Part 1: Nutrient Management for Fruit Trees

Instructions: For each category listed on the left, that is appropriate for your farm, indicate the rank that best describes the conditions on your farm or in a specific block (three spaces are provided for evaluating different farms or blocks).

	LOW RISK (3)	MODERATE RISK (2)	HIGH RISK (1)	YOUR RANK		
1. NITROGEN (N) MANAGEMENT PRACTICES						
N fertilizer rates	N rates are based on tree vigor, terminal growth and pruning practices and do not exceed Michigan State University (MSU) recommendations.	N rates are based on previous practices that match inputs with plant needs but sometimes exceed MSU recommendations.	N rates are not based on N monitoring or plant assessment and often exceed MSU recommendations.	____	____	____
Time and placement of N	All N is applied in the spring through early summer, depending on the specific needs of the fruit crop. N is applied in split applications or metered through the irrigation system (if used). N is always banded, where appropriate.	Most N is applied in the spring through the early summer, depending on the specific needs of the fruit crop. Most N is applied early, but less than 30% may be applied later as a split application or fall application for next year. Fertigation is sometimes used. N is usually banded.	More than 30% of N is applied in the fall; OR, N is broadcast where it would be appropriate to band.	____	____	____
Fertilizer applicator calibration	Fertilizer applicators are adjusted and calibrated at least once a year.	Fertilizer applicators are adjusted and calibrated every 2 to 5 years.	Fertilizer applicators have never been calibrated.	____	____	____
2. SPECIAL MANAGEMENT PRACTICES ON SANDY SOILS AND OTHER GROUNDWATER-SENSITIVE AREAS						
Split applications of N fertilizer	Split applications of N are always used. Metered fertigation is used, if available.	Split applications and metered fertigation of N are sometimes used.	Split applications and metered fertigation of N are never used.	____	____	____

	LOW RISK (3)	MODERATE RISK (2)	HIGH RISK (1)	YOUR RANK		
Cover crops	Cover or green manure crops are always used preplant; sod (or other cover crop) row middles are always used as a part of the orchard floor management plan to minimize fertilizer leaching, runoff and erosion by wind. The orchard is not cultivated post-plant, except to establish row middles in year 1. Cover crops or natural filter strips are used at field boundaries (especially near waterways) to minimize fertilizer runoff potential.	Cover or green manure crops are not used preplant. The orchard is cultivated during the early years. Sod row middles are established late. Cover crops or natural filter strips are seldom used at field boundaries (especially near waterways) to minimize fertilizer runoff potential.	Cover or green manure crops are never used on the farm. The orchard is cultivated, sod row middles are not used. Natural filter strips are never used at field boundaries (especially near waterways) to minimize fertilizer runoff potential.	____	____	____
3. SOIL NITRATE AND PLANT TISSUE TESTING						
Plant analysis	Plant tissue analysis is always used to confirm that an appropriate amount of N has been applied.	Plant tissue analysis is used only when deficiency symptoms appear.	Plant analysis is not used.	____	____	____
4. IRRIGATION SCHEDULING PRACTICES - *If you do not irrigate, skip to the next section.*						
Scheduling practices	Irrigation water scheduling is based on the soil water holding capacity and the estimated daily crop water use.	Irrigation water scheduling is based on either observed soil moisture content or estimates of daily crop water use.	Irrigation scheduling is based on so much water per week if it doesn't rain.	____	____	____
Water testing	Irrigation water annually tested for nitrates. Nitrate values are less than 3 ppm.	Irrigation water occasionally tested for nitrates. Nitrate values are between 5 and 10 ppm.	No irrigation water tests, or nitrate values are consistently above 10 ppm.	____	____	____
5. RECORD KEEPING						
Soil and tissue tests	All records of nutrient tests are kept.	Some records of nutrient tests are kept.	No records of nutrient tests are kept.	____	____	____

	LOW RISK (3)	MODERATE RISK (2)	HIGH RISK (1)	YOUR RANK		
N applied	Complete records are kept on fertilizer materials and application rates for each orchard.	Some records are kept on fertilizer materials and application rates for each orchard.	No records are kept of fertilizer materials and application rates for each orchard.	____	____	____
6. SOIL, FERTILIZER AND SITE MANAGEMENT						
Soil organic matter	Soil is high in organic matter (4 to 8% in fine-textured soils, > 2% in coarse-textured soils).	Soil organic matter is at low to moderate levels (2 to 4% in fine-textured soils, 1 to 2% in coarse-textured soils).	Topsoil has little or no organic matter.	____	____	____
Soil pH	Soil pH is balanced for the fruit crop being grown and adjusted as necessary.	Soil pH is slightly high or low for the fruit crop being grown.	Soil pH values are excessively high or low for the fruit crop being grown.	____	____	____
Separation distance of fertilizer application from water sources	Fertilizer is applied more than 30 feet from an open water source or tile drain inlet and more than 200 feet from a well.	Fertilizer is applied less than 30 feet from an open water source, or tile drain inlet; OR, less than 150 feet from a well.	Fertilizer is applied adjacent to or over the top of a water source, tile drain inlet or well.	____	____	____
Soil characteristics, field conditions (e.g., soil moisture) and fertilizer applications	Soil characteristics and field conditions are assessed when deciding fertilizer application practices and site-specific or variable-rate technology is used.	Whole field soil conditions are assessed when deciding fertilizer application rates.	Fertilizers are applied at high rates regardless of soil characteristics, soil conditions or relative plant growth.	____	____	____
7. PHOSPHORUS MANAGEMENT PRACTICES						
Phosphorus (P) fertilizer	P applications are based on tissue and/or soil tests. Rates do not exceed MSU recommendations.	P applications are made every 3 to 5 years without laboratory tests indicating a need.	P applications are made every 1 to 2 year(s) without laboratory tests indicating a need.	____	____	____