**Authors’ answers to Reviewer’s comments**

Reviewer comment No. 1:

„To analyze the efficiency of the separation of the three groups of compounds (MHs, OMs and SHs) relative to their total amount in the essential oil, all fractions were classified into three main fractions, and their mass balance regarding to these fractions was carried out, which is presented in Table 2.“ Please define exactly what the separation degree (the numbers given in Table 2) is. Does it mean that the amounts of MHs, OMs and SHs in the essential oil were determined, e.g. by multiplying their percentages from Table 1 by total yields, and then their amounts collected in the time intervals specified in Table 2 were divided by these total amounts? To check the balance, one would need also the data for intervals 10-20 min and 40-210 min in the case of hydrodistillation and 10-15 min and 45-195 min in the case of simultaneous hydrodistillation and rectification. Still, we can assume that the rate of distillation of MHs decreases monotonously or at least does not increase. Then, the distillation rate in the intervals which were not included in Table 2 would be maximally equal to the rate in the previous interval and minimally equal to that in the following interval. For the hydrodistillation we obtain that the sum of separation degrees was between 69.5 + 10.0 + 19.9 + 15.9 + 2.8 = 118.0% and 69.5 + 69.5 + 19.9 + 169.2 + 2.8 = 330.9%. The estimated minimum 118 > 100 % indicates that the data in the first half of Table 2 should be checked. (Also the estimates of minimum separation degrees for OMs and SHs, 158.7% and 159.3%, resp., are too high.) On the other hand, the data for the simultaneous hydrodistillation and rectification in Table 2 seem to fulfil the mass balance because for the MHs, for example, the minimum estimate is 89.5 + 0.35 + 2.1 + 2.2 + 1.3 = 95.4% and the maximum is 89.5 + 44.8 + 2.1 + 10.5 + 1.3 = 148.2%, and these estimates are satisfactory also for the other groups of terpenes.

Response to Reviewer comment No. 1:

We are grateful to the Reviewer for the observance that reveals a careless mistake we had made in the calculation of the separation degree for HD.We selected three of seven fractions collected during the two processes, as it can be seen in the following table\*:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Techniques | Fraction | Time interval (min) | MH | OM | SH |
| HD | I | 0-10 | 43,6 | 10,1 | 14,1 |
| II | 10-20 | 12,6 | 26,5 | 7,0 |
| III | 20-40 | 12,5 | 12,4 | 13,4 |
| IV | 40-80 | 11,3 | 15,2 | 18,6 |
| V | 80-150 | 10,3 | 15,9 | 22,0 |
| VI | 150-210 | 5,3 | 9,7 | 12,3 |
| VII | 210-300 | 4,4 | 10,2 | 12,6 |
| Total | 0-300 | 100,0 | 100,0 | 100,0 |
| SHDR | I | 0-10 | 89,5 | 47,4 | 10,0 |
| II | 10-15 | 0,9 | 22,9 | 9,0 |
| III | 15-45 | 2,1 | 10,3 | 26,3 |
| IV | 45-75 | 2,2 | 5,7 | 22,6 |
| V | 75-135 | 2,1 | 6,1 | 14,0 |
| VI | 135-195 | 1,9 | 5,0 | 13,0 |
| VII | 195-285 | 1,3 | 2,6 | 5,1 |
| Total | 0-285 | 100,0 | 100,0 | 100,0 |

\*The selected fractions are grey-colored.

We corrected partly Table 2 (the part corresponding to HD) and rewrote the corresponding discussion (page ). As it was explained in the original manuscript, the amount of a group of compounds present in a fraction was devided by the amount in the essential oil. Hence, the value 43.6% for MHs was obtained by deviding the mass of MHs in the first fraction (0-10 min) with the mass of the essentialk oil (i.e. mass of all seven fractions).

The corrected Table 2 is as follows (corrected values are red colored):

Table 2. Separation efficiency of the three groups of compounds in the individual fractions in relation to their total mass in the essential oil.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Method | Fraction | Time interval(min) | MHs(%) | OMs(%) | SHs(%) |
| HD | I | 0−10 | 43.6 | 10.1 | 14.1 |
| II | 20−40 | 12.5 | 12.4 | 13.4 |
| III | 210−300 | 4.4 | 10.2 | 12.6 |
| SHDR | I | 0−10 | 89.5 | 47.4 | 10.0 |
| II | 15−45 | 2.1 | 10.3 | 26.3 |
| III | 195−285 | 1.3 | 2.6 | 5.1 |

Reviewer comment No. 2:

Page 3: shrub or tree conical crown - shrub or tree with conical crown

Response to Reviewer comment No. 2:

Corrected as required.

Reviewer comment No. 3:

Page 3: *J.communis - J. communis*

Response to Reviewer comment No. 3:

Corrected as required.

Reviewer comment No. 4:

Page 4: are sabinenechemotype - are of sabinenechemotype

Response to Reviewer comment No. 4:

Corrected as required.

Reviewer comment No. 5:

Page 4: are α-pinene 1 chemotype – are of α-pinene 1 chemotype

Response to Reviewer comment No. 5:

Corrected as required.

Reviewer comment No. 6:

Page 4: grounded berries - ground berries

Response to Reviewer comment No. 6:

Corrected as required.

Reviewer comment No. 7:

Page 4: isolating the pure components - isolating pure components

Response to Reviewer comment No. 7:

Corrected as required.

Reviewer comment No. 8:

Page 5: grounded at the higher speed - ground at higher speed

Response to Reviewer comment No. 8:

Corrected as required.

Reviewer comment No. 9:

Page 5: grounded common juniper berries - ground common juniper berries

Response to Reviewer comment No. 9:

Corrected as required.

Reviewer comment No. 10:

Page 8: attached toHP-5 - attached to HP-5

Response to Reviewer comment No. 10:

Corrected as required.

Reviewer comment No. 11:

Page 8: ±1%.Carrier gas - ±1%. Carrier gas

Response to Reviewer comment No. 11:

Corrected as required.

Reviewer comment No. 12:

Page 8: obtained as result of - obtained as the result of

Response to Reviewer comment No. 12:

Corrected as required.

Reviewer comment No. 13:

Page 88: used as base - used as the basis

Response to Reviewer comment No. 13:

Corrected as required.

Reviewer comment No. 14:

Page 9: 1:30).The constituents - 1:30). The constituents

Response to Reviewer comment No. 14:

Corrected as required.

Reviewer comment No. 15:

Page 9: by theHD - by the HD

Response to Reviewer comment No. 15:

Corrected as required.

Reviewer comment No. 16:

Page 14: regarding to their chemical composition - regarding their chemical composition

Response to Reviewer comment No. 16:

Corrected as required.

Reviewer comment No. 17:

Page 14: stay constant - stays constant

Response to Reviewer comment No. 17:

Corrected as required.

Reviewer comment No. 18:

Page 16: SHDR (89.5%)is - SHDR (89.5%) is

Response to Reviewer comment No. 18:

Corrected as required.