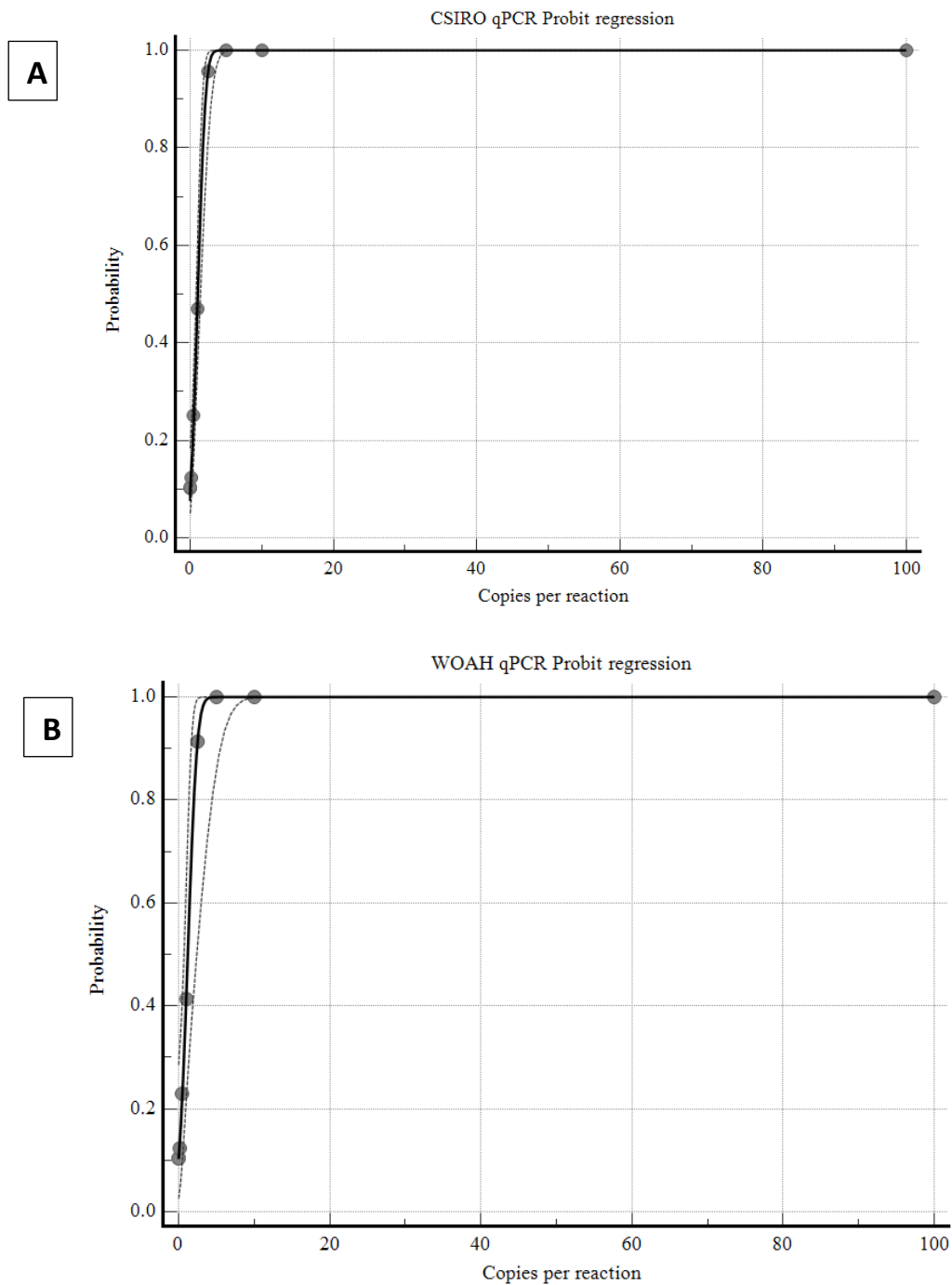Table S1. Bayesian latent class model outputs for three conditionally dependent tests in three defined populations for WSSV (M_0, saturated model) including sensitivity analysis results.

Assay	Parameter	Posterior median (95% CrI) *Informative priors (Table 1)*	Sensitivity analysis 1 *Flat Se1, Sp1, Se2, Sp2*	Sensitivity analysis 2 *Flat Se1, Sp1, Se2, Sp2 Prev1, Prev2, Prev3*
Test A (WOAH qPCR)	Sensitivity (Se1)	0.772 (0.718, 0.821)	0.807 (0.740, 0.863)	0.806 (0.739, 0.862)
	Specificity (Sp1)	0.996 (0.987, 0.999)	0.972 (0.919, 0.999)	0.974 (0.915, 0.999)
Test B (CSIRO qPCR)	Sensitivity (Se2)	0.916 (0.877, 0.947)	0.967 (0.926, 0.994)	0.967 (0.926, 0.992)
	Specificity (Sp2)	0.995 (0.984, 0.999)	0.974 (0.919, 0.998)	0.975 (0.921, 0.998)
Test C (SMP)	Sensitivity (Se3)	0.949 (0.898, 0.981)	0.976 (0.933, 1.000)	0.974 (0.934, 0.999)
	Specificity (Sp3)	0.994 (0.965, 1.000)	0.992 (0.952, 1.000)	0.992 (0.956, 1.000)
Inferred prevalence	POP1 (Prev1)	0.531 (0.433, 0.627)	0.526 (0.430, 0.622)	0.525 (0.428, 0.620)
	POP2 (Prev2)	0.371 (0.280, 0.468)	0.360 (0.271, 0.459)	0.359 (0.270, 0.453)
	POP3 (Prev3)	0.905 (0.827, 0.957)	0.885 (0.798, 0.947)	0.897 (0.808, 0.955)
Test correlation	$\rho D^{+,12}$	0.370 (0.160, 0.538)	0.263 (0.062, 0.460)	0.258 (0.065, 0.450)
	$\rho D^{+,13}$	0.168 (0.018, 0.349)	0.200 (−0.062, 0.495)	0.200 (−0.026, 0.450)
	$\rho D^{+,23}$	0.215 (0.012, 0.550)	0.126 (−0.450, 0.635)	0.130 (−0.275, 0.577)
	$\rho D^{-,12}$	0.490 (−0.811, 0.978)	0.631 (−0.259, 0.975)	0.641 (−0.324, 0.975)
	$\rho D^{-,13}$	0.235 (−0.883, 0.964)	0.286 (−0.763, 0.948)	0.297 (−0.717, 0.953)
	$\rho D^{-,23}$	0.056 (−0.944, 0.948)	−0.088 (−0.951, 0.912)	−0.102 (−0.951, 0.915)

Figure S1. Limit of detection (LOD) analysis results shown for CSIRO and WOAH qPCR assays (A and B), and SMP WSSV (C). LOD results for (A) CSIRO qPCR is 2.4 copies per reaction, (B) WOAH qPCR is 2.8 copies per reaction, and SMP WSSV is 2.9 copies per reaction. Twenty replicates were tested at each concentration (A + B) and four replicates tested at each concentration (C + D). Titration points assessed: (A + B) 100 / 10 / 5 / 2.5 / 1 / 0.5 / 0.1 / 0.01, and (C + D) 500 / 250 / 125 / 64 / 62.5 / 16 / 4 / 1 / 0.25.
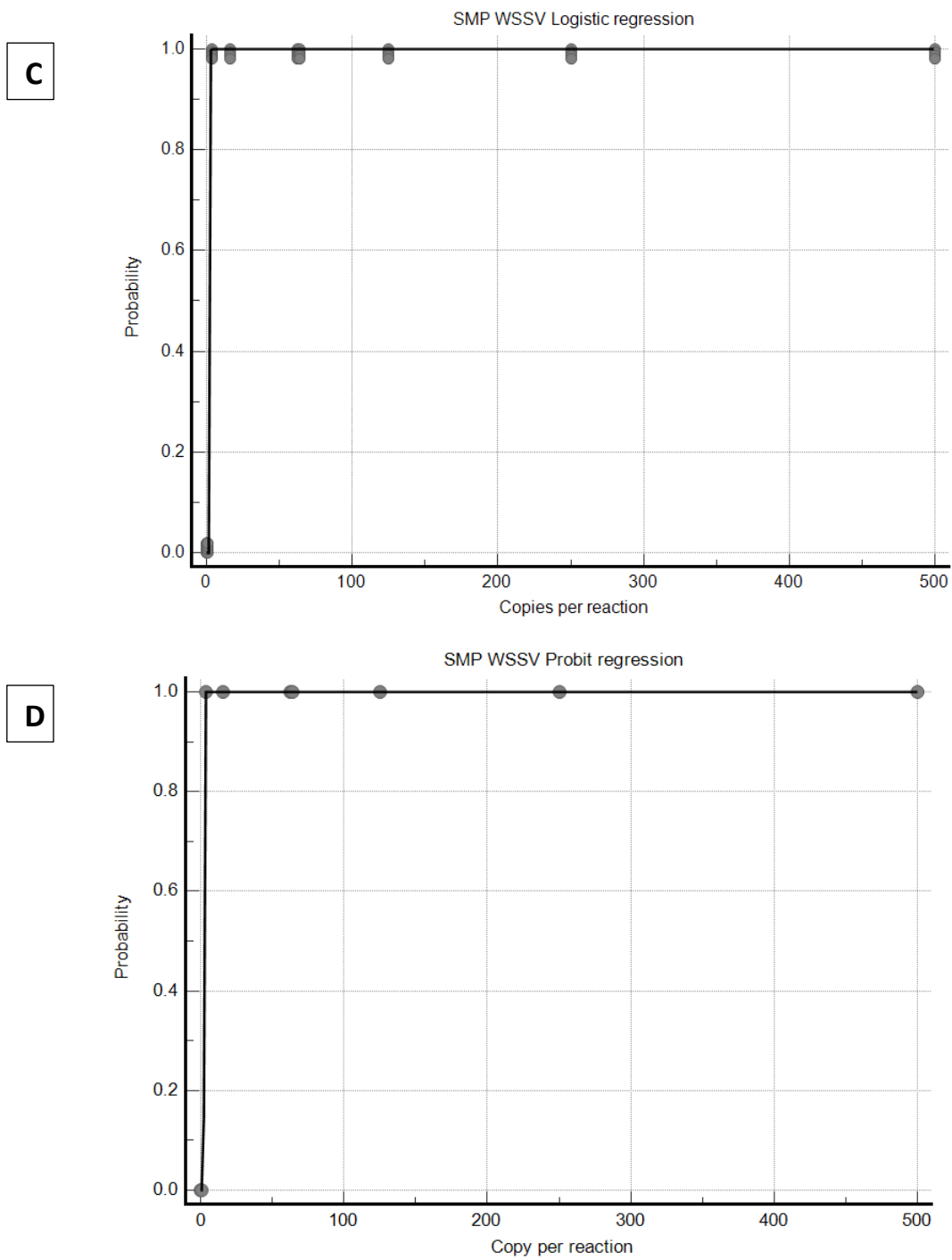
C

SMP WSSV Logistic regression

D

SMP WSSV Probit regression

Figure S1. (continued)