deposition rate over the incubation time period of less than or equal to about 3 microliter/cm^2/hour.

In some other general aspects, the present disclosure provides: a method of making an edible appressed mycelium, including: providing a growth matrix containing a substrate and a fungal inoculum, wherein the fungal inoculum contains a fungus; incubating the growth matrix as a solid-state culture in a growth environment for an incubation time period; provided that the growth environment excludes mist; thereby producing extra-particle appressed mycelial growth from the growth matrix.

In another aspect, the present disclosure provides a system for growing an edible aerial mycelium, comprising: a growth matrix comprising a substrate and a fungal inoculum, wherein the fungal inoculum comprises a fungus; a growth environment configured to incubate the growth matrix as a solid-state culture for an incubation time period; a misting apparatus; and an atmospheric control system with an electronic controller configured to maintain a carbon dioxide (CO_2) level within the growth environment between at least about 0.02% (v/v) and less than about 8% (v/v) and to introduce aqueous mist into the growth environment with the misting apparatus throughout the incubation time period, or a portion thereof, at a mist deposition rate and a mean mist deposition rate, wherein the mist deposition rate is less than or equal to about 150 microliter/cm^2/hour, and the mean mist deposition rate is less than or equal to about 3 microliter/cm^2/hour.

For purposes of summarizing the invention and the advantages achieved over the prior art, certain objects and advantages of the invention have been described herein. Of course, it is to be understood that not necessarily all such objects or advantages may be achieved in accordance with any particular embodiment of the invention. Thus, for example, those skilled in the art will recognize that the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other objects or advantages as may be taught or suggested herein.

BRIEF DESCRIPTION OF THE DRAWINGS

The features and advantages of the methods and compositions described herein will become more fully apparent from the following description and appended claims, taken in conjunction with the accompanying drawings. These drawings depict only several embodiments in accordance with the disclosure and are not to be considered limiting of its scope. In the drawings, similar reference numbers or symbols typically identify similar

components, unless context dictates otherwise. In some instances, the drawings may not be drawn to scale.

FIG. 1 illustrates an embodiment of positive gravitropic growth.

FIG. 2 illustrates an embodiment of negative gravitropic growth.

FIG. 3 illustrates an embodiment of horizontal airflow.

FIG. 4 shows an image of an extra-particle aerial mycelium and growth matrix in a Pyrex dish (top, top view; bottom, side view) after removal from a growth chamber, according to Example 4.

FIG. 5 shows an image of an extra-particle aerial mycelium and growth matrix in a Pyrex dish (top, top view; bottom, side view) after removal from a growth chamber, according to Example 5.