

# Hemp Proficiency Testing

## Summary Statistics

### HM21SEP-1 (hemp)



Sample: HM21SEP-1 (hemp)

Summary Statistics

Issue Date: October 24, 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  | 0.2163               | 51 | 0.0219    | 10.1 | 5.02            | 2.6                  | 0.37 | 17.1 |
| Δ9-THCA (%AR)      | 002  | 0.1079               | 52 | 0.0145    | 13.4 | 5.57            | 3.23                 | 0    | 23.2 |
| CBD (%AR)          | 003  | 3.4378               | 41 | 0.2524    | 7.34 | 3.32            | 2.57                 | 0.75 | 10.7 |
| CBDA (%AR)         | 004  | 6.2259               | 39 | 0.5923    | 9.51 | 3.03            | 2.92                 | 0.37 | 8.23 |
| CBN (%AR)          | 005  | 0.0177               | 21 | 0.0061    | 34.5 | 7.31            | 8.65                 | 0    | 91   |
| Total Δ9-THC (%AR) | 006  | 0.3134               | 59 | 0.0333    | 10.6 | 4.75            | 2.97                 | 0    | 47.4 |
| Total CBD (%AR)    | 007  | 8.8595               | 42 | 0.7346    | 8.29 | 2.88            | 2.85                 | 0.25 | 26.7 |
| CBDV (%AR)         | 008  | 0.0328               | 9  | 0.0128    | 39   | 6.66            | 4.82                 | 0    | 41.9 |
| CBDVA (%AR)        | 009  | 0.0718               | 7  | 0.0182    | 25.3 | 5.92            | 3.31                 | 0    | 8.01 |
| CBG (%AR)          | 010  | 0.1209               | 22 | 0.0278    | 23   | 5.48            | 3.71                 | 0    | 13.9 |
| CBGA (%AR)         | 011  | 0.2721               | 19 | 0.0359    | 13.2 | 4.85            | 4.75                 | 0.36 | 14   |
| CBC (%AR)          | 014  | 0.2473               | 21 | 0.0197    | 7.97 | 4.92            | 2.86                 | 0    | 14.2 |
| Cd (ug/g AR)       | 101  | 0.1275               | 9  | 0.0104    | 8.19 | 21.64           | 4.58                 | 0.65 | 10.4 |

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|--------------------------|-----|--------------------|----|--------|------|------|------------------------------|------|------|
| Pb (ug/g AR)             | 104 | 0.2732             | 10 | 0.0124 | 4.53 | 19.3 | 6.64                         | 0.63 | 27.2 |
| (-)-alpha-Bisabolol (    | 201 | 0.0828             | 7  | 0.0663 | 80.1 | 5.8  | 6.28                         | 1.31 | 14.5 |
| beta-Caryophyllene (     | 202 | 0.1083             | 7  | 0.0325 | 30   | 5.57 | 4.48                         | 0.88 | 9.81 |
| alpha-Humulene (%)       | 205 | 0.0384             | 6  | 0.0126 | 32.8 | 6.51 | 4.64                         | 1.36 | 9.74 |
| Moisture (%AR)           | 500 | 7.6097             | 24 | 1.963  | 25.8 | 2.94 | 3.7                          | 0    | 14.3 |
| Δ9-THC (%DW)             | 501 | 0.2386             | 22 | 0.0228 | 9.55 | 4.95 | 3.31                         | 0.26 | 8.93 |
| Δ9-THCA (%DW)            | 502 | 0.1185             | 20 | 0.0152 | 12.8 | 5.49 | 3.07                         | 0.17 | 13.1 |
| CBD (%DW)                | 503 | 3.5349             | 19 | 0.4366 | 12.4 | 3.3  | 2.31                         | 0.07 | 5.33 |
| CBDA (%DW)               | 504 | 6.697              | 18 | 0.7755 | 11.6 | 3    | 3.49                         | 0.04 | 8.23 |
| CBN (%DW)                | 505 | 0.0172             | 8  | 0.0026 | 14.9 | 7.34 | 6.6                          | 0.54 | 15.5 |
| Total Δ9-THC (%DW)       | 506 | 0.3392             | 25 | 0.0281 | 8.29 | 4.69 | 3.36                         | 0.31 | 10.8 |
| Total CBD (%DW)          | 507 | 9.4657             | 19 | 0.9092 | 9.61 | 2.85 | 3.1                          | 0.05 | 7.44 |
| CBG (%DW)                | 510 | 0.1336             | 10 | 0.0136 | 10.2 | 5.4  | 5.82                         | 0.13 | 40.8 |
| CBGA (%DW)               | 511 | 0.3117             | 9  | 0.0388 | 12.5 | 4.75 | 3.08                         | 0.18 | 14.6 |
| CBC (%DW)                | 514 | 0.2661             | 10 | 0.0227 | 8.53 | 4.87 | 3.39                         | 0.2  | 7.07 |

By Method Group

| Analyte            | Code | Trueness (Lab Value) |    |           |      | Horwitz %RSD | Precision (Lab RSDr) |      |      |
|--------------------|------|----------------------|----|-----------|------|--------------|----------------------|------|------|
|                    |      | Rob Mean             | n  | Rob StDev | %RSD |              | Rob Mean             | min  | max  |
| CBN (%AR)          | LC   | 0.0159               | 16 | 0.0033    | 21   | 7.43         | 7.24                 | 0    | 91   |
| Total Δ9-THC (%AR) | GC   | 0.3173               | 11 | 0.0606    | 19.1 | 4.74         | 4.45                 | 1.1  | 10.8 |
| Total Δ9-THC (%AR) | LC   | 0.3108               | 43 | 0.0294    | 9.45 | 4.76         | 2.46                 | 0    | 18.1 |
| Total CBD (%AR)    | GC   | 8.6018               | 6  | 1.0311    | 12   | 2.89         | 3.82                 | 0.25 | 7.44 |

|                          |    |                    |    |        |      |      |                              |      |      |
|--------------------------|----|--------------------|----|--------|------|------|------------------------------|------|------|
| Sample: HM21SEP-1 (hemp) |    | Summary Statistics |    |        |      |      | Issue Date: October 24, 2021 |      |      |
| Total CBD (%AR)          | LC | 8.9327             | 32 | 0.6161 | 6.9  | 2.87 | 2.66                         | 0.44 | 6.26 |
| CBN (%DW)                | LC | 0.0172             | 8  | 0.0026 | 14.9 | 7.34 | 6.6                          | 0.54 | 15.5 |
| Total Δ9-THC (%DW)       | LC | 0.3425             | 21 | 0.0304 | 8.88 | 4.69 | 3.19                         | 0.31 | 7.73 |
| Total CBD (%DW)          | LC | 9.5402             | 16 | 0.9526 | 9.98 | 2.85 | 2.71                         | 0.05 | 5.74 |

| 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 | 0.2066               | 7  | 0.0213    | 10.3 | 5.06            | 3.54                 | 2.31 | 8.97 |
| Δ9-THC (%AR)       | 001.10 | Other LC-UV      | 0.2175               | 31 | 0.0208    | 9.56 | 5.02            | 2.42                 | 0.37 | 17.1 |
| Δ9-THCA (%AR)      | 002.02 | AOAC 2018.11, UV | 0.107                | 8  | 0.0165    | 15.4 | 5.58            | 2.55                 | 0    | 6.15 |
| Δ9-THCA (%AR)      | 002.10 | Other LC-UV      | 0.1075               | 32 | 0.0154    | 14.4 | 5.58            | 3.87                 | 0    | 23.2 |
| CBD (%AR)          | 003.02 | AOAC 2018.11, UV | 3.3292               | 6  | 0.2059    | 6.19 | 3.33            | 2.55                 | 1.97 | 3.48 |
| CBD (%AR)          | 003.10 | Other LC-UV      | 3.4869               | 27 | 0.2565    | 7.35 | 3.31            | 2.62                 | 1.03 | 6.45 |
| CBDA (%AR)         | 004.02 | AOAC 2018.11, UV | 6.0896               | 6  | 0.4415    | 7.25 | 3.04            | 2.71                 | 1.29 | 3.79 |
| CBDA (%AR)         | 004.10 | Other LC-UV      | 6.3192               | 26 | 0.6059    | 9.59 | 3.03            | 3.04                 | 0.62 | 8.23 |
| CBN (%AR)          | 005.10 | Other LC-UV      | 0.0167               | 11 | 0.0041    | 24.4 | 7.37            | 6.47                 | 0    | 20.9 |
| Total Δ9-THC (%AR) | 006.02 | AOAC 2018.11, UV | 0.3032               | 7  | 0.0408    | 13.4 | 4.77            | 2.92                 | 0    | 6.27 |
| Total Δ9-THC (%AR) | 006.10 | Other LC-UV      | 0.3123               | 27 | 0.0266    | 8.5  | 4.75            | 2.55                 | 0.38 | 18.1 |
| Total Δ9-THC (%AR) | 006.40 | GC-FID           | 0.3173               | 11 | 0.0606    | 19.1 | 4.74            | 4.45                 | 1.1  | 10.8 |
| Total CBD (%AR)    | 007.02 | AOAC 2018.11, UV | 8.3492               | 6  | 1.0679    | 12.8 | 2.9             | 2.63                 | 1.67 | 3.56 |
| Total CBD (%AR)    | 007.10 | Other LC-UV      | 9.0718               | 22 | 0.6403    | 7.06 | 2.87            | 2.83                 | 0.78 | 6.26 |
| Total CBD (%AR)    | 007.40 | GC-FID           | 8.6018               | 6  | 1.0311    | 12   | 2.89            | 3.82                 | 0.25 | 7.44 |

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|                       |        |                |        |    |        |      |       |      |      |      |
|-----------------------|--------|----------------|--------|----|--------|------|-------|------|------|------|
| CBDV (%AR)            | 008.99 | Other          | 0.0347 | 8  | 0.0129 | 37.3 | 6.61  | 5.55 | 0    | 41.9 |
| CBG (%AR)             | 010.99 | Other          | 0.1198 | 19 | 0.0277 | 23.1 | 5.49  | 4.1  | 0    | 13.9 |
| CBGA (%AR)            | 011.99 | Other          | 0.2751 | 16 | 0.04   | 14.6 | 4.84  | 4.9  | 0.36 | 14   |
| CBC (%AR)             | 014.99 | Other          | 0.2482 | 18 | 0.0207 | 8.32 | 4.92  | 2.89 | 0    | 14.2 |
| Cd (ug/g AR)          | 101.04 | ICP-MS         | 0.1275 | 9  | 0.0104 | 8.19 | 21.64 | 4.58 | 0.65 | 10.4 |
| Pb (ug/g AR)          | 104.04 | ICP-MS         | 0.2732 | 10 | 0.0124 | 4.53 | 19.3  | 6.64 | 0.63 | 27.2 |
| (-)-alpha-Bisabolol ( | 201.02 | GC,MS          | 0.0828 | 7  | 0.0663 | 80.1 | 5.8   | 6.28 | 1.31 | 14.5 |
| beta-Caryophyllene (  | 202.02 | GC,MS          | 0.1083 | 7  | 0.0325 | 30   | 5.57  | 4.48 | 0.88 | 9.81 |
| alpha-Humulene (%)    | 205.02 | GC,MS          | 0.0384 | 6  | 0.0126 | 32.8 | 6.51  | 4.64 | 1.36 | 9.74 |
| Moisture (%AR)        | 500.70 | Commerc. Anal. | 7.4116 | 13 | 2.0409 | 27.5 | 2.95  | 4.14 | 0    | 9.92 |
| Moisture (%AR)        | 500.99 | Other          | 7.1857 | 6  | 2.0116 | 28   | 2.97  | 2.49 | 0.43 | 7.54 |
| Δ9-THC (%DW)          | 501.10 | Other LC-UV    | 0.2413 | 14 | 0.0248 | 10.3 | 4.94  | 2.69 | 0.26 | 6.56 |
| Δ9-THCA (%DW)         | 502.10 | Other LC-UV    | 0.119  | 14 | 0.013  | 10.9 | 5.49  | 3.19 | 0.17 | 13.1 |
| CBD (%DW)             | 503.10 | Other LC-UV    | 3.619  | 13 | 0.4487 | 12.4 | 3.29  | 2.46 | 0.07 | 5.33 |
| CBDA (%DW)            | 504.10 | Other LC-UV    | 6.7016 | 13 | 0.9268 | 13.8 | 3     | 3.57 | 0.04 | 8.23 |
| CBN (%DW)             | 505.10 | Other LC-UV    | 0.0172 | 7  | 0.0029 | 17   | 7.34  | 7.07 | 0.54 | 15.5 |
| Total Δ9-THC (%DW)    | 506.10 | Other LC-UV    | 0.3446 | 16 | 0.0316 | 9.18 | 4.68  | 2.82 | 0.31 | 5.55 |
| Total CBD (%DW)       | 507.10 | Other LC-UV    | 9.5784 | 13 | 1.0136 | 10.6 | 2.84  | 2.68 | 0.05 | 5.74 |
| CBG (%DW)             | 510.99 | Other          | 0.1351 | 9  | 0.016  | 11.8 | 5.39  | 6.41 | 0.13 | 40.8 |
| CBGA (%DW)            | 511.99 | Other          | 0.3177 | 8  | 0.0342 | 10.8 | 4.74  | 3.35 | 0.18 | 14.6 |
| CBC (%DW)             | 514.99 | Other          | 0.2684 | 9  | 0.0223 | 8.29 | 4.86  | 3.51 | 0.2  | 7.07 |

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.