

least 20% of the total % of compounds of the composition are tannins and/or condensed tannins

10. The method of claim **1**, wherein the improvement in stress reduction comprises improved agronomical recovery of the plant after said stress is reduced or discontinued as compared to a similar plant species not treated with said composition of matter.

11. The method of claim **11**, wherein the stress is drought.

12. The method of claim **11**, wherein the stress is exposure to saline water.

13. A method of regulating at least one gene of a plant species, the method comprising

contacting a part of a plant or the locus thereof with a composition of matter, the composition of matter comprising an agriculturally acceptable complex mixture of dissolved organic material characterized by natural organic matter that is partially humified;

wherein the at least one gene regulates plant function associated with growth, defense, metabolism, or ion transport.

14. The method of claim **13**, wherein the at least one gene regulates at least one plant gene selected from genes encoding transcription factors, genes encoding enzymes, protein kinases or hydrolases.

15. The method of claim **13**, wherein said composition of matter comprises two or more of:

a. a mixture of condensed hydrocarbons, lignins, and tannins and/or condensed tannins;

b. a oxygen-to-carbon ratio for the dissolved organic matter of greater than about 0.5;

c. a total number of tannin compounds greater than about 200, the tannin compounds having a hydrogen to carbon ration of about 0.5 to about 1.4, and an aromaticity index of less than about 0.7 as measured by mass spectroscopy; or

d. a mass distribution of about 55-60% lignin compounds, 27-35% tannin compounds, and about 8-15% condensed hydrocarbon as measured by mass spectroscopy.

16. The method of claim **13**, wherein the composition of matter comprises a mixture of condensed hydrocarbons, lignins, and tannins and/or condensed tannins, wherein at least 10% of the total % of compounds of the composition are tannins and/or condensed tannins

17. The method of claim **13**, wherein the composition of matter comprises a mixture of condensed hydrocarbons, lignins, and tannins and/or condensed tannins, wherein at least 20% of the total % of compounds of the composition are tannins and/or condensed tannins

18. The method of claim **13**, wherein the at least one gene regulated provides improved agronomical recovery of the plant after an environmental stress is reduced or discontinued as compared to a similar plant species not treated with said composition of matter.

19. The method of claim **18**, wherein the environmental stress is drought.

20. The method of claim **18**, wherein the environmental stress is exposure to saline water.

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