CLAIMS

What is claimed is:

1. A method for preparation of a myceliated cacao product, comprising:
   a) providing prepared cacao beans comprising the steps of:
      i. providing cacao beans;
      ii. sterilizing the prepared cacao beans;
   b) providing a prepared fungal component;
   c) inoculating the prepared cacao beans with the prepared fungal component; and
   d) culturing the prepared cacao beans and prepared fungal component to allow myceliation to prepare the myceliated cacao product.

2. The method of claim 1, wherein the method reduces the amount of at least one undesirable taste component.

3. The method of claim 2, wherein the undesirable taste component is 2-methoxy-3-isopropylpyrazine.

4. The method of claim 2, wherein the undesirable taste component is a methylxanthine.

5. The method of claim 5, wherein the step of providing prepared cacao beans further comprises hydrating the cacao beans.

6. The method of claim 5, wherein the cacao beans are hydrated to about a 60% moisture level or to about a 30% moisture level.

7. The method of claim 1, wherein the prepared fungal component is selected from the group consisting of *G. lucidum, H. erinaceus, T. versicolor, L. edodes, T. matsutake, F. velutipes, A. blazei, G. frondosa, P. nameko, L. officinalis, M. hortensis, M. angusticeps, A. auricula, T. fuciformis, I. obliquus, F. fomentarius, L. sulfureus, C. sinensis, T. melanosporum,* and combinations thereof.

8. The method of claim 7, wherein the prepared fungal component is *G. lucidum.*

9. The method of claim 8, wherein the prepared fungal component is *G. lucidum* strain 806.

10. The method of claim 7, wherein the prepared fungal component is *C. sinensis*.

11. The method of claim 7, wherein the prepared fungal component is *T. melanosporum*.

12. The method of claim 1, wherein the prepared fungal component is prepared by a method comprising screening a number of strains of fungi and selecting a strain having an enhanced ability to tolerate, grow on, metabolize or utilize cacao beans or other agricultural substrate.

13. The method of claim 12, wherein the selected strain is capable of enhanced removal of one or more undesirable taste components from the cacao beans or other agricultural substrate.

14. The method of claim 12, wherein the selected strain is capable of enhanced removal of caffeine from the cacao beans or other agricultural substrate.

15. The method of claim 1, wherein the prepared fungal component is prepared by a method comprising maintaining a strain of fungi on an undefined media comprising an aqueous cacao bean extract and an energy source.

16. The method of claim 15, wherein the prepared fungal component is prepared by a method comprising maintaining a strain of fungi on an undefined media comprising a methylxanthine or 2-methoxy-3-isopropylpyrazine and an energy source.

17. The method of claim 15 or 16, wherein the maintenance of the strain of fungi causes adaptation of the fungi resulting in enhancement of the fungi's ability to tolerate, grow on, metabolize or utilize cacao beans or other agricultural substrate.

18. The method of claim 1, wherein the culturing step is a fermentation step carried out under semi-anaerobic conditions.

19. The method of claim 1, wherein the culturing step is carried out for about 7 days.

20. The method of claim 1, wherein the myceliated product has a reduced level of at least one undesirable taste component and an increased level of at least one myceliation product, relative to the cacao beans or other agricultural substrate.

21. The method of claim 20, wherein the undesirable taste component is a methylxanthine or 2-methoxy-3-isopropylpyrazine.

22. The method of claim 20, wherein the myceliation product is a beta glucan, pyrazine, or polysaccharides.

23. A myceliated product prepared by the method of claim 1.

24. A method for reduction of the levels of undesirable taste components and for the increase of levels of myceliation products in cacao beans, comprising:
    a) providing prepared cacao beans comprising the steps of:
        i. providing cacao beans;
        ii. sterilizing the cacao beans to provide prepared cacao beans;
    b) providing a prepared fungal component;
    c) inoculating the prepared cacao beans with the prepared fungal component; and
    d) culturing the prepared cacao beans and prepared fungal component to allow myceliation to prepare the cacao beans having reduced levels of at least one undesirable taste component and increased levels of at least one myceliation product.

25. A cacao bean prepared by the method of claim 24.

26. A myceliated cacao product having reduced levels of undesirable taste components and increased levels of myceliation products relative to cacao beans.

27. The myceliated cacao product of claim 26, wherein the undesirable taste component is a methylxanthine or 2-methoxy-3-isopropylpyrazine.

28. The myceliated cacao product of claim 26, wherein the myceliation product is a beta glucan, pyrazines, or polysaccharides.

CLAIMS

What is claimed is:

1. A method for preparation of a myceliated cacao product, comprising:
   a) providing sterilized hydrated cacao beans comprising the steps of:
   b) providing a fungal component as a fungal liquid tissue culture;
   c) inoculating the prepared cacao beans with the prepared fungal component; and
   d) culturing the prepared cacao beans and prepared fungal component to prepare the myceliated cacao product, wherein the myceliated cacao product has reduced bitterness.

2. The method of claim 1, wherein the cacao beans are hydrated to about a 60% moisture level or to about a 30% moisture level.

3. The method of claim 1, wherein the fungal liquid tissue culture is selected from the group consisting of *G. lucidum, H. erinaceus, T. versicolor, L. edodes, T. matsutake, F. velutipes, A. blazei, G. frondosa, P. nameko, L. officinalis, M. hortensis, M. angusticeps, A. auricula, T. fuciformis, I. obliquus, F. fomentarius, L. sulfureus, C. sinensis, T. melanosporum,* and combinations thereof.

4. The method of claim 3, wherein the fungal liquid tissue culture is *G. lucidum*.

5. The method of claim 4, wherein the fungal liquid tissue culture is *G. lucidum* strain 806.

6. The method of claim 3, wherein the fungal liquid tissue culture is *C. sinensis*.

7. The method of claim 3, wherein the fungal liquid tissue culture is *T. melanosporum*.

8. The method of claim 1, wherein the culturing step is carried out for about 7 days.