Claims

1. Leavening apparatus for leavening dough pieces (6) comprising a leavening chamber (3) for receiving dough pieces (6) to be leavened and with a climate control module (4) for controlling the climate in the leavening chamber (3) for the leavening process, wherein the leavening apparatus is configured for a control device (18) for controlling the leavening process on the basis of climatic data detected in the leavening chamber (3) to be assigned to the climate control module (4), wherein the climate control module (4) comprises a device (15) for generating an air stream as well as a device (15) for generating water aerosol to be entrained by the air stream and wherein the leavening chamber (3) comprises an upper inlet (8) for the climate control media 'air' and 'moisture' provided by the climate control module (4) and a lower outlet (11), the opening width of which is adjustable, and via which inlet (8) an air stream generated by the climate control module (4) is introduced into the leavening chamber (3) during operation of the leavening apparatus (1, 1.1) for leavening dough pieces (6), wherein the leavening apparatus is configured for the air stream to flow from the outlet (11) of the leavening chamber (3) and wherein the leavening chamber (3) has one each of a temperature sensor, a moisture sensor and a CO_2 sensor, wherein the sensors (7) are configured to transmit the detected climatic data to the control device (18).

2. Leavening apparatus according to claim 1, **characterized in that** an electric actuator controllable by the control device (18) is provided for adjusting the opening width of the outlet (11).

3. Leavening apparatus according to claim 1 or 2, **characterized in that** the climate control module (4) is part of the leavening apparatus (1, 1.1) and the leavening

apparatus is arranged for the climate control module to be disposed above the leavening chamber (3).

4. Leavening apparatus according to claim 1 or 2, **characterized in that** the climate control module is a module that is separate from the leavening chamber to which the leavening chamber can be connected at least with its inlet.

5. Leavening apparatus according to one of claims 1 to 4, **characterized in that** the climate control module (4) comprises a temperature control device (15) for controlling the temperature of the air stream generated during operation of the leavening apparatus (1, 1.1) and introduced into the leavening chamber (3).

6. Leavening apparatus according to one of claims 1 to 5, **characterized in that** the device (16) for generating aerosol comprises means for generating aerosol having at least one additive.

7. Leavening apparatus according to one of claims 1 to 6, **characterized in that** the leavening apparatus (1.1) comprises two fans (13, 13.1) and configured for one fan to be attached to the climate control module (4) and a further fan to be attached to the outlet (11).

8. Leavening apparatus according to one of claims 1 to 7, **characterized in that** the leavening apparatus is configured for an O_2 sensor adapted to transmit data to the control device (18) is arranged in the leavening chamber (3).

9. Method for controlling the climate in the leavening chamber (3) of a leavening apparatus (1, 1.1) for leavening dough pieces (6) in the leavening chamber (3), in particular for operating a leavening apparatus (1, 1.1) according to one of claims 1 to 8, **characterized in that**

a) climatic data influencing the leavening process are detected in the leavening chamber during the leavening process, wherein the variables temperature, absolute water content and the CO_2 content are detected as

climatic ACTUAL values and are compared with the TARGET values for the leavening dough pieces, and

b) when a deviation between an ACTUAL value and the associated TARGET value is found, the climate in the leavening chamber is influenced to adjust the ACTUAL value to the TARGET value and, to influence the same, an air stream is introduced into the leavening chamber via an upper inlet and passed through the leavening chamber and

   (i) an influence is exerted with respect to an adjustment of the ACTUAL temperature to the TARGET temperature by the introduced air volume and/or the temperature of the introduced air volume,

   (ii) an influence is exerted with respect to an adjustment of the absolute ACTUAL water content to the absolute TARGET water content by a corresponding water aerosol concentration of the air stream and

   (iii) an influence is exerted on the adjustment of the CO_2 ACTUAL value to the TARGET value by a change to the volume flow of the air stream flowing through the leavening chamber.

10. Method according to claim 9, **characterized in that** the volume flow is adjusted by changing the opening width of the outlet (11) of the leavening chamber (3)

11. Method according to claims 9 and 10, **characterized in that** the aerosol to be entrained into the leavening chamber (3) by the air stream comprises at least one additive.

12. Method according to claim 11, **characterized in that** the additive is O_2 and/or ascorbic acid.

13. Method according to one of claims 9 to 12, characterized in that additionally the air pressure in the leavening chamber (3) is detected as an ACTUAL value and influence is exercised by the air volume introduced into the leavening chamber (3) to adjust the ACTUAL value to the TARGET value.

14. Method according to one of claims 9 to 13, **characterized in that** climatic data outside the leavening chamber (3) that influence the dough pieces (6) in the leavening chamber (3) are detected, wherein at least one of the climatic variables temperature, absolute water content and air pressure is detected as ACTUAL external values and compared with the respective TARGET value as well as the difference between the TARGET value and the ACTUAL value detected in the leavening chamber (3) and that when a deviation is found between an ACTUAL value detected outside the leavening chamber (3) and the TARGET value the climate in the leavening chamber (3) is adjusted to the changing setpoint depending on the reaction inertness, whether and to what extent a change of the ACTUAL external value leads to a change of the ACTUAL value inside the leavening chamber (3).

15. Method according to claim 14, **characterized in that** the data detected outside the leavening chamber (3) is data from the external environment of the building in which the leavening chamber (3) is located.

16. Method according to claim 14 or 15, **characterized in that** climatic forecasts which are included in the adjustment of the conditioning in addition to the value(s) detected outside the leavening chamber (3) are included in the adjustment of the conditioning process.

17. Method according to one of claims 9 to 16, **characterized in that** the generated air stream flows through the leavening chamber (3) in the vertical direction.