CLAIMS

1. An edible and 3D printable plant-based ink composition for consumption by dysphagic patients, the editable and 3D printable plant-based ink composition comprising:

a vegetable puree and/or a fruit puree, wherein the vegetable puree and/or the fruit puree are not freeze-dried, and contain no hydrocolloid, or one or more hydrocolloids selected from the group consisting of xanthan gum, kappa carrageenan, and locust bean gum,

wherein the vegetable puree is obtainable from vegetable selected from the group consisting of starchy vegetable, root vegetable and leafy vegetable, and the amounts of hydrocolloids present in the vegetable puree and/or fruit puree are dependent on the type of vegetable and/or fruit selected, based on the water and starch content in the vegetable and/or fruit, wherein

the composition comprises no additives, such as hydrocolloids, when the vegetable puree is obtained from the starchy vegetable;

the composition comprises one or two hydrocolloids when the vegetable puree is obtained from the root vegetable; or

the composition comprises two or more hydrocolloids when the vegetable puree is obtained from the leafy vegetable, and

wherein each of the one or more hydrocolloids is present in an amount of 2 wt% or less based on the vegetable puree and/or the fruit puree.

2. The edible and 3D printable plant-based ink composition of claim 1, wherein the vegetable puree comprises pea with no hydrocolloid.

3. The edible and 3D printable plant-based ink composition of claim 1, wherein the vegetable puree comprises carrot; and

the one or two hydrocolloids comprise xanthan gum and/or kappa carrageenan.

4. The edible and 3D printable plant-based ink composition of claim 3, wherein the xanthan gum and the kappa carrageenan are respectively present in an amount of 0.3 to 0.7 wt% based on the vegetable puree.

5. The edible and 3D printable plant-based ink composition of claim 1, wherein
the vegetable puree comprises bok choy; and
the two or more hydrocolloids comprise xanthan gum and locust bean gum.

6. The edible and 3D printable plant-based ink composition of claim 5, wherein the xanthan gum and the locust bean gum are respectively present in an amount of 0.5 to 2 wt% based on the vegetable puree.

7. A method of forming the edible and 3D printable plant-based ink composition of any one of claims 1 to 6, the method comprising:
providing a puree of a vegetable and/or a fruit;
sieving the puree to remove any solid particles which blocks a nozzle of a 3D printer; and
cooling the puree to room temperature for 3D printing.

8. The method of claim 7, wherein providing the puree comprises:
boiling or steaming the vegetable and/or the fruit; and
blending the vegetable and/or the fruit after the boiling or the steaming to form the puree.

9. The method of claim 7 or 8, further comprising mixing the puree with one or more hydrocolloids to obtain a mixture.

10. The method of claim 9, wherein the one or more hydrocolloids comprise more than one hydrocolloid.

11. The method of claim 10, further comprising dry mixing of the more than one hydrocolloid prior to mixing with the puree.

12. The method of any one of claims 9 to 11, wherein the one or more hydrocolloids are selected from the group consisting of xanthan gum, kappa carrageenan, and locust bean gum.

13. The method of any one of claims 9 to 12, further comprising incubating the mixture comprising the puree and the one or more hydrocolloids at:

a temperature of 70 to 75°C, wherein the one or more hydrocolloids comprise kappa carrageenan; or

a temperature of 90 to 95°C, wherein the one or more hydrocolloids comprise locust bean gum.