

# Hemp Proficiency Testing

## Summary Statistics

### HM21NOV-2 (hemp)



Sample: HM21NOV-2 (hemp)

Summary Statistics

Issue Date: December 20, 2021

### By Analyte

| Analyte            | Code | Trueness (Lab Value) |    |           |      | Horwitz<br>%RSD | Precision (Lab RSDr) |      |      |
|--------------------|------|----------------------|----|-----------|------|-----------------|----------------------|------|------|
|                    |      | Rob Mean             | n  | Rob StDev | %RSD |                 | Rob Mean             | min  | max  |
| Δ9-THC (%AR)       | 001  | 0.2836               | 52 | 0.0313    | 11   | 4.82            | 3.36                 | 0.33 | 24.4 |
| Δ9-THCA (%AR)      | 002  | 0.0836               | 47 | 0.0141    | 16.9 | 5.79            | 4.24                 | 0    | 32.8 |
| CBD (%AR)          | 003  | 4.846                | 43 | 0.5026    | 10.4 | 3.15            | 2.99                 | 0.14 | 13.7 |
| CBDA (%AR)         | 004  | 5.6537               | 41 | 0.486     | 8.6  | 3.08            | 2.82                 | 0.09 | 16.5 |
| CBN (%AR)          | 005  | 0.0258               | 25 | 0.007     | 27   | 6.91            | 4.79                 | 0.56 | 14.4 |
| Total Δ9-THC (%AR) | 006  | 0.3629               | 60 | 0.0428    | 11.8 | 4.65            | 3.45                 | 0.31 | 25.9 |
| Total CBD (%AR)    | 007  | 9.8392               | 46 | 0.6799    | 6.91 | 2.83            | 2.51                 | 0.11 | 15.4 |
| CBDV (%AR)         | 008  | 0.0395               | 12 | 0.0175    | 44.3 | 6.48            | 5.38                 | 1.27 | 12.5 |
| CBG (%AR)          | 010  | 0.2244               | 24 | 0.0314    | 14   | 4.99            | 4.36                 | 0.1  | 20.8 |
| CBGA (%AR)         | 011  | 0.3577               | 23 | 0.0445    | 12.4 | 4.66            | 3.76                 | 0.26 | 12.9 |
| CBC (%AR)          | 014  | 0.2902               | 23 | 0.0185    | 6.38 | 4.8             | 2.37                 | 0.22 | 12   |
| Cd (ug/g AR)       | 101  | 0.1578               | 7  | 0.0128    | 8.11 | 20.96           | 2.5                  | 0.13 | 11   |
| Pb (ug/g AR)       | 104  | 0.28                 | 9  | 0.0178    | 6.37 | 19.23           | 6.59                 | 0.09 | 24.4 |

| Sample: HM21NOV-2 (hemp) |     | Summary Statistics |    |        |      |      | Issue Date: December 20, 2021 |      |      |
|--------------------------|-----|--------------------|----|--------|------|------|-------------------------------|------|------|
| (-)-alpha-Bisabolol (    | 201 | 0.0653             | 7  | 0.0446 | 68.3 | 6.01 | 10.21                         | 2.62 | 23.7 |
| beta-Caryophyllene (     | 202 | 0.0821             | 7  | 0.0144 | 17.5 | 5.81 | 8.04                          | 2.8  | 23.1 |
| alpha-Humulene (%)       | 205 | 0.0289             | 6  | 0.0056 | 19.5 | 6.79 | 9.17                          | 4.93 | 24.1 |
| Moisture (%AR)           | 500 | 6.5006             | 25 | 2.0458 | 31.5 | 3.01 | 3.62                          | 0    | 17.4 |
| Δ9-THC (%DW)             | 501 | 0.3103             | 23 | 0.0374 | 12   | 4.76 | 2.93                          | 0.2  | 13.1 |
| Δ9-THCA (%DW)            | 502 | 0.0906             | 23 | 0.016  | 17.7 | 5.72 | 4                             | 0.63 | 14.1 |
| CBD (%DW)                | 503 | 4.9562             | 22 | 0.668  | 13.5 | 3.14 | 3.31                          | 0.14 | 13.7 |
| CBDA (%DW)               | 504 | 6.0275             | 21 | 0.8847 | 14.7 | 3.05 | 2.95                          | 0.1  | 19.1 |
| CBN (%DW)                | 505 | 0.0254             | 14 | 0.0053 | 20.9 | 6.92 | 6.25                          | 0.59 | 14.3 |
| Total Δ9-THC (%DW)       | 506 | 0.381              | 26 | 0.0466 | 12.2 | 4.61 | 2.84                          | 0.27 | 13.3 |
| Total CBD (%DW)          | 507 | 10.4361            | 22 | 1.0893 | 10.4 | 2.81 | 2.89                          | 0.12 | 15.4 |
| CBDV (%DW)               | 508 | 0.0504             | 8  | 0.0328 | 65   | 6.25 | 3.99                          | 1.28 | 12.1 |
| CBG (%DW)                | 510 | 0.2353             | 13 | 0.0313 | 13.3 | 4.96 | 3.96                          | 0.11 | 20.6 |
| CBGA (%DW)               | 511 | 0.3859             | 12 | 0.0423 | 11   | 4.6  | 2.52                          | 0.24 | 12.8 |
| CBC (%DW)                | 514 | 0.3066             | 11 | 0.0261 | 8.5  | 4.76 | 2.1                           | 0.21 | 5.35 |

| By Method Group    |      |                      |    |           |      |                 |                      |      |      |
|--------------------|------|----------------------|----|-----------|------|-----------------|----------------------|------|------|
| Analyte            | Code | Trueness (Lab Value) |    |           |      | Horwitz<br>%RSD | Precision (Lab RSDr) |      |      |
|                    |      | Rob Mean             | n  | Rob StDev | %RSD |                 | Rob Mean             | min  | max  |
| CBN (%AR)          | LC   | 0.0241               | 20 | 0.005     | 20.9 | 6.98            | 5.16                 | 0.56 | 14.4 |
| Total Δ9-THC (%AR) | GC   | 0.3845               | 11 | 0.0661    | 17.2 | 4.61            | 3.54                 | 1.17 | 6.81 |
| Total Δ9-THC (%AR) | LC   | 0.3566               | 43 | 0.0449    | 12.6 | 4.66            | 3.32                 | 0.31 | 25.9 |
| Total CBD (%AR)    | GC   | 10.4162              | 6  | 1.2372    | 11.9 | 2.81            | 2.82                 | 1.09 | 5.14 |

| Sample: HM21NOV-2 (hemp) |    |  | Summary Statistics |    |        |      | Issue Date: December 20, 2021 |      |      |      |
|--------------------------|----|--|--------------------|----|--------|------|-------------------------------|------|------|------|
| Total CBD (%AR)          | LC |  | 9.7976             | 35 | 0.6525 | 6.66 | 2.83                          | 2.63 | 0.11 | 15.4 |
| CBN (%DW)                | LC |  | 0.0254             | 14 | 0.0053 | 20.9 | 6.92                          | 6.25 | 0.59 | 14.3 |
| Total Δ9-THC (%DW)       | LC |  | 0.3843             | 22 | 0.0513 | 13.4 | 4.61                          | 2.92 | 0.27 | 13.3 |
| Total CBD (%DW)          | LC |  | 10.488             | 19 | 1.0017 | 9.55 | 2.8                           | 3.02 | 0.12 | 15.4 |

| By Method          |        |                  |                      |    |           |      |                 |                      |      |      |
|--------------------|--------|------------------|----------------------|----|-----------|------|-----------------|----------------------|------|------|
| Analyte            | Code   |                  | Trueness (Lab Value) |    |           |      | Horwitz<br>%RSD | Precision (Lab RSDr) |      |      |
|                    |        |                  | Rob Mean             | n  | Rob StDev | %RSD |                 | Rob Mean             | min  | max  |
| Δ9-THC (%AR)       | 001.02 | AOAC 2018.11, UV | 0.2796               | 6  | 0.0335    | 12   | 4.83            | 4.91                 | 1.7  | 8.98 |
| Δ9-THC (%AR)       | 001.10 | Other LC-UV      | 0.2786               | 32 | 0.0323    | 11.6 | 4.83            | 2.93                 | 0.33 | 24.4 |
| Δ9-THCA (%AR)      | 002.10 | Other LC-UV      | 0.0803               | 29 | 0.013     | 16.2 | 5.82            | 4.66                 | 0    | 32.8 |
| CBD (%AR)          | 003.10 | Other LC-UV      | 5.0073               | 28 | 0.442     | 8.83 | 3.13            | 2.59                 | 0.14 | 13.7 |
| CBDA (%AR)         | 004.02 | AOAC 2018.11, UV | 5.6293               | 6  | 0.8106    | 14.4 | 3.08            | 4.03                 | 1.5  | 11.2 |
| CBDA (%AR)         | 004.10 | Other LC-UV      | 5.679                | 27 | 0.4517    | 7.95 | 3.08            | 2.92                 | 0.1  | 16.5 |
| CBN (%AR)          | 005.10 | Other LC-UV      | 0.0246               | 16 | 0.0036    | 14.8 | 6.96            | 5.06                 | 0.56 | 14.4 |
| Total Δ9-THC (%AR) | 006.02 | AOAC 2018.11, UV | 0.3616               | 7  | 0.0528    | 14.6 | 4.65            | 3.83                 | 1.2  | 8.95 |
| Total Δ9-THC (%AR) | 006.10 | Other LC-UV      | 0.3456               | 27 | 0.0523    | 15.1 | 4.68            | 3.05                 | 0.31 | 25.9 |
| Total Δ9-THC (%AR) | 006.40 | GC-FID           | 0.3845               | 11 | 0.0661    | 17.2 | 4.61            | 3.54                 | 1.17 | 6.81 |
| Total CBD (%AR)    | 007.02 | AOAC 2018.11, UV | 9.5914               | 7  | 0.7845    | 8.18 | 2.84            | 3.96                 | 0.85 | 10.4 |
| Total CBD (%AR)    | 007.10 | Other LC-UV      | 9.9295               | 24 | 0.618     | 6.22 | 2.83            | 2.54                 | 0.12 | 15.4 |
| Total CBD (%AR)    | 007.40 | GC-FID           | 10.4162              | 6  | 1.2372    | 11.9 | 2.81            | 2.82                 | 1.09 | 5.14 |
| CBDV (%AR)         | 008.99 | Other            | 0.0395               | 12 | 0.0175    | 44.3 | 6.48            | 5.38                 | 1.27 | 12.5 |
| CBG (%AR)          | 010.99 | Other            | 0.2267               | 22 | 0.0315    | 13.9 | 4.99            | 4.44                 | 0.1  | 20.8 |

|                       |        |                |         |    |        |      |       |       |      |      |
|-----------------------|--------|----------------|---------|----|--------|------|-------|-------|------|------|
| CBGA (%AR)            | 011.99 | Other          | 0.3594  | 21 | 0.0469 | 13.1 | 4.65  | 3.48  | 0.26 | 10.4 |
| CBC (%AR)             | 014.99 | Other          | 0.2903  | 21 | 0.0175 | 6.03 | 4.8   | 2.25  | 0.22 | 12   |
| Cd (ug/g AR)          | 101.04 | ICP-MS         | 0.1578  | 7  | 0.0128 | 8.11 | 20.96 | 2.5   | 0.13 | 11   |
| Pb (ug/g AR)          | 104.04 | ICP-MS         | 0.28    | 9  | 0.0178 | 6.37 | 19.23 | 6.59  | 0.09 | 24.4 |
| (-)-alpha-Bisabolol ( | 201.02 | GC,MS          | 0.0653  | 7  | 0.0446 | 68.3 | 6.01  | 10.21 | 2.62 | 23.7 |
| beta-Caryophyllene (  | 202.02 | GC,MS          | 0.0821  | 7  | 0.0144 | 17.5 | 5.81  | 8.04  | 2.8  | 23.1 |
| alpha-Humulene (%)    | 205.02 | GC,MS          | 0.0289  | 6  | 0.0056 | 19.5 | 6.79  | 9.17  | 4.93 | 24.1 |
| Moisture (%AR)        | 500.70 | Commerc. Anal. | 6.6172  | 12 | 2.3144 | 35   | 3.01  | 2.6   | 0    | 14.4 |
| Moisture (%AR)        | 500.99 | Other          | 5.8267  | 8  | 2.2569 | 38.7 | 3.06  | 4.48  | 0    | 10.4 |
| Δ9-THC (%DW)          | 501.10 | Other LC-UV    | 0.3154  | 12 | 0.0493 | 15.6 | 4.74  | 2.4   | 0.47 | 13.1 |
| Δ9-THCA (%DW)         | 502.10 | Other LC-UV    | 0.0889  | 12 | 0.0143 | 16.1 | 5.74  | 3.95  | 0.63 | 14.1 |
| CBD (%DW)             | 503.10 | Other LC-UV    | 5.1558  | 12 | 0.6427 | 12.5 | 3.12  | 2.14  | 0.14 | 13.7 |
| CBDA (%DW)            | 504.10 | Other LC-UV    | 6.0503  | 12 | 0.8851 | 14.6 | 3.05  | 2.8   | 0.1  | 16.5 |
| CBN (%DW)             | 505.10 | Other LC-UV    | 0.0265  | 10 | 0.0048 | 18.2 | 6.88  | 6.49  | 0.59 | 14.3 |
| Total Δ9-THC (%DW)    | 506.10 | Other LC-UV    | 0.3793  | 14 | 0.0647 | 17.1 | 4.62  | 2.46  | 0.32 | 13.3 |
| Total CBD (%DW)       | 507.10 | Other LC-UV    | 10.6326 | 13 | 1.3056 | 12.3 | 2.8   | 2.36  | 0.12 | 15.4 |
| CBDV (%DW)            | 508.99 | Other          | 0.0541  | 7  | 0.0386 | 71.4 | 6.18  | 3.95  | 1.28 | 12.1 |
| CBG (%DW)             | 510.99 | Other          | 0.2373  | 11 | 0.0335 | 14.1 | 4.95  | 4.23  | 0.11 | 20.6 |
| CBGA (%DW)            | 511.99 | Other          | 0.3893  | 10 | 0.0491 | 12.6 | 4.6   | 2.42  | 0.24 | 4.88 |
| CBC (%DW)             | 514.99 | Other          | 0.3093  | 10 | 0.0262 | 8.48 | 4.76  | 2.26  | 0.21 | 5.35 |

1. Data summarized for trueness and precision if 6 or more Lab values and 6 or more Lab RSDr values were available.

2. AR refers to concentration on as-received basis. DW refers to concentration on dry weight basis.