

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**

Motion: Ben Jones

Second: Robert Tolton

Motion carried

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

Motion: Katie Laney

Second: Ben Jones

Motion carried

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.

Motion: Mark LeBlanc. Remain tentative

Second: Glenn Murry

Motion Passed; remain Tentative

Eric Johnson: iron is still being worked on; suggest waiting until all of the materials are completed before moving forward.

Jack Peters: the conclusion is that it is a chelate not a complex?

Eric: for zinc

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

Motion: Joe Slater motion to strike complex and keep chelate remain tentative

Second: Steve Harley

Motion failed

Motion David Dressler to official with the chelate notion above

Second: Sharon webb

Motion carried, official

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

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

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

Motion: David Dressler for Cu -12, Fe-14, and Mn-11 to remain tentative

Second: Mark LeBlanc

Motion Carried, remain tentative

Zn-11 Zinc Glucoheptonate – is a zinc (II) ~~chelate~~ complex of glucoheptonic acid and is commonly expressed as Zn Glucoheptonate.

Motion: David Dressler to official

Second: Robert Tolton

Spelling correction, glucoheptonic was accepted as an amendment

Toby Primbs: should the II be removed?

Motion carried, official

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.

Motion: Eddie Simon to official

Second: Nick Young

Motion Carried, official

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.

Motion:

Second:

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.

Motion: Matt Pearson both T-110 and T-108 to official

Second: Robert Tolton

Motion Carried, official

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.

Motion: Steve Harley move T-113 through T-121 to official

Second: Toby Primbs

Motion Carried, official

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.

Motion:

Second:

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.

Motion:

Second:

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 -67 Calcium Ammonium Nitrate – A dry fertilizer prill or granule 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 homogeneous mixture, with a maximum combustible material content, expressed as organic carbon, of 0.4% by weight. The minimum content of such calcium and/or magnesium carbonates in this product is 20% by weight and their purity level is 90% by weight minimum. The calcium in this product is not water- soluble.

Motion: Nick Young to accept N-67

Second: James Barton

Motion Carried, official

N-68 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-69 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.

Motion: Nick Young to accept N-68 and N-69 as official
Second: Eddie Simons

Jack Peters: these will be significant changes on labels this will take time to change in the market place

Motion Carried, official

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~~

SUIP #6 would be amended as follows:

Calcium Ammonium Nitrate - In the Calcium Ammonium Nitrate 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 Calcium Ammonium Nitrate 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 Calcium Ammonium Nitrate that is produced contains an intimate homogenous mixture in which each single particle has a similar ammonium nitrate/carbonates ratio.

Mixtures (Blends) 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 Calcium Ammonium Nitrate does not qualify under this definition if any of its individual blended constituents containing ammonium nitrate have more than 80 percent by weight of ammonium nitrate or are not intimate mixtures of ammonium nitrate and carbonates. The Calcium Ammonium Nitrate designation is exclusively reserved for a fertilizer matching the defined criteria of composition and production.

Motion: Nick Young to official
Second: David Dressler

Motion carried, official

T-122 Duromide – Reaction product of N-(n-butyl)thiophosphoric triamide, urea and formaldehyde, that acts as a urease inhibitor (CAS Number 2093385-47-6).

Motion: Matt Pearson to official

Second: Robert Tolton

Drew with Kock, corrected numbering issue. Pronitridine should be T-124

Motion Carried, official

T-123 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.

Motion: Eddie Simon to official with the strike through noted

Second: Steve Harley

Eddie Simons is the charge density and molecular weight range important for the definition of could it be struck from the definition.

James Bartos: I don't recall if there is a method

Toby Primbs: is there a reason that crosslinked are not included?

Eric Johnson: doesn't feel the crosslink needs to be mentioned

Motion carried, official

N-70 Ammonium Bicarbonate – The bicarbonate salt of the ammonium ion with the chemical formula of $(\text{NH}_4)\text{HCO}_3$. It shall contain not less than 17% total nitrogen. CAS# 1066-33-7. In its solid form ammonium bicarbonate is water soluble.

Motion: Matt Pearson to official

Second: Steve Harley

Allen Blaylock: wouldn't we want to say this is the ammonium salt of carbonic acid? seems to be backward

Sharron: it's not the full carbonic acid; it would have to be bi carbonic acid

Michael: that cannot exist

Motion Carried, official

BSC-8 Uncalcined Diatomaceous Earth – containing amorphous silicon dioxide of the *Melosira granulata* species is a natural source of soluble silicon, Ca, Mg, and Fe.

Motion: James Bartos to official

Second: Glenn Murry

Nick Young: is uncalcined unique? Is only uncalcined diatomaceous earth

Dr. Mary: it is a unique species. It has to do with it being fresh water

James we say it is not less than 17% is there a fixed amount or can it be variable
Dr. Mary there can be slight variables but it's generally within the specified amount.
We have not determined a fixed amount that is required
Wendy Zoner : not to a point where we would have an exact number

Motion Carried, official

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, Marten Burger CA, Toby Primbs

Bill Hall: they will need to be aware of SUIP 25

Marty Campfield: it is a dacitic type

James would have greater confidence if it said dacitic volcanic ash. It is not just volcanic ash. The working group needs s to better clarify

Nick: could it be called dacite?

Marty: it's not dacite but has similar characteristics

The working group will continue

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 Lighthart, Greg Cunningham, Ron alexander, David Chinn, Lawrence Mahew, Matt Haynes, Rick Killebrew, someone from CA

Motion: Matt Pearson Table until the working group has a recommendation

Second: Robert Tolton

Russell Taylor: recommends removing plant material from the definition.

*Motion Carried, **tabled until working group has a recommendation***

Coir and Coconut Fiber – Robert 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 in different size gradations.~~

~~*Motion:*~~

~~*Second:*~~

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

Oregon Dept. of Ag, Mike Hertel

~~**Coir**– The processed husk pith along with fibers of coconut (Cocos nucifera) consisting of ~~varying ratios of pith and~~ or fiber.~~

~~*Motion: Nick Young to tentative with amendments, strike the coir pith and coir fiber definitions. As well as buffered coir*~~

~~*Second: David Dressler*~~

~~*Motion carried, **tentative***~~

~~**Coir Pith**—Chiefly the non-fibrous spongy portion of coconut husks.~~

~~**Coir Fiber**—Chiefly the fibrous portion of coconut husks.~~

~~**Buffered Coir**– Coir that has been treated with a water soluble calcium salt (such as calcium chloride, calcium nitrate, etc.) in solution for the purpose of displacing/removing excessive sodium and potassium ions.~~

~~*Motion: captured above*~~

Corn Steep Liquor – Martin Burger, CA Department of Food and Agriculture

~~**N-XX Corn Steep Liquor (CSL)** – A water-soluble by-product of corn wet milling. It may be produced by soaking cleaned shelled corn in dilute sulfur dioxide solution, followed by corn solids removal and concentration of the steep water by evaporation. The resulting corn steep liquor is a source of nitrogen ~~containing proteins, amino acids, and short polypeptides.~~~~

~~*Motion: Katie Laney to accept the definition as amended*~~

~~*Second: Eddie Simon*~~

Toby Primbs: can we remove CSL
Eddie Simons: is there a feed definition?
James Bartos: what is the dilute sulfur dioxide solution?
Brett Groves: the sulfur dioxide is part of the process
Bill Hall: is there a standard amount of nitrogen?

Motion carried, tentative

Seaweed and Kelp – Martin Burger, CA Department of Food and Agriculture

K-xx Seaweed – Macroscopic multicellular marine algae.

Motion: Matt Pearson to accept definition
Second: Phil Davidson

Eddie: do we want to limit it to dried seaweed to match kelp?
Greg Cunningham: it's still kelp or seaweed rather dried or not
David Dressler: is the definition to broad?

Motion carried, tentative

K-11 Kelp – Marine algae belonging to the orders Laminariales in the class Phaeophyceae. Kelp is classified as a seaweed.

Motion: Nick Young accept the proposed definition and bring the existing definition into tentative status
Second: Toby Primbs

James Bartos: does doing away with red green and brown have an impact?
Nick: no

Motion carried, tentative for proposed definition and current definition

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

Gary Vogel: N-66 should be deleted
Bill Easterwood: please delete

Motion: Katie Laney to delete N-66
Second: Nick Young

Motion carried, delete

Gregg Cunningham: the definition for polyacrylamide is not correct

look into if this changes the

Motion to adjourn: Joe Slater

Second: Eddie Simons

Motion carried