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Online Supplementary material:

Piiroinen et al. "Pre-invasion history and demography shape the genetic variation in the insecticide resistance-related acetylcholinesterase 2 gene in the invasive Colorado potato beetle".

Additional file 2 Frequencies (%) of observed patterns of non-synonymous mutations of *AChE2* variants in North American and European Colorado potato beetle populations. S291G and R30K have been associated with organophosphate resistance in the species

| | | Observed Frequencies (%) | | | | | | | | | | |
|---------|-------------------------|--------------------------|---------|--------|--------|--------|----------|--------|---------|---------|--------|-------|
| Pattern | Non-synonymous mutation | Haplotype(s) | Morelos | Oaxaca | Puebla | Kansas | Colorado | Russia | Finland | Estonia | Poland | Italy |
| a | - | h2,h22 | - | - | - | 5.6 | 5 | 45 | - | 20 | 30 | 50 |
| b | S291G | h1,h4-h7, | - | - | 38.9 | 88.9 | 60 | 50 | 85 | 60 | 70 | 30 |
| | | h10,h13,h15, | | | | | | | | | | |
| | | h16,h18,h20 | | | | | | | | | | |
| | | h21,h24-h29, | | | | | | | | | | |
| | | h31,h32, h33, | | | | | | | | | | |
| | | h36,h37,h39,h41 | | | | | | | | | | |
| c | S291G, Y54H, | h3,h9,h17 | _ | _ | _ | _ | 5 | 5 | 15 | 20 | _ | 20 |
| d | S291G, R30K | h12 | _ | _ | _ | _ | 5 | _ | _ | _ | _ | _ |
| e | S291G, P150S | h11 | - | - | _ | _ | 5 | - | - | - | - | - |
| f | S291G, T151S | h14 | _ | _ | _ | _ | 5 | _ | _ | _ | _ | _ |
| g | S291G, L50M | h19 | - | _ | _ | _ | 10 | _ | - | - | _ | _ |
| h | S291G, R30K, A238D | h23 | - | - | - | - | 5 | - | - | - | - | - |
| i | S291G, S55A | h30 | - | - | - | 5.6 | - | - | - | - | - | - |
| j | S291G, A239T | h34,h35,h38 | - | - | 55.6 | - | - | - | - | - | - | - |
| k | S291G, Q3K | h40 | - | - | 5.6 | - | - | - | - | - | - | - |
| 1 | S291G, Y205F | h42-h47, h50 | 80 | 95 | _ | _ | - | - | - | - | - | - |
| m | S291G, Y205F, P41S | h48,h49 | 20 | 5 | - | - | - | - | - | - | - | - |