

The invention relates to a method for improving the filling ability of tobacco, such as cut tobacco leaves, or ribs, or plant tobacco additives with a cell structure, whereby the tobacco material, with an initial water content of 8 to 16 wt %, is treated with a gas, comprising nitrogen and/or argon at pressures from 50 to 1000 bar, either in an autoclave, or in a cascade-like series or several autoclaves and, finally, after completion of a decompression, a thermal after-treatment. The invention is characterised in that the decompression is carried out with at least one holding stage, the pressure of which corresponds to 3 to 60 %, preferably, 3 to 30 % of the original maximum pressure and that the heating of the system under residual pressure is carried out, such that the temperature of the tobacco on withdrawal after the complete release of pressure is in the range 10 to 80°C. The elevation of temperature of the system under residual pressure is effected by a holding stage, a circulation over a heat exchanger and/or passing hot gas over the system, whereby the release of pressure from the maximum pressure to the pressure of the holding stage occurs over a period of 20 seconds to 5 minutes and the release of the residual pressure occurs over a period of 3 seconds to 3 minutes.