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Water Quality and Air Quality Enhancement Activity – *WQL21 –Integrated Pest Management for Organic Farming*

New Jersey Addendum

Enhancement Description
Managing pests on an organic farm, including farms transitioning to organic, with an Integrated Pest Management (IPM) system that relies on high level prevention, avoidance, monitoring, and suppression techniques that are based on an understanding of pest ecology. Organic IPM relies primarily on ecologically based cultural and biological practices that result in healthy soil and habitat for beneficial organisms. Appropriate mitigation techniques are utilized to improve environmental risks from selected suppression techniques.

Land Use Applicability
This enhancement is applicable on cropland, pasture or rangeland that is certified organic or is in the process of transitioning to organic.

Benefits
Environmental benefits will be operation specific. Benefits may include but are not limited to improved water and air quality achieved through minimizing suppression risk to natural resources. This will include reducing pesticide risks in runoff, leaching, drift and volatilization, as well as impacts on pollinators, beneficial insects and wildlife. It may also include reduced soil erosion and sediment loss from tillage for weed control.
Implementing IPM increases biodiversity on the farm while improving soil quality, resulting in a more stable farming system that helps to prevent pests from overwhelming the system.

Criteria for utilizing high level Integrated Pest Management (IPM)
IPM is a sustainable approach to pest management that combines the use of prevention, avoidance, monitoring and suppression strategies, to maintain pest populations below economically damaging levels, to minimize pest resistance, and to minimize harmful effects of pest control on human health and environmental resources. Components of a high level Organic IPM include proactive cultural and biological controls. High level Organic IPM includes:

1. A written IPM plan and implementation of activities that include:
    a. Prevention techniques such as cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, irrigation scheduling to avoid situations conducive to disease development, etc.
    b. Avoidance techniques such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, refuge management, strip cropping, interplanting, intercropping, multiple cropping, etc.
    c. Monitoring techniques such as pest scouting, degree-day modeling, weather forecasting, use of economic thresholds, etc. to help target suppression strategies and avoid routine preventative treatments.

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   d. Suppression techniques such as cultural and biological methods to reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms.

2. Only those substances listed in the National Organic Program regulations §205.601 and §205.603 may be used in the IPM program. These regulations are attached. Also see National Organic Program Regulations website at: http://www.ams.usda.gov/AMSv1.0/NOP.
3. Acreage must be certified organic or in the transition to organic process.

Documentation Requirements for utilizing high level Integrated Pest Management (IPM)

1. A written organic IPM system plan for all of the offered acres. This plan should include each of the following items:
   - Pest prevention techniques
   - Pest avoidance techniques
   - Pest monitoring (scouting) techniques
   - Economic pest thresholds
   - Pesticide environmental risk analysis tool that was used for pesticides selected from the NOP Prohibited and Allowed Substance list (e.g., the NRCS Windows Pesticide Screening Tool - WIN-PST)
   - Approved pesticide application records with the specific management techniques that were utilized to reduce pesticide environmental risk (i.e., spot treatment, banding, pheromone traps, pesticide incorporation, etc.)
   - Land Grant University guidance, if available, should be followed for acceptable prevention, avoidance, monitoring and suppression techniques.
   - Map showing location of fields, acreage, beneficial insect habitat, etc.
   - Environmental assessment of non-chemical suppression methods, e.g. cultivation, burning
2. Copies of scouting reports and other IPM records used to monitor and evaluate the plans effectiveness.
3. If formal IPM Guidelines with a numeric scoring system have been developed and approved by Extension, a completed set of those guidelines can be substituted for the documentation requirements in number 1 above.

Cited NOP Regulations

§ 205.601 Synthetic substances allowed for use in organic crop production.

In accordance with restrictions specified in this section, the following synthetic substances may be used in organic crop production: *Provided,* That, use of such substances do not contribute to contamination of crops, soil, or water. Substances allowed by this section, except disinfectants and sanitizers in paragraph (a) and those substances in paragraphs (c), (j), (k), and (l) of this section, may only be used when the provisions set forth in §205.206(a) through (d) prove insufficient to prevent or control the target pest.

(a) As algicide, disinfectants, and sanitizer, including irrigation system cleaning systems.

(1) Alcohols.

(i) Ethanol.

(ii) Isopropanol.

(2) Chlorine materials— *Except,* That, residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act.

(i) Calcium hypochlorite.

(ii) Chlorine dioxide.

(iii) Sodium hypochlorite.

(3) Copper sulfate—for use as an algicide in aquatic rice systems, is limited to one application per field during any 24-month period. Application rates are limited to those which do not increase baseline soil test values for copper over a timeframe agreed upon by the producer and accredited certifying agent.

(4) Hydrogen peroxide.

(5) Ozone gas—for use as an irrigation system cleaner only.

(6) Peracetic acid—for use in disinfecting equipment, seed, and asexually propagated planting material.

(7) Soap-based algicide/demossers.

(b) As herbicides, weed barriers, as applicable.

(1) Herbicides, soap-based—for use in farmstead maintenance (roadways, ditches, right of ways, building perimeters) and ornamental crops.

(2) Mulches.

(i) Newspaper or other recycled paper, without glossy or colored inks.

(ii) Plastic mulch and covers (petroleum-based other than polyvinyl chloride (PVC)).

(c) As compost feedstocks—Newspapers or other recycled paper, without glossy or colored inks.

(d) As animal repellents—Soaps, ammonium—for use as a large animal repellant only, no contact with soil or edible portion of crop.

(e) As insecticides (including acaricides or mite control).

(1) Ammonium carbonate—for use as bait in insect traps only, no direct contact with crop or soil.

(2) Boric acid—structural pest control, no direct contact with organic food or crops.

(3) Copper sulfate—for use as tadpole shrimp control in aquatic rice production, is limited to one application per field during any 24-month period. Application rates are limited to levels which do not increase baseline soil test values for copper over a timeframe agreed upon by the producer and accredited certifying agent.

(4) Elemental sulfur.

(5) Lime sulfur—including calcium polysulfide.

(6) Oils, horticultural—narrow range oils as dormant, suffocating, and summer oils.

(7) Soaps, insecticidal.

(8) Sticky traps/barriers.

(9) Sucrose octanoate esters (CAS #s—42922–74–7; 58064–47–4)—in accordance with approved labeling.

(f) As insect management. Pheromones.

(g) As rodenticides.

(1) Sulfur dioxide—underground rodent control only (smoke bombs).

(2) Vitamin D_3.

(h) As slug or snail bait. Ferric phosphate (CAS # 10045–86–0).

(i) As plant disease control.

(1) Coppers, fixed—copper hydroxide, copper oxide, copper oxychloride, includes products exempted from EPA tolerance, *Provided*, That, copper-based materials must be used in a manner that minimizes accumulation in the soil and shall not be used as herbicides.

(2) Copper sulfate—Substance must be used in a manner that minimizes accumulation of copper in the soil.

(3) Hydrated lime.

(4) Hydrogen peroxide.

(5) Lime sulfur.

(6) Oils, horticultural, narrow range oils as dormant, suffocating, and summer oils.

(7) Peracetic acid—for use to control fire blight bacteria.

(8) Potassium bicarbonate.

(9) Elemental sulfur.

(10) Streptomycin, for fire blight control in apples and pears only.

(11) Tetracycline (oxytetracycline calcium complex), for fire blight control only.

(j) As plant or soil amendments.

(1) Aquatic plant extracts (other than hydrolyzed)—Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount used is limited to that amount necessary for extraction.

(2) Elemental sulfur.

(3) Humic acids—naturally occurring deposits, water and alkali extracts only.

(4) Lignin sulfonate—chelating agent, dust suppressant, floatation agent.

(5) Magnesium sulfate—allowed with a documented soil deficiency.

(6) Micronutrients—not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing.

(i) Soluble boron products.

(ii) Sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

(7) Liquid fish products—can be pH adjusted with sulfuric, citric or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.

(8) Vitamins B_1, C, and E.

(k) As plant growth regulators. Ethylene gas—for regulation of pineapple flowering.

(l) As floating agents in postharvest handling.

(1) Lignin sulfonate.

(2) Sodium silicate—for tree fruit and fiber processing.

(m) As synthetic inert ingredients as classified by the Environmental Protection Agency (EPA), for use with nonsynthetic substances or synthetic substances listed in this section and used as an active pesticide ingredient in accordance with any limitations on the use of such substances.

(1) EPA List 4—Inerts of Minimal Concern.

(2) EPA List 3—Inerts of Unknown Toxicity allowed:

(i) Glycerine Oleate (Glycerol monooleate) (CAS #s 37220–82–9)—for use only until December 31, 2006.

(ii) Inerts used in passive pheromone dispensers.

(n) Seed preparations. Hydrogen chloride (CAS # 7647–01–0)—for delinting cotton seed for planting.

[65 FR 80637, Dec. 21, 2000, as amended at 68 FR 61992, Oct. 31, 2003; 71 FR 53302 Sept. 11, 2006; 72 FR 69572, Dec. 10, 2007]

§ 205.603 Synthetic substances allowed for use in organic livestock production.

In accordance with restrictions specified in this section the following synthetic substances may be used in organic livestock production:

(a) As disinfectants, sanitizer, and medical treatments as applicable.

(1) Alcohols.

(i) Ethanol-disinfectant and sanitizer only, prohibited as a feed additive.

(ii) Isopropanol-disinfectant only.

(2) Aspirin-approved for health care use to reduce inflammation.

(3) Atropine (CAS #–51–55–8)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR part 205, the NOP requires:

(i) Use by or on the lawful written order of a licensed veterinarian; and

(ii) A meat withdrawal period of at least 56 days after administering to livestock intended for slaughter; and a milk discard period of at least 12 days after administering to dairy animals.

(4) Biologics—Vaccines.

(5) Butorphanol (CAS #–42408–82–2)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR Part 205, the NOP requires:

(i) Use by or on the lawful written order of a licensed veterinarian; and

(ii) A meat withdrawal period of at least 42 days after administering to livestock intended for slaughter; and a milk discard period of at least 8 days after administering to dairy animals.

(6) Chlorhexidine—Allowed for surgical procedures conducted by a veterinarian. Allowed for use as a teat dip when alternative germicidal agents and/or physical barriers have lost their effectiveness.

(7) Chlorine materials—disinfecting and sanitizing facilities and equipment. Residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act.

(i) Calcium hypochlorite.

(ii) Chlorine dioxide.

(iii) Sodium hypochlorite.

(8) Electrolytes—without antibiotics.

(9) Flunixin (CAS #–38677–85–9)—in accordance with approved labeling; except that for use under 7 CFR part 205, the NOP requires a withdrawal period of at least two-times that required by the FDA.

(10) Furosemide (CAS #–54–31–9)—in accordance with approved labeling; except that for use under 7 CFR part 205, the NOP requires a withdrawal period of at least two-times that required that required by the FDA.

(11) Glucose.

(12) Glycerine—Allowed as a livestock teat dip, must be produced through the hydrolysis of fats or oils.

(13) Hydrogen peroxide.

(14) Iodine.

(15) Magnesium hydroxide (CAS #–1309–42–8)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR part 205, the NOP requires use by or on the lawful written order of a licensed veterinarian.

(16) Magnesium sulfate.

(17) Oxytocin—use in postparturition therapeutic applications.

(18) Paraciticides. Ivermectin—prohibited in slaughter stock, allowed in emergency treatment for dairy and breeder stock when organic system plan-approved preventive management does not prevent infestation. Milk or milk products from a treated animal cannot be labeled as provided for in subpart D of this part for 90 days following treatment. In breeder stock, treatment cannot occur during the last third of gestation if the progeny will be sold as organic and must not be used during the lactation period for breeding stock.

(19) Peroxyacetic/peracetic acid (CAS #–79–21–0)—for sanitizing facility and processing equipment.

(20) Phosphoric acid—allowed as an equipment cleaner, *Provided* , That, no direct contact with organically managed livestock or land occurs.

(21) Poloxalene (CAS #–9003–11–6)—for use under 7 CFR Part 205, the NOP requires that poloxalene only be used for the emergency treatment of bloat.

(22) Tolazoline (CAS #–59–98–3)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR Part 205, the NOP requires:

(i) Use by or on the lawful written order of a licensed veterinarian;

(ii) Use only to reverse the effects of sedation and analgesia caused by Xylazine; and

(iii) A meat withdrawal period of at least 8 days after administering to livestock intended for slaughter; and a milk discard period of at least 4 days after administering to dairy animals.

(23) Xylazine (CAS #–7361–61–7)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR Part 205, the NOP requires:

(i) Use by or on the lawful written order of a licensed veterinarian;

(ii) The existence of an emergency; and

(iii) A meat withdrawal period of at least 8 days after administering to livestock intended for slaughter; and a milk discard period of at least 4 days after administering to dairy animals.

(b) As topical treatment, external parasiticide or local anesthetic as applicable.

(1) Copper sulfate.

(2) Iodine.

(3) Lidocaine—as a local anesthetic. Use requires a withdrawal period of 90 days after administering to livestock intended for slaughter and 7 days after administering to dairy animals.

(4) Lime, hydrated—as an external pest control, not permitted to cauterize physical alterations or deodorize animal wastes.

(5) Mineral oil—for topical use and as a lubricant.

(6) Procaine—as a local anesthetic, use requires a withdrawal period of 90 days after administering to livestock intended for slaughter and 7 days after administering to dairy animals.

(7) Sucrose octanoate esters (CAS #s–42922–74–7; 58064–47–4)—in accordance with approved labeling.

(c) As feed supplements—None.

(d) As feed additives.

(1) DL–Methionine, DL–Methionine—hydroxy analog, and DL–Methionine—hydroxyl analog calcium (CAS #–59–51–8; 63–68–3; 348–67–4)—for use only in organic poultry production until October 1, 2010.

(2) Trace minerals, used for enrichment or fortification when FDA approved.

(3) Vitamins, used for enrichment or fortification when FDA approved.

(e) As synthetic inert ingredients as classified by the Environmental Protection Agency (EPA), for use with nonsynthetic substances or synthetic substances listed in this section and used as an active pesticide ingredient in accordance with any limitations on the use of such substances.

(1) EPA List 4—Inerts of Minimal Concern.

(2) [Reserved]

(f) Excipients, only for use in the manufacture of drugs used to treat organic livestock when the excipient is: Identified by the FDA as Generally Recognized As Safe; Approved by the FDA as a food additive; or Included in the FDA review and approval of a New Animal Drug Application or New Drug Application.

[72 FR 70484, Dec. 12, 2007, as amended at 73 FR 54059, Sept. 18, 2008]