

Nutrient BMP Endorsement Underwriting Guide

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1. Purpose and Objective

The Nutrient BMP Endorsement for MPCl Policy and Nutrient BMP Endorsement for CRC Policy are supplemental endorsements and attach to the Multiple Peril Crop Insurance (MPCl) or Crop Revenue Coverage (CRC) Insurance Policies, respectively. These endorsements are pilot products under section 508(h) of the Federal Crop Insurance Act and approved for four pilot states (Iowa, Minnesota, Pennsylvania and Wisconsin) for the 2003 growing season.

This guide provides supplementary instructions for establishing endorsement coverage in accordance with the endorsement provisions and the *Nutrient BMP Endorsement Loss Adjustment Handbook*.

2. Definitions

Application for Endorsement – The form used to apply for insurance coverage under the Nutrient BMP Endorsement.

Approved Nitrogen BMP – A management practice in which nitrogen is applied in strict conformity with the nutrient BMP plan and the agreement between the insured and insurer based on a documented nitrogen management recommendation by a crop consultant. Only an approved nitrogen BMP that meets the standards set forth in Schedule 2 of the endorsement and is recognized by CSREES, NRCS or a similar entity, approved by us, as compatible with the agronomic and weather conditions in the applicable state and county is insurable.

Approved Nitrogen and Phosphorus BMP – A management practice in which nitrogen and phosphorus are applied in strict conformity with the nutrient BMP plan and the agreement between the insured and insurer based on a documented nitrogen and phosphorus management recommendation by a crop consultant. Only an approved nitrogen and phosphorus BMP that meets the standards set forth in Schedules 1 and 2 of the endorsement and is recognized by CSREES, NRCS or a similar entity, approved by us, as compatible with the agronomic and weather conditions in the applicable state and county is insurable.

Approved Nutrient BMP – A management practice in which nutrients are applied in strict conformity with the nutrient BMP plan and the agreement between the insured and insurer based on a documented nutrient management recommendation by a crop consultant. The approved nutrient BMP will be one recommended by CSREES, NRCS or a similar entity, approved by us, as compatible with the agronomic and weather conditions in the applicable state and county.

Approved Phosphorus BMP – A management practice in which phosphorus is applied in strict conformity with the nutrient BMP plan and the agreement between the insured and insurer based on a documented phosphorus management recommendation by a crop consultant. Only an approved phosphorus BMP that meets the standards set forth in Schedule 1 of the endorsement and is recognized by CSREES, NRCS or a similar entity, approved by us, as compatible with the agronomic and weather conditions in the applicable state and county is insurable.

ARCPACS - The federation of certifying boards in agriculture, biology, earth and environmental sciences. This certification program identifies individuals who have met and maintained standards in education, knowledge and experience in the following areas: agronomy, crops, soils, horticulture, plant pathology and weed science.

Best Management Practice (BMP) – The management of inputs to provide for economic and agronomic efficiency in production agriculture.

BMP Strips – The strips directly adjacent to and on either side of the check strip, with each strip equal in width and length to the check strip.

Check Strip – An area of production fertilized at a rate greater than the BMP rate that is to be representative of the yields of the management unit where it is located. The crop consultant will determine the check strip location.

Check Strip Production - The appraised yield of the crop in the check strip.

CSREES – Cooperative State Research, Education and Extension Service, an agency within USDA.

Corn – A corn crop grown for harvest as grain.

Crop – Crop grown on insurable acres contained in the endorsement provisions.

Crop Consultant - An individual, approved by the insurer, who has no financial or personal interests in the insured's farming operation. This person may not be related to the insured or living in the same household with the insured. The person must have received professional certification and continuing education from ARCPACS, National Alliance of Independent Crop Consultants or American Society of Agronomy in a discipline applicable to the area of crop science, or is an individual approved by a governmental entity as qualified to establish a nutrient management plan.

Crop Revenue Coverage (CRC) - The program of federally subsidized and reinsured crop insurance that guarantees yields and revenues against specified causes of loss.

Deductible – The amount of loss not covered by the endorsement, which is 5 (five) percent.

Endorsement – This Nutrient BMP Endorsement, which is a written modification of the MPCl and CRC insurance policies issued by the insurer that becomes a part of the policy.

Indemnity – Compensation for insured losses incurred by the insured.

Loss – The reduction in quantity of insured property directly resulting from an insured peril.

Management Unit - The acreage to which an approved nutrient BMP is applied. Each management unit will contain only one check strip. A management unit will be:

(1) For endorsements attached to MPCl policies, no larger than a basic unit as defined in section 1 of the MPCl Basic Provisions if the insured has chosen the basic unit structure for the insured acres; or, For endorsements attached to CRC policies, no larger than a basic unit as defined in section 2 (a) of the CRC Basic Provisions if the insured has chosen the basic unit structure for the insured acres.

(2) For endorsements attached to MPCl policies, no larger than an optional unit as defined in section 34(b) and (c) of the MPCl Basic Provisions if the insured has divided the insured acres into optional units; or, For endorsements attached to CRC policies, no larger than an optional unit as defined in section 2(b) of the CRC Basic Provisions if the insured has divided the insured acres into optional units.

(3) A portion of an optional or basic unit that is entirely within the boundaries of the optional or basic unit.

(4) The insured must meet the following:

a. The insured must plant the crop in a manner that results in a clear and discernible break in the planting pattern at the boundaries of each management unit; and,

b. All management units the insured selects for the crop year are identified on the acreage report for that crop year.

c. The insured must have records that are acceptable to the insurer of planted acreage for each management unit.

Each management unit must be listed on a support line of the Application for Endorsement and Summary of Coverage.

Manure Testing – A documented university or extension-service-recommended method of testing manure for nutrient content in the state where the insured acreage is located, and performed by a competent testing laboratory certified by the Iowa Department of Agriculture and Land Stewardship or the Minnesota Department of Agriculture, or operated by the Penn State University or the University of Wisconsin. Manure testing may be used to determine the level of available nutrients applied to the insured acreage when determining the nutrient BMP plan.

Multiple Peril Crop Insurance (MPCl) – The program of federally subsidized and reinsured crop insurance that guarantees yields against specified causes of loss.

NRCS – Natural Resources Conservation Service, an agency within USDA.

Nitrogen – An element necessary for crop growth, generally referred to as N, that can be available to the crop from inorganic and organic sources.

Nutrient – An element essential for plant growth that can be applied to the soil in both organic and inorganic forms.

Nutrient BMP Plan – A document, prepared in cooperation with a crop consultant that describes the amount and manner in which nutrients will be applied to the insured acres. Only approved phosphorus and/or nitrogen BMPs are insurable (see Schedules 1 and 2 of the Nutrient BMP Endorsement to the MPCl and CRC policies).

Nutrient BMP Production – The appraised yield of the crop in the BMP strips.

Phosphorus – An element necessary for crop growth, generally referred to as P2O5, that can be available to the crop from synthetic and organic sources.

Phosphorus Soil Test – A soil test to determine the availability of phosphorus in the soil. The proper phosphorus soil test will be one recommended by CSREES, NRCS or a similar entity, approved by us, as compatible with the agronomic and weather conditions in the state and county (see Endorsement Schedule 1) and performed by a competent soil testing laboratory certified by the Iowa Department of Agriculture and Land Stewardship or the Minnesota Department of Agriculture, or operated by the Penn State University or the University of Wisconsin.

Price Election – The reasonable expectation of the per unit value of the crop at harvest indicated on the Application for Endorsement and Summary of Coverage. This shall be 100% of the FCIC-set price for the MPC1 APH yield policy.

Sales Closing Date – A date contained in the special provisions by which an application must be filed. The last date by which you may change your crop insurance coverage for a crop year.

Summary of Coverage – The list of crops, locations, premiums and amount of insurance for the insured has made an Application for Endorsement.

3. Background Information

The price of corn in real terms has been steadily declining for many years. Thus, farmers must lower operating costs wherever possible. One way to lower costs is to reduce the cost of inputs such as fertilizer and herbicides. A recent survey of 1,928 farms in Wisconsin found that two-out-of-three farmers apply excess nitrogen, while four-out-of-five apply excess phosphorus for corn production. The fear of lower yields, if farmers reduce fertilization rates to recommended levels, stops them from cutting inputs and costs. This endorsement will permit farmers to lower their operating costs by avoiding the cost of unneeded fertilizer.

A. BMPs Benefit Farmers

To help farmers lower their operating costs, land grant university experts have developed input management systems called “Best Management Practices” (BMPs) designed to maximize net returns to farmers. The nutrient BMP system recommends the level of fertilizer that a farmer needs to apply. By applying just the amount that the crop needs, and no more, the BMP maximizes net returns. Scientists develop BMP recommendations by applying different rates of fertilizer to adjacent strips. The yields for strips with different fertilization levels are used to ascertain at what point the additional fertilizer does not produce additional net returns. These “curves” have been developed at every major land grant university in the cornbelt. BMPs are accepted good farming practices, developed by land grant experts and widely recommended by crop consultants, extension and USDA Natural Resource Conservation Service (NRCS) experts. They are not experimental. Increased adoption of BMPs would also reduce off-farm pollution from fertilizer, which is a major public concern for drinking water supplies and surface water bodies.

B. Risk Prevents BMP Adoption

In spite of the potential for BMPs to improve farm income, BMPs are not widely adopted. For instance, experts estimate that 50 percent of the cornbelt receives 25 percent more nitrogen than is needed. Why do farmers apply more inputs than they need? Farmer surveys and expert analyses have found that a major reason is risk. Farmers know that if their crops do not have enough nutrients, they will lose yield. Therefore they apply more than their crops need just to be sure that their crops will have enough. As the National Academy of Sciences has stated:

Producers are often thought to apply nitrogen at rates greater than those required for optimal crop growth as insurance against making a wrong decision that leads to lower yields. (Emphasis added.)

A survey by the USDA’s Economic Research Service confirms this conclusion. It found that risk is one of the two major reasons that farmers do not adopt BMPs – even when they understand the BMP and think it will save them money.

C. Nutrient BMP Endorsement Addresses BMP Risks

The Nutrient BMP Insurance Endorsement protects a farmer from the risk that a BMP fertilizer recommendation will fail. The endorsement works as follows. The farmer and a crop consultant will use the BMP system recommended for the region (e.g., state extension recommendations) to determine how much fertilizer the farmer needs to apply. For example, if the recommended BMP rate is 1.2 pounds of nitrogen per bushel of expected yield and the expected yield is 100 bushels, the BMP recommendation would be 120 pounds of nitrogen. On the field as a whole, the farmer will apply this recommended rate of fertilizer – 120 pounds of nitrogen. The portion of the field on

which the farmer follows the BMP recommendation is called the nutrient BMP production. In addition, the crop consultant will establish a check strip in the farmer's insured management unit. On the check strip, a higher rate of fertilizer will be applied, a rate the farmer is confident will supply enough plant nutrition – perhaps 160 pounds of nitrogen in this example. If an insured thinks the yield on the nutrient BMP production is low because of insufficient fertilizer, he or she notifies the insurance company before harvesting the crop. The adjuster compares the check strip yield against the yield where the farmer followed the BMP. If the difference in yield is greater than the deductible (5 percent), the farmer receives an indemnity. Except for nitrogen and/or phosphorus fertilization, the farmer must use the same farming practices on both the check strip and the nutrient BMP production. The weather conditions for the nutrient BMP production and the check strip are the same. The only variable is fertilization levels.

4. Underwriting Requirements

In addition to general underwriting requirements, the endorsement requires a nutrient management plan and placement of a check strip and adjacent BMP strips in the insured management unit. Participation of a crop consultant, approved by the insurer and meeting specific certification requirements, is required to complete the plan and locate the strips. Additional certifications not specified in the endorsement provisions may be approved by the insurer. The crop consultant preparing the nutrient management plan may be the same or a different individual than the crop consultant who establishes the check strip.

A. General Underwriting Requirements

- (1) The Nutrient BMP Endorsement is available as endorsements to Multi-Peril Crop Insurance (MPCI) and Crop Revenue Coverage (CRC) policies. The insured must purchase an MPCI Coarse Grains Crop Policy or CRC Insurance Policy to be eligible for the endorsements.
- (2) There are separate endorsement provisions for each underlying policy: Nutrient BMP Endorsement for MPCI Policy and Nutrient BMP Endorsement for CRC Policy. The insured must purchase the endorsement appropriate to the underlying MPCI or CRC coverage.
- (3) The endorsements are available for crops in those counties in the states of Iowa, Minnesota, Pennsylvania and Wisconsin for which MPCI and CRC actuarial documents provide a premium rate.
- (4) The coverage offered under this endorsement is in addition to any coverage under the MPCI or CRC policies and does not affect any terms or conditions of the underlying policy, including the manner in which an indemnity is paid.
- (5) The Nutrient BMP Endorsement is a continuous endorsement and provides coverage for the succeeding crop year unless cancelled by a time specified in the underlying policy provisions.
- (6) All fields and portions of fields in the endorsement management unit must have the same tillage practices, variety, and nutrient and pest management practices in the current (insurance) year. If any field or field portion varies in these characteristics, it must be placed in a separate endorsement management unit.
- (7) To be eligible for coverage under this endorsement, the insured must submit a completed Application for Endorsement by the sales closing date for the underlying policy.
- (8) A separate annual acreage report must be submitted for the endorsement on or before the acreage reporting date contained in the special provisions of the underlying MPCI or CRC policy. This report must meet the specifications in the endorsement provisions.
- (9) Additional eligibility requirements are included in the endorsement provisions.

B. Underwriting Requirements for the Nutrient BMP Plan

- (1) The insured must complete a nutrient BMP plan in cooperation with a crop consultant approved by the insurer. A nutrient BMP plan is recommended by state agency and extension for any farmer who applies fertilizer, and is required by some states and regions. This plan must be available for inspection in the event of an audit. A summary of the plan must be reported on the Application for Endorsement.
- (2) The applicant must choose one of three options for coverage in accordance with the nutrient BMP to be used for each management unit to be insured:
 - Option A: Phosphorus BMP for Corn
 - Option B: Nitrogen BMP for Corn
 - Option C: Nitrogen and Phosphorus BMP for Corn

Option A provides coverage for insufficiency of phosphorus only; Option B provides coverage for insufficiency of nitrogen only; Option C provides coverage for insufficiency of both nutrients. For example, if the field(s) in the management unit test low for phosphorus, the phosphorus BMP would not be appropriate for that unit and the applicant would choose Option B.

(3) A phosphorus soil test must be performed for the insured unit and test results must indicate high or very high soil phosphorus levels for Option A or C to be selected.

(4) The nutrient BMP plan must address the option selected, e.g., nitrogen requirements and recommendations for option B; phosphorus requirements and recommendations for option A; and both for option C.

(5) The nutrient BMP plan must conform to standards included in Schedule 1 (for phosphorus) and/or Schedule 2 (for nitrogen) in the endorsement provisions.

(6) The insured must make the nutrient BMP plan available for insurer inspection and verification upon request.

C. Underwriting Requirement for Establishment of the Check Strip by a Crop Consultant.

(1) There must be one check strip (and two adjacent BMP strips) established in each insured management unit. In addition to the restrictions on size of the management unit included in the endorsement provisions, the unit's size will be limited practically by the requirement that each field or field portion have the same management practices (e.g., hybrids, tillage system) and nutrient management practices (e.g., manure applications). Any variance in the characteristics will require that the field or field portion be placed in a separate management unit.

(2) The check strip must be between 40 and 60 feet wide and run the length of the management unit excluding any endrows. The BMP strips must be immediately adjacent to and on either side of the check strip, and be equal in length and width to the check strip.

(3) The strips must be established by a crop consultant approved by the insurer using the following procedures:

(a) The crop consultant will confirm with the farmer what fields will be insured.

(b) The crop consultant will use appropriate tools (aerial maps, soil survey maps, personal observation, soil tests, drainage maps, etc.) to assess the physical characteristics of the management unit to determine the productive capabilities of the insured acres.

(c) After assessing the management unit, the crop consultant will determine the approximate location of the check strip and adjacent BMP strips on a map. The site of the check strip and adjacent strips shall be located in a uniform portion of the management unit. If possible, the consultant shall avoid areas that have variable soil types, slopes, irregular boundaries, variable fertility and/or tile lines running parallel to the row. If it is not possible to avoid non-uniform areas, the following steps shall be taken to mitigate the effects of non-uniformity:

(i) If there is a slope in the field or a rocky area or any other feature that breaks up the uniformity of the management unit, locate the strips so they run across the nonuniformity such that the check strip and adjacent BMP strips are affected equally by it.

(ii) If the management unit has a small outcropping or a depression, avoid putting these in the check strip altogether. Locate the check strip on one side or the other of these features.

(iii) If the management unit has two or more soil types, arrange the strips at right angles to the different soil types where possible. Also, make sure that the various soil types affect each of the strips equally.

(d) The crop consultant will then travel to the location of the insured acres and identify the actual physical location of the check strip with Global Positioning System (GPS) coordinates and/or a measurement from an identifiable landmark (field corner, boundary marker, etc.). If there are conditions existing that would affect the placement of the check strip, adjustments shall be made at this time.

(e) The consultant will mark the location of the check strip for the insured with flags or other applicable markers.

(f) Information concerning the location of the check strip will be submitted to the insurer as part of the Nutrient BMP Endorsement Acreage Report.

(4) The location of check strip must be submitted to the insurer before the Nutrient BMP coverage can begin.

(5) If the insured acres are in contour strips that are not wide enough to contain both a check strip and two adjacent BMP strips, the crop consultant may select one strip that best represents the productive capabilities of the insured acres and is appropriate for use as a check strip. That contour strip will then be split in half and the approved nutrient BMP rate of fertilizer will be applied on one half of the contour strip to serve as the BMP strip, and the other half will serve as the check strip and be fertilized at a rate greater than the approved nutrient BMP rate. Alternatively, the crop consultant may place the check strip in one contour strip, and the BMP strips in immediately adjacent contour strips, provided the three contour strips are reasonably uniform and representative of the balance of the insured acres.

5. Procedures for Accepting the Application

The following information is required before the Application for Insurance will be accepted.

- (1) The Application for Insurance must be complete.
- (2) The information provided must conform to the underwriting requirements.

6. Rules for Determining Program Eligibility

Any producer eligible for MPCl or CRC coverage is eligible for Nutrient BMP coverage subject to the additional items below:

1. The crop must be eligible for Nutrient BMP coverage as determined by the Nutrient BMP endorsement provisions.
2. The insured crop must be in states included in the pilot program: Iowa, Minnesota, Pennsylvania or Wisconsin.

7. Inception of Insurance

Coverage begins on each management unit at the later of:

- (1) The date the Application for Endorsement is approved by the insurer, signified by the date the insurer issues the Summary of Coverage to the insured or on the inception date shown on the Summary of Coverage, whichever is later;
- (2) The date the check strip is established;
- (3) The date the insured crop is planted;
- (4) The calendar date contained in the (MPCl or CRC) crop provisions for the beginning of the insurance period.

8. Cancellation of Exceptions

Any exceptions made to the provisions of the Nutrient BMP Underwriting Guide will expire on December 10 of the crop year. Any exceptions to these provisions must be secured in writing from the insurer.

9. Application of Administrative Fees

The administrative fees required by law are included in the policy.

10. Deductible

This endorsement includes a five percent deductible.

11. Description of Service Options

The applicant must choose between two service options:

A. Full Service Option

- (1) Minimum number of insured acres -- 100 acres
 - (a) One check strip for each unit (basic or optional).
 - (b) Insurer arranges for strip establishment.
- (2) Premium equals base premium plus \$3.25 per acre.
- (3) The insured may receive an adjustment fee credit or refund of \$2 per acre for management units for which he does not request an adjustment.

B. Custom Option

- (1) No minimum size.
- (2) The applicant may choose one of two options for check strip establishment.
 - (a) As a part of the endorsement fees, the applicant will pay a \$1.25 per insured acre fee for check strip establishment or a minimum charge of \$125 for the first check strip and \$50 for each additional check strip for check strip establishment, whichever is greater; or,

(b) The applicant arranges for check strip establishment at his own expense using a consultant approved by the insurer. The check strip(s) must meet underwriting standards (described above).

(3) Premium is base premium plus:

(a) \$2 per acre adjustment fee or a minimum charge of \$115 for the first check strip adjustment and \$50 for each additional check strip, whichever is greater.

(4) The insured may receive an adjustment fee credit or refund of \$2 per acre for management units

for which he does not request an adjustment.

12. Minimum Acreage

Minimum acreage for the Full Service Option is 100 acres. There is no minimum acreage for the Custom Service Option.

13. Tax Identification Number

The applicant is required to provide to the insurer his or her social security number (SSN) or employee identification number (EIN) if applicable and the applicant's spouse's SSN if applicable.

The applicant is also required to provide an SSN or EIN for each person or entity with 10 percent or more interest in the insurance entity.

14. Amount of Insurance Calculations

(a) The amount of insurance per management unit is calculated as follows:

(1) Multiply 1.35 by the approved yield;

(2) Multiply the result of paragraph (1) by the coverage level

(3) Multiply the result of paragraph (2) by the price election;

(4) Multiply the result of paragraph (3) by the insured number of acres in the management unit;

(5) Multiply the result of paragraph (4) by the insured's share.

Amount of Insurance Example. You insured 80 acres of corn that has an approved yield of 120 bushels per acre, a 100 percent crop share, and a price election of \$2.20 per bushel. The amount of insurance is calculated in the following manner:

$1.35 \times \text{approved yield} \times \text{coverage level} \times \text{price election} \times \text{number of insured acres} \times \text{crop share} =$
amount of insurance $1.35 \times 120 \times 0.95 \times \$2.20 \times 80 \times 100\% = \$27,086.40$

15. Premium Rate

The premium rate is given in the endorsement actuarial documents.

16. Nutrient BMP Endorsement Premium Calculation Worksheet

A) Approved Yield

B) Crop Share

C) MPCl Price Election

(100% of MPCl set price)

D) BMP Insured Acres

E) BMP Premium Rate per acre

F) Producer Subsidy Percentage (0.38)

G) Deductible (0.05)

H) Coverage Level (0.95)

Part 1 – Amount of Insurance ($1.35 \times A \times H \times B \times C \times D$)

Part 2 – Total Premium ($B \times C \times D \times E$)

Part 3 – Subsidy ($F \times \text{Part 2}$)

Part 4 – Producer Premium ($\text{Part 2} - \text{Part 3}$)

Part 5 – Total Additional Charges – see Options next page

(Option 1 = J; or, Option 2 = Q)

Part 6 – Total Cost to Producer ($\text{Part 4} + \text{Part 5}$)

THIS WORKSHEET IS INCLUDED TO ASSIST IN ESTIMATING APPLICANT PREMIUM ONLY.

17. Additional Charges Worksheet

Option 1: Full Service Option: Minimum 100 acres

I. Additional Charge (\$3.25 per acre)

J. Total Additional Charges for Option 1 (I x D)

- OR -

Option 2: Custom Option: No minimum acreage

Check Strip Establishment Charge

If producer chooses to have insurer establish check strips please calculate items K and L. If not, please enter -0- for item L and proceed to the Adjustment Charge section (items N – P).

K. Per acre charge (\$1.25 x D)

- OR -

L. Set Fee (\$125 for first check strip, \$50 each additional)

M. Enter the larger amount of item K and item L or enter -0- if producer chooses not to have insurer establish check strips Adjustment Charge

N. Per acre charge (\$2.00 x D)

- OR -

O. Set Fee

(\$115 for one adjustment, \$50 each additional)

P. Enter the larger amount of item N and item O Total Additional Charges for Option 2

Q. Total for Option 2 (M + P)

THIS WORKSHEET IS INCLUDED TO ASSIST IN ESTIMATING APPLICANT ADDITIONAL CHARGES ONLY.