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(72) Inventeurs/Inventors:
BUTLER, ANDREW, CA;
LIAW-MORRIS, PETER, CA;
QUOC LE, BRYAN, US
(73) Propriétaires/Owners:
BUTLER, ANDREW, CA;
LIAW-MORRIS, PETER, CA;
QUOC LE, BRYAN, US
(74) Agent: NA

(54) Titre : COMPOSITION DE FEUILLAGE COMPRENANT UN BICARBONATE DE POTASSIUM, UN SAVON LIQUIDE ET UN ACIDE SALICYLIQUE OU UN ACIDE Y-AMINO BUTYRIQUE POUR AMELIORER LA CROISSANCE ET LE RENDEMENT DE PLANTS
(54) Title: FOLIAR COMPOSITON COMPRISING POTASSIUM BICARBONATE, LIQUID SOAP, AND SALICYLIC ACID OR Y-AMINO BUTYRIC ACID FOR ENHANCING PLANT GROWTH AND PRODUCTIVITY

(57) **Abrégé/Abstract:**

An improved foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to the plant's foliage and stems. In particular, such a foliar composition and method would include salicylic acid or gamma aminobutyric acid (GABA) as additives for promoting plant growth, and could also be used in conjunction with an additional composition for further stimulating plant growth, which would be sprayed or applied on the leaves/stalks of the plant to enhance such growth and yield.

ABSTRACT

An improved foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to the plant's foliage and stems. In particular, such a foliar composition and method would include salicylic acid or gamma aminobutyric acid (GABA) as additives for promoting plant growth, and could also be used in conjunction with an additional composition for further stimulating plant growth, which would be sprayed or applied on the leaves/stalks of the plant to enhance such growth and yield.

**FOLIAR COMPOSITION COMPRISING POTASSIUM BICARBONATE,
LIQUID SOAP, AND SALICYLIC ACID OR γ -AMINOBTYRIC ACID
FOR ENHANCING PLANT GROWTH AND PRODUCTIVITY**

FIELD OF THE INVENTION

The present invention relates to a foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to a plant's foliage and stems. In particular, such a foliar composition and method would include salicylic acid or gamma aminobutyric acid (GABA) as additives for promoting plant growth.

DESCRIPTION OF THE PRIOR ART

It is known that organic compounds can be useful in stimulating the growth of plants for the purposes of increasing water and nutrient absorption, amongst other things, as well as yield.

Furthermore, when growing plants, it is known that gamma aminobutyric acid (GABA) can be utilized as a plant growth promoter when applied to the plant's foliage and stems, and has other advantages when applied to growing plants.

Accordingly, there is a need for a foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to the plant's foliage and stems.

There is a further need for a composition and method for stimulating plant growth and productivity (particularly medically grown cannabis) which can also be utilized in conjunction with an additional composition for stimulating plant

growth and productivity, which would be sprayed or applied on the leaves/stalks of the plant at desired intervals. Such a foliar composition could also be used to fight, for example, mold/mildew on the plants, and well as increasing Tetrahydrocannabinol (THC) when growing medically grown cannabis, for example. This would then enhance the uptake of certain nutrients such as nitrogen phosphorus, potassium, calcium, sulphur, magnesium, iron, manganese, boron, copper, zinc, and molybdenum for these plants.

To this end, the present invention effectively addresses these needs.

SUMMARY OF THE INVENTION

A general object and advantage of the present invention is to provide a foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to the plant's foliage and stems.

A still further object and advantage of the present invention is to provide a foliar composition for stimulating increased plant growth and productivity which would include, but is not limited to, salicylic acid or gamma aminobutyric acid (GABA) as additives for promoting plant growth.

Yet another object and advantage of the present invention is to provide a foliar composition and method which can be utilized in conjunction with an additional composition for stimulating plant growth and productivity, which would be sprayed or applied on the leaves/stalks of the plant at desired intervals, with a view to

enhancing the uptake of certain nutrients such as nitrogen phosphorus, potassium, calcium, sulphur, magnesium, iron, manganese, boron, copper, zinc, and molybdenum for these plants.

According to one aspect of the present invention, there is provided a foliar composition for stimulating growth and productivity of a plant, comprising a set quantity of water; a pre-set amount of Potassium Bicarbonate for dissolving in the set quantity of water; a pre-set amount of liquid soap (castile soap) for dissolving in the set quantity of water; and a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) for dissolving in the set quantity of water.

According to another aspect of the present invention, there is provided a foliar composition for stimulating growth and productivity of a plant, comprising a set quantity of water; a pre-set amount of Potassium Bicarbonate for dissolving in the set quantity of water; a pre-set amount of liquid soap for dissolving in the set quantity of water; a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) for dissolving in the set quantity of water; a pre-set amount of powdered giant knotweed (*Reynoutria sachalinensis*) for dissolving in the set quantity of water; and a pre-set amount of Dimethylsulfoxide (DMSO) for dissolving in the set quantity of water.

According to yet another aspect of the present invention, there is provided a method for creating a foliar composition for stimulating plant growth and productivity, comprising the steps of providing a set quantity of water; delivering a pre-set amount of Potassium Bicarbonate for dissolving in the set quantity of water; delivering a pre-set amount of liquid soap for dissolving

in the set quantity of water; and delivering a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) for dissolving in the set quantity of water.

According to yet another aspect of the present invention, there is provided a foliar composition for stimulating growth and productivity of a plant, comprising a set quantity of water; a pre-set amount of Potassium Bicarbonate for dissolving in the set quantity of water, wherein the pre-set amount of the Potassium Bicarbonate dissolved is in a range of between 25 grams to 35 grams for every 1 gallon of the set quantity of water; a pre-set amount of liquid soap for dissolving in the set quantity of water, wherein the pre-set amount of the liquid soap dissolved is in a range of between 1.5 ml to 3 ml for every 1 gallon of the set quantity of water; a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) for dissolving in the set quantity of water, wherein the pre-set amount of the Salicylic acid dissolved is in a range of between 0.5 grams to 1.0 gram for every 1 gallon of the set quantity of water, and wherein the pre-set amount of the gamma aminobutyric acid (GABA) dissolved is in a range of between 0.3 grams to 0.9 grams for every 1 gallon of the set quantity of water; a pre-set amount of powdered giant knotweed (*Reynoutria sachalinensis*) for dissolving in the set quantity of water, wherein the pre-set amount of the powdered giant knotweed dissolved is in a range of between 20 grams to 40 grams for every 1 gallon of the set quantity of water; and a pre-set amount of Dimethylsulfoxide (DMSO) for dissolving in the set quantity of water, wherein the pre-set amount of the Dimethylsulfoxide (DMSO) dissolved is in a range of between 1.9 ml to 38 ml for every 1 gallon of the set quantity of water.

According to yet another aspect of the present invention, there is provided a method for creating a foliar composition for stimulating plant growth and productivity, comprising the steps of providing a set quantity of water; delivering a pre-set amount of Potassium Bicarbonate for dissolving in the set quantity of water, wherein the pre-set amount of the Potassium Bicarbonate dissolved is in a range of between 25 grams to 35 grams for every 1 gallon of the set quantity of water; delivering a pre-set amount of liquid soap for dissolving in the set quantity of water, wherein the pre-set amount of the liquid soap dissolved is in a range of between 1.5 ml to 3 ml for every 1 gallon of the set quantity of water; delivering a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) for dissolving in the set quantity of water, wherein the pre-set amount of the Salicylic acid dissolved is in a range of between 0.5 grams to 1.0 gram for every 1 gallon of the set quantity of water, and wherein the pre-set amount of the gamma aminobutyric acid (GABA) dissolved is in a range of between 0.3 grams to 0.9 grams for every 1 gallon of the set quantity of water; delivering a pre-set amount of powdered giant knotweed (*Reynoutria sachalinensis*) for dissolving in the set quantity of water, wherein the pre-set amount of the powdered giant knotweed dissolved is in a range of between 20 grams to 40 grams for every 1 gallon of the set quantity of water; and delivering a pre-set amount of Dimethylsulfoxide (DMSO) for dissolving in the set quantity of water, wherein the pre-set amount of the Dimethylsulfoxide (DMSO) dissolved is in a range of between 1.9 ml to 38 ml for every 1 gallon of the set quantity of water.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to a foliar composition and method for stimulating increased plant growth and productivity through the application of an organic compound to the plant's foliage and stems. In particular, such a foliar composition would include salicylic acid or gamma aminobutyric acid (GABA) as additives for promoting plant growth, and for purposes of increasing water and nutrient absorption, amongst other things, as well as yield.

The present invention also relates to providing a foliar composition and method which can be utilized in conjunction with an additional composition for stimulating plant growth and productivity, which would be sprayed or applied on the leaves/stalks of the plant at desired intervals, with a view to enhancing the uptake of certain nutrients such as nitrogen phosphorus, potassium, calcium, sulphur, magnesium, iron, manganese, boron, copper, zinc, and molybdenum for these plants.

Such a foliar composition could also be used to fight, for example, mold/mildew on the plants, and well as increasing Tetrahydrocannabinol (THC) when growing medically grown cannabis, for example, and can favorably impact growth rates and yield of a variety of crops which can include, but is not limited to:

- medically grown cannabis
- Tomatoes
- Saffron
- Tobacco
- Anthurium Flowers (house plant)
- Oranges
- Peppers
- Lawn Grass

Of course, it will be understood that such plants could also be grown hydroponically, as would also be understood by one skilled in the art.

In an exemplary embodiment, the foliar composition and method of the present invention is used to create a composition in a concentrated formula. The chemical components of this composition are detailed as dissolved into 1 gallon of water, but the amount of chemicals and water can be increased to provide a desired batch amount, in terms of scalability, as would be understood by one skilled in the art. It will also be understood that the foliar composition of the present invention can be formulated in a packet as a powder or gel without water, and then added to a gallon of water (or more) at point of use, as would also easily be understood by one skilled in the art.

In Table 1 set forth below it can be seen that the following amounts are dissolved into 1 gallon of water to create the foliar composition. The first composition noted in Table 1 comprises quantities of Salicylic acid, while Table 2 lists the composition comprising quantities of Gamma aminobutyric acid (GABA).

TABLE 1

COMPONENT	Quantity Range	Water
Potassium Bicarbonate	25 grams to 35 grams	1 gallon
Liquid soap	1.5 ml to 3 ml	1 gallon
Salicylic acid	0.5 grams to 1.0 grams	1 gallon
Powdered giant knotweed	20 grams to 40 grams	1 gallon

(Reynoutria sachalinensis)		
Dimethylsulfoxide (DMSO)	1.9 ml to 38 ml	1 gallon

TABLE 2

COMPONENT	Quantity Range	Water
Potassium Bicarbonate	25 grams to 35 grams	1 gallon
Liquid soap	1.5 ml to 3 ml	1 gallon
Gamma aminobutyric acid (GABA)	0.3 grams to 0.9 grams	1 gallon
Powdered giant knotweed (Reynoutria sachalinensis)	20 grams to 40 grams	1 gallon
Dimethylsulfoxide (DMSO)	1.9 ml to 38 ml	1 gallon

It should be noted that the amounts noted above in **Tables 1** and **2** are not absolutes, but can be varied slightly, as would be understood by one skilled in the art.

In an exemplary embodiment of the present invention, the composition embodiments noted above can comprise (in 1 gallon of water) 31.2 grams of Potassium Bicarbonate; 2.6 mL of Liquid soap (castile soap); 0.628 grams of Salicylic acid or 0.468 grams of gamma aminobutyric acid (GABA); 20-40 grams of Powdered giant knotweed (Reynoutria sachalinensis); and 0.05% (1.9 mL to 1 gallon) to 1% (38 mL to 1 gallon) of Dimethylsulfoxide (DMSO).

Again, the amount of chemicals and water can be increased to

provide a desired batch amount, in terms of scalability, as would be understood by one skilled in the art. Further, to decrease costs, one skilled in the art could appreciate that the knotweed (*Reynoutria sachalinensis*) and the Dimethylsulfoxide (DMSO) could be omitted, if desired, and instead focus on the salicylic acid or gamma aminobutyric acid (GABA) as additives.

As noted previously, the foliar composition and method of the present invention can be utilized in conjunction with an additional composition for stimulating plant growth and productivity, which would be sprayed or applied on the leaves/stalks of the plant to enhance growth and yield. In one such embodiment, this additional composition could comprise quantities of Citric Acid or its hydrate and Disodium Hydrogen Phosphate (Na_2HPO_4) or one of its hydrates dissolved into water. In a further embodiment, the additional composition can comprise quantities of Citric Acid or its hydrate, Boric Acid and Trisodium Phosphate (Na_3PO_4) or its hydrate dissolved into water. Of course, it will be understood that the two above-noted examples of the additional composition are noted for example purposes only, and can be varied as desired, as would be understood by one skilled in the art.

The present invention has been described herein with regard to preferred embodiments. However, it will be obvious to persons skilled in the art that a number of variations and modifications can be made without departing from the scope of the invention as described herein.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method for creating a foliar composition for stimulating plant growth and productivity, for application to foliage and stems of a plant, the method comprising:

(a) providing a first composition comprising the steps of:

-adding a set quantity of water;

-adding a pre-set amount of Potassium Bicarbonate dissolved in the set quantity of water, wherein the pre-set amount of the Potassium Bicarbonate dissolved is in a range of between 25 grams to 35 grams for every 1 gallon of the set quantity of water;

- adding a pre-set amount of liquid soap dissolved in the set quantity of water, wherein the pre-set amount of the liquid soap dissolved is in a range of between 1.5 ml to 3 ml for every 1 gallon of the set quantity of water;

-adding a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) dissolved in the set quantity of water, wherein the pre-set amount of the Salicylic acid dissolved is in a range of between 0.5 grams to 1.0 gram for every 1 gallon of the set quantity of water, and wherein the pre-set amount of the gamma aminobutyric acid (GABA) dissolved is in a range of between 0.3 grams to 0.9 grams for every 1 gallon of the set quantity of water;

- adding a pre-set amount of powdered giant knotweed (*Reynoutria sachalinensis*) dissolved in the set quantity of water, wherein the pre-set amount of the powdered giant knotweed dissolved is in a range of between 20 grams to 40 grams for every 1 gallon of the set quantity of water;

-adding a pre-set amount of Dimethylsulfoxide (DMSO) dissolved in the set quantity of water, wherein the pre-set amount of the Dimethylsulfoxide (DMSO) dissolved is in a range of between 1.9 ml to 38 ml for every 1 gallon of the set quantity of water; and

(b) providing a second composition to be added to the foliar composition comprising the steps of: adding a quantity of Citric Acid or its hydrate, and adding Disodium Hydrogen Phosphate (Na_2HPO_4) or one of its hydrates dissolved into water.

2. The method of claim 1, wherein the second composition comprises a quantity of Citric Acid or its hydrate, and further comprises Boric Acid and Trisodium Phosphate (Na_3PO_4) or its hydrate dissolved into water.
3. The method of claim 1 or 2, wherein the second composition is thereafter applied at selected intervals.
4. The method of claim 1 or 2, wherein the second composition is applied by spraying.

5. A kit for creating a foliar composition to stimulate plant growth and productivity, and for application to foliage and stems of a plant, comprising, as separate components:
 - (a) the first composition as defined in claim 1; and
 - (b) the second composition as defined in claim 1, for combined use.

6. A kit for stimulating plant growth and productivity when growing medically grown cannabis comprising, as separate components:
 - (a) the first composition as defined in claim 1; and
 - (b) the second composition as defined in claim 1, for combined use.

7. A method for growing medically grown cannabis, for application to foliage and stems of a plant, the method comprising:
 - (a) providing a first composition comprising the steps of:
 - adding a set quantity of water;
 - adding a pre-set amount of Potassium Bicarbonate dissolved in the set quantity of water, wherein the pre-set amount of the Potassium Bicarbonate dissolved is in a range of between 25 grams to 35 grams for every 1 gallon of the set quantity of water;

-adding a pre-set amount of liquid soap dissolved in the set quantity of water, wherein the pre-set amount of the liquid soap dissolved is in a range of between 1.5 ml to 3 ml for every 1 gallon of the set quantity of water;

-adding a pre-set amount of Salicylic acid or gamma aminobutyric acid (GABA) dissolved in the set quantity of water, wherein the pre-set amount of the Salicylic acid dissolved is in a range of between 0.5 grams to 1.0 gram for every 1 gallon of the set quantity of water, and wherein the pre-set amount of the gamma aminobutyric acid (GABA) dissolved is in a range of between 0.3 grams to 0.9 grams for every 1 gallon of the set quantity of water;

-adding a pre-set amount of powdered giant knotweed (*Reynoutria sachalinensis*) dissolved in the set quantity of water, wherein the pre-set amount of the powdered giant knotweed dissolved is in a range of between 20 grams to 40 grams for every 1 gallon of the set quantity of water;

-adding a pre-set amount of Dimethylsulfoxide (DMSO) dissolved in the set quantity of water, wherein the pre-set amount of the Dimethylsulfoxide (DMSO) dissolved is in a range of between 1.9 ml to 38 ml for every 1 gallon of the set quantity of water; and

- (b) providing a second composition comprised through the steps of adding a quantity of Citric Acid or its hydrate and adding Disodium Hydrogen Phosphate (Na_2HPO_4) or one of its hydrates dissolved into water.
8. The method of claim 7, wherein the second composition comprises a quantity of Citric Acid or its hydrate, and further comprises Boric Acid and Trisodium Phosphate (Na_3PO_4) or its hydrate dissolved into water.
9. The method of claim 7 or 8, wherein the second composition is thereafter applied at selected intervals.
10. The method of claim 9, wherein the second composition is applied by spraying.