

**CLAIMS**

1. A device for promoting the growth of plants (8), the device comprising a conveyor belt (2) which can be moved along a conveyor path (1) and is intended for transporting, at least in sections, plants (8) which are at least temporarily supplied with nutrients by a nutrient supply (9) and irradiated with natural light, and/or light artificially generated by an illumination unit, (10) during movement along the conveyor path (1), the conveyor path (1) being at least approximately horizontal in at least one first section (7), and being at least approximately vertical in at least one second section (6), characterized in that:

the conveyor belt (2) is moved along a closed circular or oval path such that a deflection occurs in the region of an upper deflection point (4) and in the region of a lower deflection point (5), which interconnect the vertical sections (6);

the plants (8) are conveyed continuously along the closed circular or oval path;

the plants (8) are at least temporarily fixed relative to the conveyor belt (2) during transport along the conveyor path (1), such that the orientation of the plants (8) relative to the direction of gravity changes as the plants are conveyed continuously along the circular or oval path;

the device comprises a nutrient supply (9) located in the region (19) below the lower surface of the conveyor belt (2);

at least parts of roots of the plants (8) protrude freely into the region (19) located below a lower surface of the conveyor belt (2), such that the roots are aeroponically supplied with nutrient medium from the nutrient supply (9); and

at least parts of leaves and/or fruits of the plants (8) protrude into a region (20) located above an upper surface of the conveyor belt which opposes the lower surface.

2. A device according to Claim 1, characterized in that the nutrient supply (9) comprises a supply unit (9) for misting a nutrient medium and/or discharging the nutrient medium towards the lower surface of the conveyor belt.

3. A device according to Claim 1 or 2, characterized in that the conveyor belt (2) comprises, at least in regions, a carrier material (18) in which the plants (8) are fixed at least temporarily during transport along the conveyor path (1).

4. A device according to Claim 1, 2 or 3, characterized in that an at least partly automated fitting unit (12) is provided, which fits the conveyor belt (2) with plant seeds and/or seedlings (8).
5. A device according to any preceding claim, characterized in that at least one section (11) that is illuminated by the illumination unit (10) and one section that is not illuminated are arranged along the conveyor path (1).
6. A device according to any preceding claim, characterized in that the conveyor belt (2) comprises a plurality of movably interconnected slats.
7. A device according to any preceding claim, characterized in that the nutrient supply (9) has at least one immersion bath (9b) containing nutrient solution, at least roots of the plants (8) being guided through the immersion path at least in sections along the conveyor path (1).
8. A device according to any preceding claim, characterized in that an adjustment unit (21) is provided to change a length of the vertically arranged sections (6).
9. A device according to any preceding claim, characterized in that an at least partly automated harvesting unit (13) is provided, which removes plants (8) from the conveyor belt (2) at least in part.
10. A device according to any preceding claim, characterized in that a cleaning and/or sterilization unit (14) for cleaning and/or sterilizing the conveyor belt (2) is arranged in a region of the conveyor path (1) located between a region in which the plants are removed from the conveyor belt (2) at least in part and a region in which plant seeds and/or seedlings (8) are fixed on the conveyor belt (2).
11. A device according to any preceding claim, characterized in that the conveyor belt (1) moved along the conveyor path (1) circulates in an oval having two vertical path sections (6) and, in the region of the upper deflection point (4) and in the region of the lower deflection point (5), horizontal path sections (7), the horizontal path sections (7) being comparatively short and being limited to each reversal region of the conveyor belt (2).
12. A device according to any preceding claim, characterized in that the conveyor belt (2) moved along the conveyor path (1) is moved on a closed oval track such that there are

provided two vertical sections and, in the region of both an upper and lower deflection point (4, 5), horizontal sections (7) that interconnect the vertical sections (6), a height of a plant growing system being able to be set at least practically at any height by changing a length of the vertical sections (6) of the conveyor belt (2).

5 13. Use of a device according to any preceding claim for growing strawberries, lettuce, spinach, rocket and/or bush tomatoes.

14. A method for promoting the growth of plants (8), in which the plants (8) are moved along a conveyor path (1) by a conveyor belt (2) and are at least temporarily supplied with nutrients by a nutrient supply (9) and irradiated with natural light, and/or light artificially  
 10 generated by an illumination unit (10), during movement along the conveyor path (1), the plants (8) being moved at least approximately horizontally in at least one first section (7) of the conveyor path (1) and at least approximately vertically in at least one second section (6) of the conveyor path (1), characterized in that the conveyor belt (2) moved along the conveyor path (1) is moved on a closed circular or oval path and is deflected in in the region of an upper  
 15 deflection point (4) and in the region of a lower deflection point (5), the plants (8) being at least temporarily fixed relative to the conveyor belt (2) during transport along the conveyor path (1) such that at least parts of roots of the plants (8) protrude into a region (19) located below a lower surface of the conveyor belt, while at least parts of leaves and/or fruits of the plants protrude into a region (20) located above an upper surface of the conveyor belt which  
 20 opposes the lower surface.

15. A method according to Claim 14, characterized in that while being moved at least approximately vertically, the plants (8) are at least temporarily aeroponically supplied with water and/or nutrients.

16. A method according to Claim 14 or 15, characterized in that the length of the vertical  
 25 sections (6) of the conveyor belt (2) is changed.

17. A method according to Claim 14, 15 or 16, characterized in that the entire conveyor path (1) is at least temporarily illuminated.

18. A method according to any of Claims 14 to 17, characterized in that the conveyor belt (2) is moved along the conveyor path (1) in an oval having two vertical path sections (6) and,

in region of the upper deflection point (4) and in the region of the lower deflection point (5), horizontal path sections (7), the horizontal path sections (7) being comparatively short and being limited to each reversal region of the conveyor belt (2).

19. A method according to any of Claims 14 to 18, characterized in that the conveyor belt  
5 (2) is moved along the conveyor path (1) on a closed oval track such that there are provided two vertical sections and, in the region of both an upper and lower deflection point (4, 5), horizontal sections (7) that interconnect the vertical sections (6), a height of a plant growing system being able to be set at least practically at any height by changing a length of the vertical sections (6) of the conveyor belt (2).