

# Identification of rare traditional grapevine cultivars using SSR markers and their geographical location within the Czech Republic

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## Electronic Supplementary Material (ESM)

The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

Table S1. SSR profiles of analysed cultivars

| Cultivars/SSR loci       | VVS 2 |     | VVMD 5 |     | VVMD 7 |     | VVMD 25 |     | VVMD 27 |     | VVMD 28 |     | VVMD 32 |     | VrZAG 62 |     | VrZAG 79 |     |
|--------------------------|-------|-----|--------|-----|--------|-----|---------|-----|---------|-----|---------|-----|---------|-----|----------|-----|----------|-----|
| Alphonse Laval           | 136   | 138 | 228    | 240 | 246    | 252 | 242     | 258 | 182     | 182 | 242     | 242 | 251     | 271 | 184      | 202 | 235      | 247 |
| Alphonse Laval<br>Volský | 136   | 138 | 228    | 236 | 246    | 252 | 242     | 258 | 182     | 182 | 242     | 242 | 251     | 271 | 184      | 202 | 235      | 247 |
| Augusta Luise            | 138   | 140 | 230    | 236 | 240    | 244 | 240     | 256 | 176     | 192 | 256     | 242 | 239     | 271 | 186      | 192 | 245      | 251 |
| Bouvierův hrozen         | 136   | 154 | 230    | 230 | 230    | 240 | 252     | 252 | 182     | 191 | 216     | 266 | 271     | 271 | 192      | 194 | 235      | 247 |
| Bzenecká Lipka           | 146   | 154 | 228    | 236 | 246    | 254 | 252     | 258 | 178     | 186 | 250     | 256 | 251     | 271 | 192      | 202 | 239      | 241 |
| Cabernet Franc           | 142   | 150 | 228    | 242 | 236    | 260 | 242     | 258 | 178     | 186 | 250     | 258 | 239     | 257 | 192      | 202 | 243      | 255 |
| Čabaňská perla           | 136   | 158 | 238    | 238 | 244    | 246 | 244     | 244 | 176     | 178 | 216     | 266 | 271     | 271 | 184      | 202 | 251      | 255 |
| Damascenka               | 138   | 154 | 230    | 240 | 244    | 246 | 252     | 258 | 176     | 180 | 256     | 256 | 251     | 271 | 186      | 202 | 245      | 245 |
| Dívčí hrozen/<br>Leánka  | 136   | 136 | 228    | 238 | 244    | 250 | 252     | 258 | 182     | 192 | 246     | 258 | 247     | 251 | 190      | 192 | 233      | 247 |
| Favorit                  | 138   | 146 | 238    | 240 | 244    | 246 | 258     | 258 | 176     | 182 | 216     | 232 | 241     | 271 | 184      | 192 | 235      | 247 |
| Hedvábné žluté           | 148   | 158 | 230    | 238 | 244    | 244 | 244     | 252 | 182     | 182 | 232     | 244 | 251     | 261 | 190      | 192 | 235      | 247 |
| Chrupka bílá             | 136   | 146 | 230    | 238 | 236    | 244 | 244     | 258 | 182     | 186 | 216     | 266 | 239     | 239 | 192      | 202 | 247      | 255 |
| Chrupka červená          | 136   | 146 | 230    | 238 | 236    | 244 | 244     | 258 | 182     | 186 | 216     | 266 | 239     | 239 | 192      | 202 | 247      | 255 |
| Chrupka<br>Jalabertova   | 136   | 146 | 230    | 238 | 236    | 244 | 244     | 258 | 182     | 186 | 216     | 266 | 239     | 239 | 192      | 202 | 247      | 255 |
| Chrupka<br>petrželolistá | 136   | 146 | 230    | 238 | 236    | 244 | 244     | 258 | 182     | 186 | 216     | 266 | 239     | 239 | 192      | 202 | 247      | 255 |
| Jakubské                 | 140   | 154 | 230    | 240 | 236    | 240 | 242     | 252 | 182     | 186 | 216     | 258 | 239     | 271 | 186      | 192 | 235      | 241 |
| Kadarka                  | 136   | 138 | 226    | 242 | 238    | 244 | 254     | 262 | 184     | 184 | 218     | 218 | 271     | 271 | 186      | 202 | 245      | 257 |
| Kamenorůžák              | 138   | 158 | 230    | 248 | 236    | 244 | 244     | 258 | 176     | 178 | 216     | 258 | 251     | 271 | 192      | 194 | 233      | 255 |
| Madlenka<br>královská    | 138   | 158 | 238    | 242 | 244    | 244 | 244     | 258 | 178     | 191 | 216     | 242 | 239     | 271 | 192      | 202 | 245      | 255 |
| Madlenka ranná           | 138   | 158 | 238    | 242 | 244    | 244 | 244     | 258 | 178     | 191 | 216     | 242 | 239     | 271 | 192      | 202 | 245      | 255 |
| Malingrovo ranné         | 140   | 140 | 230    | 240 | 236    | 240 | 242     | 258 | 176     | 186 | 258     | 258 | 251     | 271 | 186      | 192 | 241      | 251 |
| Mlynářka                 | 140   | 154 | 230    | 240 | 236    | 240 | 242     | 252 | 182     | 186 | 216     | 234 | 239     | 271 | 186      | 192 | 235      | 241 |
| Modrý Janek              | 136   | 154 | 234    | 234 | 246    | 256 | 244     | 252 | 178     | 186 | 256     | 246 | 239     | 255 | 192      | 202 | 241      | 245 |
| Modrý Portugal           | 146   | 154 | 228    | 234 | 240    | 252 | 252     | 252 | 178     | 191 | 226     | 258 | 251     | 271 | 186      | 202 | 245      | 255 |
| Muškat Ottonel           | 136   | 146 | 228    | 230 | 236    | 240 | 252     | 258 | 176     | 186 | 256     | 266 | 239     | 263 | 186      | 192 | 251      | 255 |
| Muškat žlutý             | 136   | 136 | 230    | 238 | 230    | 246 | 244     | 252 | 176     | 191 | 244     | 266 | 263     | 271 | 184      | 194 | 247      | 251 |
| Ortliebské<br>(Lednice)  | 136   | 144 | 234    | 240 | 244    | 250 | 242     | 270 | 176     | 186 | 234     | 240 | 261     | 271 | 186      | 196 | 245      | 255 |

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Table S1 to be continued

| Cultivars/SSR loci       | VVS 2 |     | VVMD 5 |     | VVMD 7 |     | VVMD 25 |     | VVMD 27 |     | VVMD 28 |     | VVMD 32 |     | VrZAG 62 |     | VrZAG 79 |     |
|--------------------------|-------|-----|--------|-----|--------|-----|---------|-----|---------|-----|---------|-----|---------|-----|----------|-----|----------|-----|
| Ortliebské ranné         | 140   | 146 | 236    | 240 | 236    | 240 | 242     | 258 | 178     | 186 | 216     | 226 | 239     | 271 | 186      | 194 | 239      | 241 |
| Ortliebské žluté         | 140   | 146 | 236    | 240 | 236    | 240 | 242     | 258 | 178     | 186 | 216     | 226 | 239     | 271 | 186      | 194 | 239      | 241 |
| Portugalské bílé         | 146   | 154 | 228    | 234 | 240    | 252 | 252     | 252 | 178     | 191 | 226     | 258 | 251     | 271 | 186      | 202 | 245      | 255 |
| Portugalské šedé         | 146   | 154 | 228    | 234 | 240    | 252 | 252     | 252 | 178     | 191 | 226     | 258 | 251     | 271 | 186      | 202 | 245      | 255 |
| Prachtraube              | 138   | 158 | 230    | 248 | 236    | 244 | 244     | 258 | 176     | 178 | 216     | 258 | 251     | 271 | 192      | 194 | 233      | 255 |
| Ryzlink aromatický       | 136   | 154 | 228    | 238 | 240    | 254 | 242     | 250 | 182     | 186 | 216     | 256 | 251     | 271 | 186      | 192 | 235      | 241 |
| Ryzlink aromatický       | 136   | 154 | 228    | 238 | 240    | 254 | 242     | 250 | 182     | 186 | 216     | 232 | 251     | 271 | 186      | 192 | 235      | 241 |
| Ryzlink buketový         | 136   | 154 | 228    | 238 | 240    | 254 | 242     | 250 | 182     | 186 | 216     | 256 | 251     | 271 | 186      | 192 | 235      | 241 |
| Ryzlink červený          | 146   | 154 | 228    | 236 | 246    | 254 | 252     | 258 | 178     | 186 | 226     | 232 | 251     | 271 | 192      | 202 | 239      | 241 |
| Ryzlink rýnský           | 146   | 154 | 228    | 236 | 246    | 254 | 252     | 258 | 178     | 186 | 226     | 232 | 251     | 271 | 192      | 202 | 239      | 241 |
| Ryzlink vlašský          | 138   | 154 | 228    | 240 | 244    | 254 | 258     | 272 | 182     | 186 | 244     | 256 | 239     | 271 | 192      | 194 | 247      | 247 |
| Sylvánské modré          | 154   | 156 | 228    | 234 | 240    | 244 | 244     | 252 | 186     | 191 | 250     | 258 | 271     | 271 | 186      | 202 | 245      | 247 |
| Sylvánské ranné          | 154   | 156 | 228    | 234 | 240    | 244 | 244     | 252 | 186     | 191 | 226     | 234 | 271     | 271 | 186      | 202 | 245      | 247 |
| Sylvánské zelené ranné   | 154   | 156 | 228    | 234 | 240    | 244 | 244     | 252 | 186     | 191 | 226     | 234 | 271     | 271 | 186      | 202 | 245      | 247 |
| Tramín bílý              | 154   | 154 | 234    | 240 | 240    | 254 | 252     | 252 | 186     | 186 | 256     | 258 | 239     | 271 | 186      | 192 | 241      | 247 |
| Tramín červený           | 154   | 154 | 234    | 240 | 240    | 254 | 252     | 252 | 186     | 186 | 232     | 234 | 239     | 271 | 186      | 192 | 241      | 247 |
| Tramín modrý             | 154   | 154 | 234    | 240 | 240    | 254 | 252     | 252 | 186     | 186 | 256     | 258 | 239     | 271 | 186      | 192 | 241      | 247 |
| Trolínské modré          | 138   | 158 | 240    | 242 | 244    | 244 | 244     | 258 | 178     | 182 | 236     | 244 | 251     | 271 | 190      | 192 | 235      | 257 |
| Veltlínské červené ranné | 136   | 154 | 234    | 242 | 244    | 250 | 244     | 252 | 186     | 191 | 258     | 266 | 263     | 271 | 190      | 202 | 247      | 247 |
| Veltlínské červené ranné | 140   | 146 | 242    | 248 | 244    | 250 | 244     | 252 | 186     | 191 | 234     | 266 | 263     | 271 | 190      | 194 | 247      | 247 |
| Veltlínské červenobílé   | 134   | 136 | 242    | 248 | 236    | 250 | 242     | 244 | 180     | 191 | 244     | 266 | 255     | 263 | 190      | 194 | 247      | 247 |
| Veltlínské zelené        | 136   | 154 | 234    | 234 | 244    | 254 | 244     | 252 | 186     | 191 | 232     | 246 | 239     | 255 | 192      | 202 | 241      | 245 |
| Veritas                  | 136   | 146 | 228    | 230 | 240    | 246 | 250     | 256 | 186     | 191 | 216     | 250 | 271     | 271 | 192      | 202 | 241      | 247 |
| US1 - Chatus             | 136   | 156 | 240    | 242 | 248    | 254 | 244     | 244 | 178     | 186 | 240     | 266 | 261     | 271 | 198      | 202 | 243      | 257 |
| US2 - Saint Laurent      | 140   | 154 | 230    | 230 | 236    | 254 | 242     | 252 | 182     | 186 | 232     | 258 | 261     | 271 | 192      | 192 | 235      | 243 |
| US3 - no match           | 128   | 136 | 238    | 238 | 244    | 256 | 244     | 256 | 178     | 182 | 250     | 232 | 239     | 239 | 200      | 204 | 243      | 255 |
| US4 - Chasselas blanc    | 136   | 146 | 230    | 238 | 236    | 244 | 244     | 258 | 182     | 186 | 216     | 266 | 239     | 239 | 192      | 202 | 247      | 255 |

Table S2. Comparison of SSR profiles of Modrý Janek, Hans and Veltliner gruen

| Cultivar          | Source of data | VVS 2 |      | VVMD 5 |      | VVMD 7 |      | VVMD 25 |        | VVMD 27 |      | VVMD 28 |      | VVMD 32 |      | VrZAG 62 |      | VrZAG 79 |      |
|-------------------|----------------|-------|------|--------|------|--------|------|---------|--------|---------|------|---------|------|---------|------|----------|------|----------|------|
| Modrý Janek       | this study     | n+10  | n+28 | n+10   | n+10 | n+18   | n+28 | n+6     | n+14   | n+6     | n+14 | n+18    | n+32 | n+5     | n+21 | n+20     | n+30 | n+8      | n+12 |
| Hans              | DEU098         | n+8   | n+10 | n+12   | n+24 | n+18   | n+22 | NA      | NA     | n+8     | n+14 | NA      | NA   | NA      | NA   | n+18     | n+30 | n+14     | n+14 |
| Hans weiss        | DEU098         | n+8   | n+10 | n+12   | n+24 | n+18   | n+22 | n+4     | n+4    | n+8     | n+14 | n+20    | n+52 | n+15    | n+29 | n+18     | n+30 | n+14     | n+14 |
| Hansen            | FRA139         | n+8   | n+10 | n+12   | n+24 | n+18   | n+22 | n+4     | n+4    | n+8     | n+14 | n+20    | n+52 | n+15    | n+29 | n+18     | n+30 | n+14     | n+14 |
| Veltlínské zelené | this study     | n+10  | n+28 | n+10   | n+10 | n+16   | n+26 | n+6     | n+14   | n+14    | n+19 | n+18    | n+32 | n+5     | n+21 | n+20     | n+30 | n+8      | n+12 |
| Veltliner gruen   | AUT024         | n+10  | n+28 | n+10   | n+10 | n+16   | n+26 | n+6     | n+14   | n+14    | n+19 | n+18    | n+32 | n+6     | n+21 | n+20     | n+30 | n+8      | n+12 |
| Veltliner gruen   | DEU098         | n+10  | n+28 | n+10   | n+10 | n+16   | n+26 | n+6     | n + 14 | n+14    | n+19 | n+18    | n+32 | n+5     | n+21 | n+20     | n+30 | n+8      | n+12 |

Allele size has been converted to codes by This et al. (2004) to compare allele sizes obtained in different laboratories; NA – loci were not analysed

Table S3. Institute codes used in manuscript in Table 1 (source: <http://www.eu-vitis.de/index.php>)

| Institute code | Institute                                                                                                                         | Country        |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|
| AUT024         | Höhere Bundeslehranstalt und Bundesamt für Wein- und Obstbau<br>HBLAuBA Klosterneuburg                                            | Austria        |
| CZE041         | Research Institute of Crop Production<br>Research Station of Viticulture, Karlstejn                                               | Czech Republic |
| DEU098         | Julius Kühn-Institut Bundesforschungsinstitut für Kulturpflanzen (JKI)<br>Institut für Rebenzüchtung Geilweilerhof, Siebeldingen  | Germany        |
| ESP080         | Instituto Madrileño de Investigación Agraria y Alimentaria (I.M.I.A)<br>Finca „El Encin“, Alcalá de Henares - I.M.I.D.R.A, Madrid | Spain          |
| FRA 139        | INRA - Unité Expérimentale du Domaine de Vassal & Montpellier SupAgro                                                             | France         |
| FRA274         | ENTAV French Vine and Wine Institute / ENTAV International Vine Selection Center<br>Le Grau du Roi                                | France         |
| HUN045         | FVM Szőlészeti és Borászati Kutatóintézet Pecs<br>Transdanubian Research Institute of Viticulture and Enology                     | Hungary        |
| ITA362         | IASMA - Istituto Agrario di S. Michele all' Adige                                                                                 | Italy          |
| ITA388         | CRA - Centro di Ricerca per la Viticoltura<br>Sez. Ampelografia e Miglioramento Genetico, Conegliano (Treviso)                    | Italy          |

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