Additional file 1

**Appendix A: Free List Results (by Frequency)- Ungrouped Terpene-Related Attributes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Grouped Items** | **Frequency (%)** | **Average Rank** | **Salience** |
| high\_thc | THC Content\* | 42.9 | 3.33 | 0.263 |
| smell | Pungent Smell, Smell Spectrum | 42.9 | 4.22 | 0.252 |
| yield |  | 42.9 | 4 | 0.29 |
| morphology\_(short) |  | 33.3 | 4.29 | 0.193 |
| vigor |  | 28.6 | 5.17 | 0.138 |
| large\_buds | Bud Size\* | 28.6 | 4.83 | 0.168 |
| disease\_resistance |  | 28.6 | 3.67 | 0.201 |
| short\_flowering\_time |  | 28.6 | 4.17 | 0.178 |
| unique/vibrant\_color | Color, Unique Color (purple, violets, blues) | 23.8 | 7.6 | 0.063 |
| flavor/taste | Fruity Flavor | 23.8 | 5.8 | 0.106 |
| dense\_buds | Moist Buds\*, Density | 23.8 | 5.2 | 0.104 |
| pest\_resistance | Pest Resistance (mites, aphids, spider mites, thrips) | 19 | 4.5 | 0.126 |
| trichome\_development | high trichome development, lots of trichomes | 19 | 5.75 | 0.1 |
| market\_demand | Trendiness | 19 | 5.25 | 0.091 |
| easy/low\_inputs | Easy Inputs, nutrient sensitivity/lower inputs, Sustainability (low inputs), processes nutrients quickly | 19 | 4 | 0.086 |
| bushiness |  | 19 | 4 | 0.13 |
| high\_cbd |  | 14.3 | 2.67 | 0.116 |
| stable\_genetics |  | 14.3 | 4.33 | 0.076 |
| different\_than\_other  \_strains\_in\_the\_grow |  | 14.3 | 4.67 | 0.053 |
| high\_terpene\_content |  | 9.5 | 2.5 | 0.071 |
| 1:1\_thc\_to\_cbd |  | 9.5 | 4.5 | 0.033 |
| morphology\_(bushy |  | 9.5 | 4 | 0.038 |
| bud\_density |  | 9.5 | 2.5 | 0.075 |
| unique\_terpene\_profile |  | 9.5 | 3 | 0.068 |
| appearance |  | 9.5 | 5.5 | 0.037 |
| temperature\_resilient | Heat Tolerant | 9.5 | 2.5 | 0.082 |
| unique/novel |  | 9.5 | 3.5 | 0.035 |
| morphology\_(height) |  | 4.8 | 1 | 0.048 |
| size\_(homogenous) |  | 4.8 | 1 | 0.048 |
| wide\_ranging\_cannabinoids |  | 4.8 | 1 | 0.048 |
| wide\_ranging\_terpenes |  | 4.8 | 2 | 0.04 |
| unique\_cannabinoid\_  profile |  | 4.8 | 1 | 0.048 |
| acclimated\_to\_  high\_elevation |  | 4.8 | 2 | 0.042 |
| feminized |  | 4.8 | 4 | 0.03 |
| exotic\_fruit\_terpenes |  | 4.8 | 6 | 0.026 |
| fruity\_terpenes |  | 4.8 | 8 | 0.011 |
| gassy\_terpenes |  | 4.8 | 5 | 0.03 |
| available\_genetics |  | 4.8 | 7 | 0.012 |
| effects |  | 4.8 | 6 | 0.021 |
| citrusy\_terpenes |  | 4.8 | 7 | 0.016 |
| dried\_appropriately |  | 4.8 | 4 | 0.024 |
| morphology\_(bigger) |  | 4.8 | 3 | 0.038 |
| low\_thc |  | 4.8 | 2 | 0.042 |
| long\_storage\_life |  | 4.8 | 14 | 0.003 |
| medicinal\_spectrum |  | 4.8 | 6 | 0.021 |
| medium\_density\_buds |  | 4.8 | 4 | 0.024 |
| high\_cbg |  | 4.8 | 6 | 0.014 |
| high\_cbn |  | 4.8 | 5 | 0.02 |
| infertile |  | 4.8 | 5 | 0.024 |
| 20-25%\_thc |  | 4.8 | 9 | 0.005 |
| indica-specific\_terpenes |  | 4.8 | 4 | 0.019 |

\*Denotes Grouped Data (Cross-checked with interview data)

**Appendix B: Free List Results (by Frequency)- Grouped Terpene-Related Attributes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Grouped Items** | **Frequency (%)** | **Average Rank** | **Salience** |
| terpene\_content | fruity flavor, gassy terpenes, exotic fruit terpenes, unique terpene profile, smell, pungent smell, wide-ranging terpenes, taste, Indica-specific terpenes, high terpene content, smell spectrum | 71.4 | 4.33 | 0.415 |
| yield |  | 42.9 | 4 | 0.29 |
| high\_thc |  | 33.3 | 3 | 0.228 |
| morphology\_(short) |  | 33.3 | 4.29 | 0.193 |
| short\_flowering\_time |  | 28.6 | 4.17 | 0.178 |
| disease\_resistance | Powdery mildew resistance, mold resistance | 28.6 | 3.67 | 0.201 |
| vigor |  | 28.6 | 5.17 | 0.138 |
| dense\_buds |  | 23.8 | 4.8 | 0.115 |
| unique/vibrant\_color | Color, unique color (purple, violets, blues) | 23.8 | 7.6 | 0.063 |
| low/easy\_inputs | processes nutrients quickly, easy inputs, Sustainable (no need for inputs) | 19 | 4 | 0.086 |
| large\_buds |  | 19 | 6 | 0.1 |
| trichome\_development | high trichome development, lots of trichomes | 19 | 5.75 | 0.1 |
| pest\_resistance | pest\_resistance (mites,\_aphids,\_spider\_mites,\_thrips) | 19 | 4.5 | 0.126 |
| bushiness | Branching | 19 | 4 | 0.13 |
| high\_cbd |  | 14.3 | 2.67 | 0.116 |
| different\_than\_other\_  strains\_in\_the\_grow |  | 14.3 | 4.67 | 0.053 |
| stable\_genetics |  | 14.3 | 4.33 | 0.076 |
| market\_demand | Trendiness | 14.3 | 5.67 | 0.064 |
| morphology\_(bushy) |  | 9.5 | 4 | 0.038 |
| unique/novel |  | 9.5 | 3.5 | 0.035 |
| bud\_size |  | 9.5 | 2.5 | 0.068 |
| appearance |  | 9.5 | 5.5 | 0.037 |
| thc\_content |  | 9.5 | 4.5 | 0.035 |
| 1:1\_thc\_to\_cbd | 1:1 THC to CBD for Market Demands | 9.5 | 4.5 | 0.033 |
| morphology\_(height) |  | 4.8 | 1 | 0.048 |
| wide\_ranging\_  cannabinoids |  | 4.8 | 1 | 0.048 |
| temperature\_resilient |  | 4.8 | 4 | 0.035 |
| trendiness |  | 4.8 | 4 | 0.027 |
| unique\_cannabinoid\_  profile |  | 4.8 | 1 | 0.048 |
| size |  | 4.8 | 1 | 0.048 |
| 20-25%\_thc |  | 4.8 | 9 | 0.005 |
| effects |  | 4.8 | 6 | 0.021 |
| dried\_appropriately |  | 4.8 | 4 | 0.024 |
| feminized |  | 4.8 | 4 | 0.03 |
| heat\_tolerant |  | 4.8 | 1 | 0.048 |
| acclimated\_to\_  high\_elevation |  | 4.8 | 2 | 0.042 |
| density |  | 4.8 | 3 | 0.037 |
| available\_genetics |  | 4.8 | 7 | 0.012 |
| bud\_density |  | 4.8 | 2 | 0.038 |
| morphology\_(bigger) |  | 4.8 | 3 | 0.038 |
| medium\_density\_buds |  | 4.8 | 4 | 0.024 |
| medicinal\_spectrum |  | 4.8 | 6 | 0.021 |
| moist\_buds |  | 4.8 | 3 | 0.037 |
| high\_cbg |  | 4.8 | 6 | 0.014 |
| high\_cbn |  | 4.8 | 5 | 0.02 |
| low\_thc |  | 4.8 | 2 | 0.042 |
| infertile |  | 4.8 | 5 | 0.024 |
| long\_storage\_life |  | 4.8 | 14 | 0.003 |