WHAT IS CLAIMED IS:

1. An agriculture system comprising:

a growth chamber having one or more walls defining an interior portion of the growth chamber;

a tray disposed within the interior portion of the growth chamber, the tray configured to support growth media and one or more agriculture products; and

a light source configured to illuminate at least a part of the interior portion of the growth chamber with laser light.

2. The agriculture system of claim 1,

wherein the light source is disposed outside the growth chamber,

wherein at least one of the one or more walls includes at least one aperture configured to communicate the laser light from outside the growth chamber into the interior portion of the growth chamber, and

wherein the light source is configured to transmit the laser light into the interior portion of the growth chamber via one or more optical elements and the at least one aperture.

3. The agriculture system of claim 2, wherein the one or more optical elements comprise at least one of: an optical fiber, a dichroic mirror, a rotating optical chopper, a rotating optical chopper with a reflector, a beam splitter, a diffuser, a collimator, or free space.

4. The agriculture system of any of claims 1 to 3, wherein the light source is disposed within the growth chamber.

5. The agriculture system of any of claims 1 to 4, further comprising:

a diffuser suspended within the interior portion of the growth chamber and configured to scatter laser light.

6. The agriculture system of claim 5, further comprising:

a collimator disposed within the enclosed chamber and configured to convey laser light to the diffuser.

7. The agriculture system of any of claims 1 to 6, wherein the growth chamber includes a hatch facilitating removal of the tray from the interior portion of the growth chamber.

8. The agriculture system of any of claims 1 to 7, further comprising:

one or more additional trays disposed within the interior portion of the growth chamber; and

one or more optical elements configured to direct laser light received from the light source towards the tray and the one or more additional trays.

9. The agriculture system of any of claims 1 to 8, further comprising:

a computer configured to control wavelengths and intensity of laser light from the light source.

10. The agriculture system of any of claims 1 to 9, wherein the light source is configured to produce continuous wave laser light.

11. The agriculture system of claim 10, wherein the light source comprises at least one of: a diode-pumped solid-state laser, a gas laser, a dye laser, or a semiconductor diode laser.

12. The agriculture system of any of claims 1 to 11, wherein the light source is configured to produce pulsed laser light.

13. The agriculture system of claim 12, wherein the light source comprises at least one of: a Q-switched laser, a mode-locked laser, a continuous wave laser light source with an on-off stage modulated by a function generator, or a continuous wave laser light source with an injection current modulated by a driver circuit.

14. The agriculture system of any of claims 1 to 13, wherein the light source comprises a tunable laser light source.

15. The agriculture system of any of claims 1 to 14, wherein the light source comprises one or more semiconductor diode lasers arranged in a panel or a bulb.

16. The agriculture system of any of claims 1 to 15, wherein the light source is configured to emit laser light at one or more predetermined wavelengths.

17. The agriculture system of claim 16, wherein the one or more predetermined wavelengths include a wavelength within the range of 440 nm to 490 nm.

18. The agriculture system of claim 16, wherein the one or more predetermined wavelengths include a wavelength within the range of 650 nm to 680 nm.

19. The agriculture system of claim 16, wherein the one or more predetermined wavelengths include a wavelength less than or equal to 380 nm.

20. The agriculture system of claim 19, wherein the one or more predetermined wavelengths include a wavelength less than or equal to 300 nm.

21. The agriculture system of claim 20, wherein the one or more predetermined wavelengths include a wavelength between 220 nm and 300 nm.

22. The agriculture system of any of claims 1 to 21, wherein the light source is configured to generate laser light with a fluent within the range of 80 $\mu molm^{-2}s^{-1}$ to 400 $\mu molm^{-2}s^{-1}$.

23. The agriculture system of any of claims 1 to 22, wherein an inner wall lining of at least one wall of the growth chamber comprises at least one reflective material selected from the group consisting of SiO_2, Si_3N_4, aluminum, or chrome plating.

24. The agriculture system of any of claims 1 to 23, wherein an interior-facing portion of at least one wall of the growth chamber comprises at least one metallic material.

25. The agriculture system of any of claims 1 to 24, wherein an interior-facing portion of at least one wall of the growth chamber comprises at least one dielectric material.

26. The agriculture system of any of claims 1 to 25, wherein an upper portion of the enclosed chamber comprises a water condensation tower.

27. The agriculture system of any of claims 1 to 26, further comprising:

a heating and cooling system configured to regulate temperature within the growth chamber.

28. The agriculture system of claim 27, further comprising:

a thermometer to measure the temperature within the growth chamber,

wherein the agriculture system is configured for controlling the heating and cooling system in response to measurements received from the thermometer.

29. The agriculture system of claim 28, further comprising:

a computer configured to control the heating and cooling system based at least in part on measurements received from the thermometer.

30. The agriculture system of either of claims 28 or 29, further comprising:

an alarm configured to trigger in an instance in which the thermometer measures a temperature within the interior portion of the growth chamber that is outside a predetermined range.

31. The agriculture system of any of claims 1 to 30, further comprising:

a humidifier configured to regulate humidity within the growth chamber.

32. The agriculture system of claim 31, further comprising:

a humidity sensor to monitor the humidity within the growth chamber,

wherein the agriculture system is configured for controlling the humidifier in response to measurements received from the humidity sensor.

33. The agriculture system of claim 32, further comprising:

a computer configured to control the humidifier based at least in part on measurements received from the humidity sensor.

34. The agriculture system of either of claims 32 or 33, further comprising:

an alarm configured to trigger in an instance in which the humidity sensor measures a humidity within the interior portion of the growth chamber that is outside a predetermined range.

35. An agriculture system comprising:

a growth chamber having one or more walls defining an interior portion of the growth chamber, at least one of the one or more walls including at least one aperture configured to communicate artificial light from outside the growth chamber into the interior portion of the growth chamber; and

an artificial light source disposed outside the growth chamber; and

one or more optical elements configured to communicate artificial light from the artificial light source, via the at least one aperture, into the interior portion of the growth chamber.

36. The agriculture system of claim 35, wherein the one or more optical elements comprise at least one of: an optical fiber, a dichroic mirror, a rotating optical chopper, a rotating optical chopper with a reflector, a beam splitter, a diffuser, a collimator, or free space.

37. The agriculture system of either of claims 35 or 36, further comprising:

a diffuser suspended within the interior portion of the growth chamber and configured to scatter the artificial light.

38. The agriculture system of claim 37, further comprising:

a collimator disposed within the enclosed chamber and configured to convey the artificial light to the diffuser.

39. The agriculture system of any of claims 35 to 38, further comprising:

a tray disposed within the interior portion of the growth chamber, the tray configured to support growth media and one or more agriculture products.

40. The agriculture system of claim 39, wherein the growth chamber includes a hatch facilitating removal of the tray from the interior portion of the growth chamber.

41. The agriculture system of either of claims 39 or 40, further comprising:

one or more additional trays disposed within the interior portion of the growth chamber; and

one or more optical elements configured to direct the artificial light received from the artificial light source towards the tray and the one or more additional trays.

42. The agriculture system of any of claims 35 to 41, further comprising:

a computer configured to control wavelengths and intensity of the artificial light from the artificial light source.

43. The agriculture system of any of claims 35 to 42, wherein the artificial light source is configured to produce continuous wave laser light.

44. The agriculture system of claim 43, wherein the artificial light source comprises at least one of: a diode-pumped solid-state laser, a gas laser, a dye laser, or a semiconductor diode laser.

45. The agriculture system of any of claims 35 to 44, wherein the artificial light source is configured to produce pulsed laser light.

46. The agriculture system of claim 45, wherein the artificial light source comprises at least one of: a Q-switched laser, a mode-locked laser, a continuous wave laser light source with an on-off stage modulated by a function generator, or a continuous wave laser light source with an injection current modulated by a driver circuit.

47. The agriculture system of any of claims 35 to 46, wherein the artificial light source comprises a tunable laser light source.

48. The agriculture system of any of claims 35 to 47, wherein the artificial light source comprises one or more semiconductor diode lasers arranged in a panel or a bulb.

49. The agriculture system of any of claims 35 to 48, wherein the artificial light source is configured to emit laser light at one or more predetermined wavelengths.

50. The agriculture system of claim 49, wherein the one or more predetermined wavelengths include a wavelength within the range of 440 nm to 490 nm.

51. The agriculture system of claim 49, wherein the one or more predetermined wavelengths include a wavelength within the range of 650 nm to 680 nm.

52. The agriculture system of claim 49, wherein the one or more predetermined wavelengths include a wavelength less than or equal to 380 nm.

53. The agriculture system of claim 52, wherein the one or more predetermined wavelengths include a wavelength less than or equal to 300 nm.

54. The agriculture system of claim 53, wherein the one or more predetermined wavelengths include a wavelength between 220 nm and 300 nm.

55. The agriculture system of any of claims 35 to 54, wherein the artificial light source is configured to generate laser light with a fluent within the range of 80 $\mu molm^{-2}s^{-1}$ to 400 $\mu molm^{-2}s^{-1}$.

56. The agriculture system of any of claims 35 to 55, wherein an inner wall lining of at least one wall of the growth chamber comprises at least one reflective material selected from the group consisting of SiO_2, Si_3N_4, aluminum, or chrome plating.

57. The agriculture system of any of claims 35 to 56, wherein an interior-facing portion of at least one wall of the growth chamber comprises at least one metallic material.

58. The agriculture system of any of claims 35 to 57, wherein an interior-facing portion of at least one wall of the growth chamber comprises at least one dielectric material.

59. The agriculture system of any of claims 35 to 58, wherein an upper portion of the enclosed chamber comprises a water condensation tower.

60. The agriculture system of any of claims 35 to 59, further comprising:

a heating and cooling system configured to regulate temperature within the growth chamber.

61. The agriculture system of claim 60, further comprising:

a thermometer to measure the temperature within the growth chamber,

wherein the agriculture system is configured for controlling the heating and cooling system in response to measurements received from the thermometer.

62. The agriculture system of claim 61, further comprising:

a computer configured to control the heating and cooling system based at least in part on measurements received from the thermometer.

63. The agriculture system of either of claims 61 or 62, further comprising:

an alarm configured to trigger in an instance in which the thermometer measures a temperature within the interior portion of the growth chamber that is outside a predetermined range.

64. The agriculture system of any of claims 35 to 63, further comprising:
a humidifier configured to regulate humidity within the growth chamber.

65. The agriculture system of claim 64, further comprising:
a humidity sensor to monitor the humidity within the growth chamber,
wherein the agriculture system is configured for controlling the humidifier in response to measurements received from the humidity sensor.

66. The agriculture system of claim 65, further comprising:
a computer configured to control the humidifier based at least in part on measurements received from the humidity sensor.

67. The agriculture system of either of claims 65 or 66, further comprising:
an alarm configured to trigger in an instance in which the humidity sensor measures a humidity within the interior portion of the growth chamber that is outside a predetermined range.

68. A method for growing agriculture products in a growth chamber that has at least one aperture configured to communicate laser light from outside the growth chamber to an interior portion of the growth chamber, the method comprising:
generating visible laser light by a laser light source disposed outside the growth chamber; and
guiding the visible laser light through the at least one aperture to illuminate the interior portion of the growth chamber.

69. The method of claim 68, wherein the visible laser light includes laser light having a wavelength between 400 and 490 nm.

70. The method of either of claims 68 or 69, wherein the visible laser light includes laser light having a wavelength between 650 and 680 nm.

71. The method of any of claims 68 to 70, wherein the visible laser light has a fluent within the range of 80 $\mu molm^{-2}s^{-1}$ to 400 $\mu molm^{-2}s^{-1}$.

72. The method of any of claims 68 to 71, wherein the visible laser light comprises continuous wave laser light.

73. The method system of claim 72, wherein the light source comprises at least one of: a diode-pumped solid-state laser, a gas laser, a dye laser, or a semiconductor diode laser.

74. The method of any of claims 68 to 73, wherein the visible laser light comprises pulsed laser light.

75. The method of claim 74, wherein the light source comprises at least one of: a Q-switched laser, a mode-locked laser, a continuous wave laser light source with an on-off stage modulated by a function generator, or a continuous wave laser light source with an injection current modulated by a driver circuit.

76. The method of any of claims 68 to 75, further comprising tuning the visible laser light.

77. The method of claim 76, wherein the light source comprises one or more semiconductor diode lasers arranged in a panel or a bulb.

78. The method of any of claims 68 to 77, further comprising:
controlling generation of the visible laser light using a computer.

79. The method of any of claims 68 to 78, further comprising:
guiding the visible laser light through the at least one aperture by one or more optical elements.

80. The method of claim 79, wherein the one or more optical elements comprise at least one of: an optical fiber, a dichroic mirror, a rotating optical chopper, a rotating optical chopper with a reflector, a beam splitter, a diffuser, a collimator, or free space.

81. The method of any of claims 68 to 80, wherein visible laser light illuminates a tray disposed within the interior portion of the growth chamber, the tray configured to support growth media and one or more agriculture products.

82. The method of claim 81, further comprising:
guiding, by one or more optical elements disposed within the interior portion of the growth chamber, the visible laser light through the growth chamber to cause

illumination of one or more additional trays disposed within the interior portion of the growth chamber.

83. The method of any of claims 68 to 82, further comprising:

guiding the visible laser light towards a diffuser suspended within the interior portion of the growth chamber, wherein the diffuser is configured to scatter the visible laser light.

84. The method of claim 83, wherein the visible laser light is guided towards the diffuser by a collimator disposed within the enclosed chamber.

85. The method of any of claims 68 to 84, further comprising:

generating ultraviolet laser light by the light source; and

guiding the ultraviolet laser light through the at least one aperture to sterilize the interior portion of the growth chamber.

86. The method of claim 85, wherein the ultraviolet laser light is guided through the at least one aperture by one or more optical elements.

87. The method of claim 86, wherein the one or more optical elements comprise at least one of: an optical fiber, a dichroic mirror, a rotating optical chopper, a rotating optical chopper with a reflector, a beam splitter, a diffuser, a collimator, or free space.

88. The method of any of claims 85 to 87, wherein the ultraviolet laser light has a wavelength under 380 nm.

89. The method of claim 88, wherein the ultraviolet laser light has a wavelength below 300 nm.

90. The method of claim 89, wherein the ultraviolet laser light has a wavelength between 220 and 300 nm.

CLAIM

1. An agriculture system comprising:

a growth chamber having one or more walls defining an interior portion of the growth chamber;

a tray disposed within the interior portion of the growth chamber, the tray configured to support growth media and one or more agriculture products; and

a light source configured to produce pulsed laser light and to illuminate at least a part of the interior portion of the growth chamber with pulsed laser light produced by the light source at a pulsing frequency selected based on photoreceptor qualities of the one or more agriculture products.

2. The agriculture system of claim 1,

wherein the light source is disposed outside the growth chamber,

wherein at least one of the one or more walls includes at least one aperture configured to communicate the pulsed laser light from outside the growth chamber into the interior portion of the growth chamber, and

wherein the light source is configured to transmit the pulsed laser light into the interior portion of the growth chamber via one or more optical elements and the at least one aperture.

3. The agriculture system of either of claims 1 or 2, further comprising:

a diffuser suspended within the interior portion of the growth chamber and configured to scatter the pulsed laser light; and

a collimator disposed within the enclosed chamber and configured to convey the pulsed laser light to the diffuser.

4. The agriculture system of any of claims 1, 2, or 3, further comprising:

one or more additional trays disposed within the interior portion of the growth chamber; and

one or more optical elements configured to direct the pulsed laser light received from the light source towards the tray and the one or more additional trays.

5. The agriculture system of any of claims 1, 2, 3, or 4, further comprising:

a computer configured to control wavelengths and intensity of the pulsed laser light from the light source.

6. The agriculture system of any of claims 1, 2, 3, 4 or 5, wherein the light source is further configured to produce continuous wave laser light that is converted into the pulsed laser light.

7. The agriculture system of claim 10, wherein the light source comprises at least one of: a diode-pumped solid-state laser, a gas laser, a dye laser, or a semiconductor diode laser.

8. The agriculture system of any of claims 1, 2, 3, 4, 5 or 6, wherein the light source comprises at least one of: a Q-switched laser, a mode-locked laser, a continuous wave laser light source with an on-off stage modulated by a function generator, or a continuous wave laser light source with an injection current modulated by a driver circuit.

9. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, or 8, wherein the light source comprises a tunable laser light source.

10. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein the light source comprises one or more semiconductor diode lasers arranged in a panel or a bulb.

11. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, wherein the light source is configured to emit the pulsed laser light at one or more predetermined wavelengths, and wherein the one or more predetermined wavelengths include:

a wavelength within the range of 440 nm to 490 nm;

a wavelength within the range of 650 nm to 680 nm

a wavelength less than or equal to 380 nm;

a wavelength less than or equal to 300 nm;

a wavelength less than or equal to 300 nm; or

a wavelength between 220 nm and 300 nm.

12. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or 11, wherein the light source is configured to generate the pulsed laser light with a fluent within the range of 80 $\mu molm^{-2}s^{-1}$ to 400 $\mu molm^{-2}s^{-1}$.

13. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12, wherein an inner wall lining of at least one wall of the growth chamber comprises:

at least one reflective material selected from the group consisting of SiO_2, Si_3N_4, aluminum, or chrome plating;

at least one metallic material;

at least one dielectric material; or

a combination thereof.

14. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or 13, wherein an upper portion of the enclosed chamber comprises a water condensation tower.

15. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14, further comprising:

a heating and cooling system configured to regulate temperature within the growth chamber.

16. The agriculture system of any of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, or 15, further comprising:

a humidifier configured to regulate humidity within the growth chamber.

17. An agriculture system comprising:

a growth chamber having one or more walls defining an interior portion of the growth chamber, at least one of the one or more walls including at least one aperture configured to communicate artificial light from outside the growth chamber into the interior portion of the growth chamber; and

an artificial light source disposed outside the growth chamber and configured to produce pulsed laser light at a pulsing frequency selected based on photoreceptor qualities of one or more agriculture products; and

one or more optical elements configured to communicate the pulsed laser light from the artificial light source, via the at least one aperture, into the interior portion of the growth chamber.

18. A method for growing agriculture products in a growth chamber that has at least one aperture configured to communicate laser light from outside the growth chamber to an interior portion of the growth chamber, the method comprising:

generating, by a laser light source disposed outside the growth chamber, pulsed visible laser light at a pulsing frequency selected based on photoreceptor qualities of one or more agriculture products; and

guiding the pulsed visible laser light through the at least one aperture to illuminate the interior portion of the growth chamber.

19. The method of claim 18, further comprising:

generating ultraviolet laser light by the light source; and

guiding the ultraviolet laser light through the at least one aperture to sterilize the interior portion of the growth chamber.

20. The method of claim 19, wherein the ultraviolet laser light has a wavelength between 220 and 300 nm.