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PROCESS FOR TREATING TOBACCO

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This invention relates to improvements in processes for treating tobacco and it has for its object certain improvements designed more particularly for use in processes forming the subject of American Letters Patent No. 2,149,179 according to which the fermentation of tobacco is effected by inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco and conducting the fermentation thereof in an oxygen-free environment.

According to the present invention the tobacco, prior to being treated according to the process above referred to, is subjected to a sterilizing treatment.

For carrying out the process according to the patent before referred to, the restriction or even suppression of part or of all of the flora which has settled upon the tobacco prior to its fermentation and which originates partly from the soil and partly from the contact with the hands or with foreign objects, is desirable (it may be desirable even beyond the effect of the process described).

A suitable choice of the atmosphere with which the tobacco is kept in contact permits in general the suppression of a part of, or eventually, of the whole flora grown on tobacco. This is due to the fact that the microorganisms are deeply affected by the atmosphere and that their vitality depends on the atmosphere in which they live. Apart from the fact that there exist so-called "obligate aerobia," "obligate anaerobia" and "facultative aerobia and anaerobia," even bacterial flora, though spore-forming species may be concerned with, may be "lulled to sleep" by "narcotic atmospheres," such as ether, chloroform and the like media, that is to say be restrained in their vitality for a length of time sufficient for a varied fermentation. Such restraints, however, may also be obtained according to the process of the invention by means of atmospheres which are not "narcotic atmospheres." For example, the storing of the tobacco in a pure N₂-atmosphere has the effect of favouring the growth of a flora different from that obtained by the storage of the tobacco in a pure CO₂-atmosphere. For the subsequent use of that part of the process disclosed and claimed by the aforesaid patent which provides a vaccination with "noble flora" a storing of the tobacco in a pure or high percentage O₂-atmosphere is of particular advantage, as such atmosphere results in the suppression of the anaerobic "wild" flora, so that, on account of the suppression of the aerobic flora during the fermentation with the exclusion of

oxygen, the inoculated "noble flora" may completely develop.

The following example may illustrate the use of the process according to the invention:

5 The unfermented tobacco supplied by the farmer in a roof-mature condition is secluded from the outer atmosphere and stored in oxygen. After a certain lapse of time, say three days, the tobacco is fermented in the manner described
10 by the specification of the aforesaid patent.

The sterilization process according to the present invention is of equal importance for the storage of tobaccos which have already undergone fermentation or which have already been worked
15 up, for it is a fact which can be repeatedly observed, that tobaccos are, after fermentation, attacked by undesirable flora. Also in such a case the partial sterilization according to the present invention will be a remedy. In this respect the process of the invention also includes a
20 storing of the completely fermented or worked-up tobacco in a CO₂-atmosphere at a non-increased temperature. This storage in a suitable atmosphere chosen according to the conditions of the
25 individual case and with a non-increased temperature results, according to the new process, in a partial sterilization which in combination with the previous fermentation according to the process of the aforesaid American patent may be necessary or at least desirable. Example: After having
30 completed its fermentation or having been worked-up the tobacco is put at ordinary temperature into a CO₂-atmosphere which quells the obligate aerobia and restrains also the vitality of
35 the tobacco-anaerobia which are thermo-bacteria.

The process according to the present invention also permits refermenting already fermented tobacco, no matter whether the preceding fermentation has been a "machine fermentation," that is to say a mere drying operation, or whether it has been a real fermentation, that is to say a bulk fermentation with admission of the atmospheric air, or a fermentation with exclusion of
40 free oxygen.

The operation is then the same as in the case of a first fermentation: Placing the tobacco to be fermented for a suitable length of time (for example three days) into a suitable atmosphere (for example CO₂), thereafter fermentation according to the process of American Patent No. 2,149,179.

I claim:

1. Process of treating tobacco in which the tobacco, as received from the grower, is stored
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for three days in a substantially pure oxygen, then fermented by inoculating it with suitable cultured microorganisms, removing all air from the tobacco and conducting the fermentation in an oxygen-free environment at a non-increased temperature.

2. A process of treating tobacco which comprises sterilizing the tobacco by storing it with the exclusion of atmospheric air, then inoculating the tobacco with suitable culture microorganisms, removing all air from the tobacco and then conducting the fermentation thereof in an oxygen-free environment.

3. A process of treating tobacco which comprises sterilizing the tobacco by storing it in a substantially pure oxygen, then inoculating the tobacco with suitable culture microorganisms, removing all air from the tobacco and then conducting the fermentation thereof in an oxygen-free environment.

4. A process of treating tobacco which comprises inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation thereof in an oxygen-free environment and then storing said tobacco with the exclusion of atmospheric air.

5. A process of treating tobacco which comprises inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation thereof in an oxygen-free environment and then storing said tobacco in a substantially pure oxygen.

6. The process of treating tobacco which comprises inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation thereof in an oxygen-free environment, then working-up said tobacco and then storing said tobacco with the exclusion of atmospheric air.

7. The process of treating tobacco which comprises inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation thereof in an oxygen-free environment, then working-up said tobacco and then storing said tobacco in oxygen.

8. A process of treating tobacco which comprises sterilizing the tobacco by storing it with the exclusion of atmospheric air, inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation of the tobacco in an oxygen-free environment and then again storing said tobacco with the exclusion of atmospheric air.

9. A process of treating tobacco which comprises sterilizing the tobacco by storing it in

oxygen, inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation of the tobacco in an oxygen-free environment and then again storing said tobacco in a substantially pure oxygen.

10. A process of treating tobacco which comprises sterilizing the tobacco by storing it in oxygen, inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation of the tobacco in an oxygen-free environment and then again storing said tobacco in a substantially pure oxygen and then working-up said tobacco.

11. A process of treating tobacco which comprises sterilizing said tobacco by storing said tobacco in oxygen, then inoculating the tobacco with suitable cultured microorganisms, removing all air from the tobacco, conducting the fermentation thereof in an oxygen-free environment, then working-up said tobacco and then storing said tobacco for a time in oxygen.

12. A process for the treatment of tobacco particularly the pretreatment of tobacco in which said tobacco is inoculated for fermentation with a particular flora which comprises storing said tobacco in a substantially pure oxygen atmosphere for sterilizing said tobacco before the fermentation of said tobacco.

13. A process for the treatment of tobacco particularly the pretreatment of tobacco in which said tobacco is inoculated for fermentation with a particular flora which comprises storing said tobacco in a substantially pure oxygen atmosphere for sterilizing said tobacco after the fermentation of said tobacco.

14. A process for the treatment of tobacco particularly the pretreatment of tobacco in which said tobacco is inoculated for fermentation with a particular flora which comprises storing said tobacco in a substantially pure oxygen atmosphere for sterilizing said tobacco in an intermediate stage of treatment of said tobacco.

15. A process as set forth in claim 12, in which said tobacco is subjected to a sterilization after completion of the first fermentation and is then re fermented.

16. A process as set forth in claim 13, in which said tobacco is subjected to a sterilization after completion of the first fermentation and is then re fermented.

17. A process as set forth in claim 14, in which said tobacco is subjected to a sterilization after completion of the first fermentation and is then re fermented.

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