**Basic Requirements for a Cranberry Nutrient Management Plan**

General Information:

1) If you manage more than 10 acres, you need to write a basic plan *prior to 2016 applications* and keep records of how you implemented that plan.

*Any person who applies or authorizes any person by way of service contract or other arrangement to apply plant nutrients to ten or more acres of agricultural land or an agricultural operation shall also:*

*(a) develop a nutrient management plan prior to application, in accordance with the UMass Guidelines and requirements set forth in 330 CMR 31.04; and*

*(b) apply Plant Nutrients in accordance with the Plan for the land application site.*

2) Nutrient use should be based on UMass Extension recommendations

* for cranberry this is the Chart Book
* From the regs: choice of rates based on plant needs, soil fertility, and availability of nutrients

3) Application setbacks from water - THIS DOES NOT apply to crop growing systems that operationally require proximity to surface water (cranberry) provided applications are done using UMass guidelines (Chart Book and Nutrient Management BMP)

4) Do not apply to surface water or soils that are frequently flooded *when flooding is expected* -- this language is still under discussion between CCCGA and MDAR. At this point, interpret as do not apply if heavy rain expected or you are planning to flood the bog soon thereafter or the soil is saturated - lower ditch levels prior.

5) There are references to a Phosphorus runoff index -- this is NOT pertinent to cranberry soils (as per NRCS).

6) Soil and tissue test results -- for cranberry tissue is preferred. Recommended interval is 3-4 years. If you have multiple management units, you may want to not sample all in one year but in a 3 or 4 year rotation doing 1/3 or 1/4 each year. [See the sample language in the draft plan template.]

Basic plan:

* Basic info about you, location of bog, date of plan, period of time covered, contact info for person responsible for the plan.
* Map or aerial photo identifying fields and acreage for each management unit and nearby water resources.
* Crop - cranberry
* Nitrogen or Phosphorus based plan -- for cranberry *nitrogen* with some considerations for phosphorus
* Determination of nutrient needs (*target application rates*):
	+ Crop nutrient needs (see tables in the Chart Book - these provide ranges by cultivar that are then adjusted based on factors like previous response, yield potential changes, observation, etc.) - removal rates are considered in the tables as are test results.
	+ Soil or ***plant tissue*** test results and how they are used
	+ Amount applied in all fertilizer or amendments
	+ Nutrient credits from previous crop - we do not rotate crops but could consider carryover in the plant instead, especially if the previous crop was low.
	+ Environmental factors (for example, soil temperature)
	+ UMass guidelines (the Chart Book)
	+ Best info available when the plan is prepared
* List of nutrient sources, timing, and amount to be applied to each management unit and method of application. [See calculation sheet and Excel calculator tool.]
* Information on how you will implement the plan and keep records

Record keeping:

* Date and method (chemigation, ground rig, aerial, etc.) of application and name of applicator
* Location and size of treated area; crop and expected yield
* Soil test results (for cranberry **tissue** results are preferred) and target application rate
* Amount, analysis (numbers on the bag), and sources (liquid, granular, slow release, organic, manure, etc.) of nutrients applied
* Total amount used
* Other items required by your plan (e.g., observation of plant density, color, length)

Updates, revisions, etc.:

* Review your plan annually and adjust/revise management unit plans as needed
* Update every 3 years or sooner if:
	+ Test results indicate a need to change
	+ There is a 10% or greater change in acreage managed

Testing requirements [see the sample language in the draft plan template]:

* Up to 20 similar acres (cultivar, fertilizer applications, soil type)
* Soil test every 3 years using a UMass recommended testing method and testing for P, K, pH, organic matter.(but cranberry guidelines differ and if there is UMass or industry standards (published) this can be substituted).
	+ Cranberry guideline is 3-5 years for soil, 1-4 years for tissue
	+ UMass recommended method for most crops is the Morgan test, for cranberry this is not necessary. Either Morgan or Bray for soil P is acceptable.
	+ P, K, pH, organic matter: these are similar to what we would recommend in a cranberry soil test.
* Tissue test by UMass guidelines

Note: Regulation references that growers should follow UMass guidelines. Thus, the Chart Book is our standard and testing can be on the schedule recommended in the Chart Book.