Association of American Plant Food Control Officials
Terms & Definitions Committee
2019 Summer Annual Agenda
Louisville, KY
August 8, 2019

Committee Objectives

- Review list of tentative terms and definitions previously brought before the committee and vote to retain them in tentative status, move to official status, or delete them.
- Review and discuss new agenda items brought before the committee

CALL TO ORDER

1. Welcome, roll call of committee members and introduction of guests. (5 minutes)
   Facilitator: Nick Young

2. Agenda review and approval

3. Winter 2019 Annual Meeting Report Review and Approval (5 minutes) Chair

4. Old Business - AAPFCO Membership Voting Items at Summer Annual 2019, Terms and Definitions can act on these depending on the outcome of the Membership vote. Available to delete, stay tentative, official. (1 hour) Chair

   Terms will not be discussed if voted to official or deleted by the membership

S-13# - Elemental Sulfur(S) – Sulfur existing in its elemental form. It can be sourced from the refining process of crude oil or mined from natural sources. Elemental sulfur is a source of slow release sulfur. Particles of less than 100µm in size have been shown to oxidize to sulfur over a growing season to become plant available. Membership voting official

T-111 Free Sulfur – Represents the elemental sulfur in a sulfur sub-guarantee. Membership voting official

T-112 Combined Sulfur – refers to sulfur combined with other elements, primarily by ionic bonds. Combined sulfur can be present in many forms, the most common is sulfate sulfur (SO₄²⁻). This is the plant available form of sulfur derived from salts containing the sulfate ion SO₄²⁻ and positively charged ions such as those of ammonium and magnesium. Many other forms of combined sulfur can and do exist. Membership voting official

T-115 Mycorrhiza (plural mycorrhizae) – is a term used to describe the symbiotic association between a mycorrhizal fungi and a plant root. Membership voting to delete

T-117 Endomycorrhizal fungi [also Arbuscular Mycorrhizal Fungi (AMF)] – any mycorrhizal fungi that form vesicles and Arbuscules in root cells. Also - vesicular arbuscular mycorrhizae (VAM)] are members of the phylum Glomeromycota, one the largest groups of endomycorrhizal
fungi. Only the numbers of spores or propagules are allowed in product guarantees.

**Membership voting to delete**

**T-118 Endomycorrhiza(e)** - A mycorrhizal association with intracellular penetration of the host root cortical cells by the fungus as well as outward extension into the surrounding soil.

**Membership voting to delete**

**T-119 Ectomycorrhiza(e)** - Fungal associations characterized by two structural components between the mycelium and the plant root; a sheath or mantle of fungal tissue which encloses a plant root, a intricate inward growth of hyphae between the epidermal and cortical cells called the Hartig net.

**Membership voting to delete**

**P-39 Hydroxylapatite** - is a naturally-formed phosphate rock with the formula \( \text{Ca}_5(\text{PO}_4)_3(\text{OH}) \). The Fluorine content is less than 1%.

**Membership voting official**

**K-23 Potassium Hydrogen Phosphate Dihydrate** – Inorganic water soluble fertilizer; Double salt of Monopotassium Phosphate and Dipotassium Phosphate. It shall contain forty-two (42%) to forty-five (45%) available phosphate and forty-two (42%) to forty-five (45%) soluble potash. (CAS Number 66922-99-4)

**Membership voting official**

**T-122# Pronitridine** – is a water-soluble reaction product of urea, ammonium hydroxide, N-cyanoguanidine, and formaldehyde. It is a nitrification inhibitor (CAS Number 1373256-33-7)

**Membership voting official**

**Mn-20 Manganese (II) Gluconate** – is a manganese (II) **chelate** complex of gluconic acid, and is commonly expressed as Mn gluconate.

**Membership voting official**

5. **Some more Old Business** – Terms membership is voting as tentative

**Fe-25 Iron (II) Gluconate** – is an iron(II) **chelate** complex of gluconic acid, and is commonly expressed as Fe gluconate.

**Zn-22 Zinc (II) Gluconate** – is a zinc (II) **chelate** complex of gluconic acid, and is commonly expressed as Zn gluconate.

**Cu-12 Copper Glucoheptonate** – is a copper (II) **chelate** complex of glucoheptinic acid and is commonly expressed as Cu Glucoheptonate.

**Fe-14 Iron Glucoheptonate** – is an iron (III) **chelate** complex of glucoheptinic acid and is commonly expressed as Fe Glucoheptonate.

**Mn-11 Manganese Glucoheptonate** – is a manganese (II) **chelate** complex of glucoheptinic acid and is commonly expressed as Mn Glucoheptonate.

**Zn-11 Zinc Glucoheptonate** – is a zinc (II) **chelate** complex of glucoheptinic acid and is commonly expressed as Zn Glucoheptonate.
T-109 Maleic-Itaconic Copolymer, Calcium Salt – A substance composed of a partial calcium salt of maleic-itaconic copolymer that can be applied to granular urea fertilizers or mixed with liquid ammoniacal nitrogen/urea fertilizers.

T-110 Maleic-Itaconic Copolymer, Sodium Salt – A substance composed of a partial sodium salt of maleic-itaconic copolymer that can be applied to granular phosphate fertilizer.

T-108 Maleic-Itaconic Copolymer, Ammonium Salt – A substance composed of a partial ammonium salt of maleic-itaconic copolymer that can be mixed with liquid phosphate fertilizers.

T-113 Endomycorrhizal fungal propagules – are the structures of endomycorrhizal fungi that are capable of forming a symbiotic association with plant roots. These structures are endomycorrhizal spores and root fragments colonized by endomycorrhizal fungi.

T-144 Mycorrhizal fungi – are fungi that are capable of forming mutually beneficial symbiotic associations between the fungal mycelium and the roots of vascular plants. These fungi include endomycorrhizal fungi and ectomycorrhizal fungi.

T-116 Ectomycorrhizal fungal propagule – is a structure of ectomycorrhizal fungi that is capable of forming a symbiotic association with plant roots. These structures are spores of ectomycorrhizal fungi.

T-120 Beneficial bacteria – are bacteria that may enhance plant growth and yield, either directly by colonizing roots and fixing nitrogen, or indirectly, by increasing the availability of nutrients from the soil. Beneficial bacteria may also help plants tolerate abiotic stress and/or help with plant nutrient uptake. Beneficial bacteria are expressed as genus and species, and, if applicable strain, and guaranteed by an amount, designated as colony-forming units per gram (for dry products) or milliliter (for liquid products).

T-121 Colony-forming unit (CFU) – is a unit used to quantify the viable cells of bacteria and culturable fungi in a sample. It is a measure of the number of individual colonies formed when the inoculum is plated using microbiological culture methods appropriate for that organism.

N-67 Calcium Ammonium Nitrate (CAN) – A dry fertilizer containing as its essential ingredients only ammonium nitrate and calcium carbonate (e.g. limestone) and/or magnesium carbonate and calcium carbonate (e.g. dolomite), prepared as a homogenous prill or granule, with a maximum combustible material content, expressed as carbon, of 0.4% by weight. The minimum content of such calcium and/or magnesium carbonates in CAN is 20% by weight and their purity level is 90% by weight minimum.

N-xx Ammonium Calcium Nitrate Double Salt – Is a (fertilizer grade) hydrated double salt (calcium nitrate and ammonium nitrate) formulated from nitric acid. It is a prill or granular dry product and is a single water-soluble compound but not a mixture/blend of multiple sources. This product shall contain a minimum of 15.0% nitrogen and 18.5% calcium and at least 12% water of crystallization. It has less than 10% ammonium nitrate by weight. It is further identified by CAS# 15245-12-2.
**N-xx Calcium Nitrate** – Is the calcium salt of nitric acid, this product shall not contain an ammonium ion. It encompasses both the anhydrous form (CAS# 10124-37-5) and the hydrated form (CAS# 13477-34-4) of the salt.

SUIP #6 would be amended as follows:

**Calcium Ammonium Nitrate (CAN)**. In the CAN production process, the carbonates are added as a fine powder with a minimum of 80 percent of the powder smaller than 250 microns. Carbonates are either added directly to the CAN granulator or premixed with a concentrated ammonium nitrate solution to produce a homogeneous slurry that is fed into the granulation or prilling section. The solid CAN that is produced contains an intimate homogenous mixture in which each single particle has a similar ammonium nitrate/carbonates ratio.

**Mixtures of Ammonium Nitrate and Limestone or Dolomite** A physical blend of dry fertilizer grade ammonium nitrate granules or prills with carbonates (e.g., limestone granules or chips) giving the same average chemical composition as CAN does not qualify as CAN under this definition if any of its individual blended constituents containing ammonium nitrate.

**Duromide€#** – Reaction product of N-(n-butyl)thiophosphoric triamide, urea and formaldehyde, that acts as a urease inhibitor (CAS Number 2093385-47-6).

**Polyacrylamide** – A water-soluble (linear polymer) substance used for soil amendment, wherein the substance is copolymerized and applied in dry granular or emulsion forms to soils. The substance is characteristically anionic, with charge density of 5-40%, a molecular weight range of 8-20 mg/mol, and is made up of variable ratios of acrylamide and acrylic acid monomer. Usage can reduce soil-surface sealing and soil erosion due to irrigation or rain events.

**Ammonium Bicarbonate** – The bicarbonate salt of the ammonium ion with the chemical formula of (NH4)HCO3. It shall contain not less than 17% total nitrogen. CAS# 1066-33-7. In its solid form ammonium bicarbonate is water soluble.

**Uncalcined Diatomaceous Earth** – containing amorphous silicon dioxide of the *Melosira granulata* species is a natural source of soluble silicon, Ca, Mg, and Fe.

6. **New Business** –

Volcanic Ash (Dacitic) – Anne-Laure Guihur, TSG (7-6-18, AAPFCO Secure site)

**Volcanic Ash (Dacitic)** – Composed of small (< 2 mm) fragments of pumice and other mineral matter deposited during an explosive volcanic eruption, with an overall composition equivalent to dacite, a high-silica volcanic rock formed from crystallized lava. Deposits also may include some larger fragments. It can be used as a source of primary nutrients (such as Potassium) secondary nutrients (such as Calcium and Magnesium), micronutrients (such as Iron), and beneficial substances (such as Silicon), and as a soil conditioner.

**Working group created**: Greg Cunningham, James Bartos, *Anne-Laure Guihur, Frank Sikora, Marty Campfield

Humic Substances – Jared Lighthart, Tranlin, Inc (11-2-18, AAPFCO website)
**T-100 Humic Substances** – Constituents of soil organic matter and the aquatic environment, consisting of complex heterogeneous mixtures of carbon-based substances formed by biochemical reactions during the decay and transformation of plant and microbial remains. They are primarily composed of three main fractions, called humic acids, fulvic acids, and humin, which are operationally defined by their solubility in dilute alkali and acid solutions. Sources of humic substances are commercially harvested from terrestrial deposits which include, but are not limited to, Leonardite, oxidized lignite, oxidized sub-bituminous coals, humalite, carbonaceous shales (including humic shale), peat, and sapropel, and plant materials.

  Working Group: Jared Lightheart, Greg Cunningham, Ron Alexander, David Chinn, Lawrence Mahew, Matt Haynes, Rick Killebrew, someone from CA

Coir and Coconut Fiber – Rober LaGasse, Mulch and Soil Council

  Coir – The processed pith along with fibers of coconut (Cocos nucifera). It generally appears reddish-tan and granular to fibers and is available in different size gradations.

  Coconut Fiber – The processed fiber with minimum pith from coconut (Cocos nucifera) husks.

7. **Next Steps - Assignments and Agenda Items for next meeting**