Table 1. ANOVA test for TH, YXY systems

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean Sq | F value | Pr(>F) |
| MeanA2 | 56.98 | 356500.00 | 0.00 |
| MeanA | 34.28 | 214500.00 | 0.00 |
| Var1 | 158.86 | 993900.00 | 0.00 |
| Var2 | 96.18 | 601800.00 | 0.00 |
| VarA | 11.83 | 74030.00 | 0.00 |
| MeanA2: MeanA | 0.00 | 3.45 | 0.06 |
| MeanA2:Var1 | 0.02 | 112.30 | 0.00 |
| MeanA:Var1 | 4.02 | 25140.00 | 0.00 |
| MeanA2:Var2 | 1.56 | 9761.00 | 0.00 |
| MeanA:Var2 | 4.02 | 25180.00 | 0.00 |
| Var1:Var2 | 7.11 | 44510.00 | 0.00 |
| MeanA2:VarA | 0.08 | 496.00 | 0.00 |
| MeanA:VarA | 1.20 | 7503.00 | 0.00 |
| Var1:VarA | 0.60 | 3777.00 | 0.00 |
| Var2:VarA | 7.02 | 43930.00 | 0.00 |
| MeanA2:MeanA:Var1 | 0.10 | 651.30 | 0.00 |
| MeanA2:MeanA:Var2 | 0.03 | 158.50 | 0.00 |
| MeanA2:Var1:Var2 | 0.01 | 65.18 | 0.00 |
| MeanA:Var1:Var2 | 0.38 | 2357.00 | 0.00 |
| MeanA2:MeanA:VarA | 0.01 | 65.94 | 0.00 |
| MeanA2:Var1:VarA | 0.01 | 50.65 | 0.00 |
| MeanA:Var1:VarA | 0.12 | 751.30 | 0.00 |
| MeanA2:Var2:VarA | 0.20 | 1275.00 | 0.00 |
| MeanA:Var2:VarA | 0.80 | 4997.00 | 0.00 |
| Var1:Var2:VarA | 1.13 | 7040.00 | 0.00 |
| MeanA2:MeanA:Var1:Var2 | 0.01 | 93.43 | 0.00 |
| MeanA2:MeanA:Var1:VarA | 0.01 | 48.21 | 0.00 |
| MeanA2:MeanA:Var2:VarA | 0.02 | 137.60 | 0.00 |
| MeanA2:Var1:Var2:VarA | 0.00 | 1.52 | 0.22 |
| MeanA:Var1:Var2:VarA | 0.05 | 289.20 | 0.00 |
| MeanA2:MeanA:Var1:Var2:VarA | 0.00 | 5.10 | 0.02 |

Table 2. ANOVA test for SCV, YXY systems

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Mean Sq | F value | Pr(>F) |
| MeanA2 | 35.00 | 366.40 | 0.00 |
| MeanA | 1.00 | 10.22 | 0.00 |
| SCV1 | 2416.00 | 25240.00 | 0.00 |
| SCV2 | 17418.00 | 181900.00 | 0.00 |
| SCVA | 1051.00 | 10970.00 | 0.00 |
| MeanA2: MeanA | 13.00 | 137.50 | 0.00 |
| MeanA2:SCV1 | 748.00 | 7810.00 | 0.00 |
| MeanA:SCV1 | 12.00 | 128.60 | 0.00 |
| MeanA2:SCV1 | 66.00 | 692.50 | 0.00 |
| MeanA:SCV2 | 0.00 | 0.02 | 0.88 |
| SCV1:SCV2 | 2.00 | 18.84 | 0.00 |
| MeanA2:SCVA | 1066.00 | 11140.00 | 0.00 |
| MeanA:SCVA | 0.00 | 4.86 | 0.03 |
| SCV1:SCVA | 47.00 | 490.10 | 0.00 |
| SCV2:SCVA | 42.00 | 437.30 | 0.00 |
| MeanA2: MeanA:SCV1 | 5.00 | 50.31 | 0.00 |
| MeanA2: MeanA:SCV2 | 0.00 | 0.44 | 0.51 |
| MeanA2:SCV1:SCV2 | 36.00 | 371.10 | 0.00 |
| MeanA:SCV1:SCV2 | 6.00 | 65.24 | 0.00 |
| MeanA2: MeanA:SCVA | 4.00 | 37.10 | 0.00 |
| MeanA2:SCV1:SCVA | 5.00 | 56.29 | 0.00 |
| MeanA:SCV1:SCVA | 2.00 | 17.68 | 0.00 |
| MeanA2:SCV2:SCVA | 4.00 | 46.14 | 0.00 |
| MeanA:SCV2:SCVA | 3.00 | 28.26 | 0.00 |
| SCV1:SCV2:SCVA | 20.00 | 208.40 | 0.00 |
| MeanA2: MeanA:SCV1:SCV2 | 2.00 | 24.91 | 0.00 |
| MeanA2: MeanA:SCV1:SCVA | 1.00 | 6.81 | 0.01 |
| MeanA2: MeanA:SCV2:SCVA | 1.00 | 8.98 | 0.00 |
| MeanA2:SCV1:SCV2:SCVA | 0.00 | 2.98 | 0.08 |
| MeanA:SCV1:SCV2:SCVA | 0.00 | 2.83 | 0.09 |
| MeanA2: MeanA:SCV1:SCV2:SCVA | 0.00 | 0.26 | 0.61 |

Table 4. ANOVA test for *n*TA, YXY systems

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Mean Sq | F value | Pr(>F) |
| MeanA2 | 0.00 | 0.00 | 0.99 |
| MeanA | 0.00 | 0.00 | 0.99 |
| Var1 | 1.36 | 270.04 | 0.00 |
| Var2 | 0.05 | 9.03 | 0.00 |
| VarA | 3.94 | 781.64 | 0.00 |
| MeanA2: MeanA | 0.00 | 0.00 | 0.99 |
| MeanA2:Var1 | 15.16 | 3011.76 | 0.00 |
| MeanA:Var1 | 0.19 | 37.04 | 0.00 |
| MeanA2:Var2 | 17.55 | 3486.35 | 0.00 |
| MeanA:Var2 | 0.76 | 150.92 | 0.00 |
| Var1:Var2 | 23.04 | 4575.59 | 0.00 |
| MeanA2:VarA | 13.43 | 2667.75 | 0.00 |
| MeanA:VarA | 2.60 | 516.09 | 0.00 |
| Var1:VarA | 12.96 | 2574.13 | 0.00 |
| Var2:VarA | 13.99 | 2777.74 | 0.00 |
| MeanA2:MeanA:Var1 | 5.72 | 1135.89 | 0.00 |
| MeanA2:MeanA:Var2 | 1.68 | 332.77 | 0.00 |
| MeanA2:Var1:Var2 | 29.35 | 5830.38 | 0.00 |
| MeanA:Var1:Var2 | 0.29 | 57.19 | 0.00 |
| MeanA2:MeanA:VarA | 2.33 | 463.58 | 0.00 |
| MeanA2:Var1:VarA | 3.43 | 680.68 | 0.00 |
| MeanA:Var1:VarA | 0.35 | 68.64 | 0.00 |
| MeanA2:Var2:VarA | 11.97 | 2377.71 | 0.00 |
| MeanA:Var2:VarA | 0.16 | 32.11 | 0.00 |
| Var1:Var2:VarA | 0.12 | 22.77 | 0.00 |
| MeanA2:MeanA:Var1:Var2 | 2.27 | 450.75 | 0.00 |
| MeanA2:MeanA:Var1:VarA | 0.76 | 150.65 | 0.00 |
| MeanA2:MeanA:Var2:VarA | 1.60 | 317.05 | 0.00 |
| MeanA2:Var1:Var2:VarA | 0.07 | 13.06 | 0.00 |
| MeanA:Var1:Var2:VarA | 0.05 | 9.92 | 0.00 |
| MeanA2:MeanA:Var1:Var2:VarA | 0.16 | 31.37 | 0.00 |

Table 5. ANOVA test for TH, XYY systems

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean Sq | F value | Pr(>F) |
| MeanA2 | 0.05 | 253.30 | 0.00 |
| MeanA | 78.84 | 400000.00 | 0.00 |
| Var1 | 199.37 | 1011000.00 | 0.00 |
| Var2 | 62.69 | 318000.00 | 0.00 |
| VarA | 18.52 | 93970.00 | 0.00 |
| MeanA2: MeanA | 0.01 | 36.71 | 0.00 |
| MeanA2:Var1 | 4.87 | 24680.00 | 0.00 |
| MeanA:Var1 | 8.13 | 41230.00 | 0.00 |
| MeanA2:Var2 | 0.35 | 1800.00 | 0.00 |
| MeanA:Var2 | 3.12 | 15850.00 | 0.00 |
| Var1:Var2 | 9.29 | 47120.00 | 0.00 |
| MeanA2:VarA | 0.02 | 126.60 | 0.00 |
| MeanA:VarA | 1.20 | 6069.00 | 0.00 |
| Var1:VarA | 0.13 | 678.60 | 0.00 |
| Var2:VarA | 8.18 | 41510.00 | 0.00 |
| MeanA2:MeanA:Var1 | 0.09 | 435.40 | 0.00 |
| MeanA2:MeanA:Var2 | 0.01 | 31.09 | 0.00 |
| MeanA2:Var1:Var2 | 0.93 | 4717.00 | 0.00 |
| MeanA:Var1:Var2 | 0.47 | 2391.00 | 0.00 |
| MeanA2:MeanA:VarA | 0.02 | 112.80 | 0.00 |
| MeanA2:Var1:VarA | 0.19 | 970.00 | 0.00 |
| MeanA:Var1:VarA | 0.05 | 229.60 | 0.00 |
| MeanA2:Var2:VarA | 0.04 | 178.70 | 0.00 |
| MeanA:Var2:VarA | 0.94 | 4756.00 | 0.00 |
| Var1:Var2:VarA | 0.64 | 3272.00 | 0.00 |
| MeanA2:MeanA:Var1:Var2 | 0.02 | 114.30 | 0.00 |
| MeanA2:MeanA:Var1:VarA | 0.00 | 13.92 | 0.00 |
| MeanA2:MeanA:Var2:VarA | 0.00 | 2.30 | 0.13 |
| MeanA2:Var1:Var2:VarA | 0.01 | 74.63 | 0.00 |
| MeanA:Var1:Var2:VarA | 0.05 | 239.50 | 0.00 |
| MeanA2:MeanA:Var1:Var2:VarA | 0.00 | 0.17 | 0.68 |

Table 6. ANOVA test for SCV, XYY systems

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Mean Sq | F value | Pr(>F) |
| MeanA2 | 0.00 | 0.00 | 1.00 |
| MeanA | 0.00 | 0.00 | 1.00 |
| SCV1 | 86.63 | 1639.52 | 0.00 |
| SCV2 | 78.17 | 1479.29 | 0.00 |
| SCVA | 17.31 | 327.59 | 0.00 |
| MeanA2: MeanA | 0.00 | 0.00 | 1.00 |
| MeanA2:SCV1 | 239.06 | 4524.27 | 0.00 |
| MeanA:SCV1 | 122.91 | 2326.10 | 0.00 |
| MeanA2:SCV1 | 286.23 | 5416.87 | 0.00 |
| MeanA:SCV2 | 130.25 | 2465.02 | 0.00 |
| SCV1:SCV2 | 117.86 | 2230.50 | 0.00 |
| MeanA2:SCVA | 7.63 | 144.49 | 0.00 |
| MeanA:SCVA | 11.00 | 208.13 | 0.00 |
| SCV1:SCVA | 26.09 | 493.81 | 0.00 |
| SCV2:SCVA | 50.57 | 957.01 | 0.00 |
| MeanA2: MeanA:SCV1 | 63.22 | 1196.49 | 0.00 |
| MeanA2: MeanA:SCV2 | 61.92 | 1171.87 | 0.00 |
| MeanA2:SCV1:SCV2 | 114.82 | 2172.94 | 0.00 |
| MeanA:SCV1:SCV2 | 26.52 | 501.82 | 0.00 |
| MeanA2: MeanA:SCVA | 8.80 | 166.51 | 0.00 |
| MeanA2:SCV1:SCVA | 71.22 | 1347.84 | 0.00 |
| MeanA:SCV1:SCVA | 32.77 | 620.20 | 0.00 |
| MeanA2:SCV2:SCVA | 37.98 | 718.85 | 0.00 |
| MeanA:SCV2:SCVA | 6.75 | 127.70 | 0.00 |
| SCV1:SCV2:SCVA | 16.24 | 307.33 | 0.00 |
| MeanA2: MeanA:SCV1:SCV2 | 8.07 | 152.72 | 0.00 |
| MeanA2: MeanA:SCV1:SCVA | 23.17 | 438.44 | 0.00 |
| MeanA2: MeanA:SCV2:SCVA | 1.57 | 29.68 | 0.00 |
| MeanA2:SCV1:SCV2:SCVA | 23.01 | 435.42 | 0.00 |
| MeanA:SCV1:SCV2:SCVA | 6.84 | 129.38 | 0.00 |
| MeanA2: MeanA:SCV1:SCV2:SCVA | 1.32 | 24.93 | 0.00 |

Table 8. ANOVA test for *n*TA, XYY systems

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Mean Sq | F value | Pr(>F) |
| MeanA2 | 0.00 | 0.00 | 1.00 |
| MeanA | 0.00 | 0.00 | 1.00 |
| Var1 | 86.63 | 1639.52 | 0.00 |
| Var2 | 78.17 | 1479.29 | 0.00 |
| VarA | 17.31 | 327.59 | 0.00 |
| MeanA2: MeanA | 0.00 | 0.00 | 1.00 |
| MeanA2:Var1 | 239.06 | 4524.27 | 0.00 |
| MeanA:Var1 | 122.91 | 2326.10 | 0.00 |
| MeanA2:Var2 | 286.23 | 5416.87 | 0.00 |
| MeanA:Var2 | 130.25 | 2465.02 | 0.00 |
| Var1:Var2 | 117.86 | 2230.50 | 0.00 |
| MeanA2:VarA | 7.63 | 144.49 | 0.00 |
| MeanA:VarA | 11.00 | 208.13 | 0.00 |
| Var1:VarA | 26.09 | 493.81 | 0.00 |
| Var2:VarA | 50.57 | 957.01 | 0.00 |
| MeanA2:MeanA:Var1 | 63.22 | 1196.49 | 0.00 |
| MeanA2:MeanA:Var2 | 61.92 | 1171.87 | 0.00 |
| MeanA2:Var1:Var2 | 114.82 | 2172.94 | 0.00 |
| MeanA:Var1:Var2 | 26.52 | 501.82 | 0.00 |
| MeanA2:MeanA:VarA | 8.80 | 166.51 | 0.00 |
| MeanA2:Var1:VarA | 71.22 | 1347.84 | 0.00 |
| MeanA:Var1:VarA | 32.77 | 620.20 | 0.00 |
| MeanA2:Var2:VarA | 37.98 | 718.85 | 0.00 |
| MeanA:Var2:VarA | 6.75 | 127.70 | 0.00 |
| Var1:Var2:VarA | 16.24 | 307.33 | 0.00 |
| MeanA2:MeanA:Var1:Var2 | 8.07 | 152.72 | 0.00 |
| MeanA2:MeanA:Var1:VarA | 23.17 | 438.44 | 0.00 |
| MeanA2:MeanA:Var2:VarA | 1.57 | 29.68 | 0.00 |
| MeanA2:Var1:Var2:VarA | 23.01 | 435.42 | 0.00 |
| MeanA:Var1:Var2:VarA | 6.84 | 129.38 | 0.00 |
| MeanA2:MeanA:Var1:Var2:VarA | 1.32 | 24.93 | 0.00 |