern States Cooperative, Inc.
- 2:00-3:00 pm Pests associated with manure management
Lee Townsend, UK Cooperative Extension Service
- 3:00-3:30 pm Additional resources, plan completion – Monroe Rasnake
Groups present plan results
- 3:30 pm Hand in plans– Henry Duncan
Evaluation
- 5:00 pm Adjourn