ELECTRONIC SUPPORTING INFORMATION S1. ADDITIONAL VISUALISATIONS

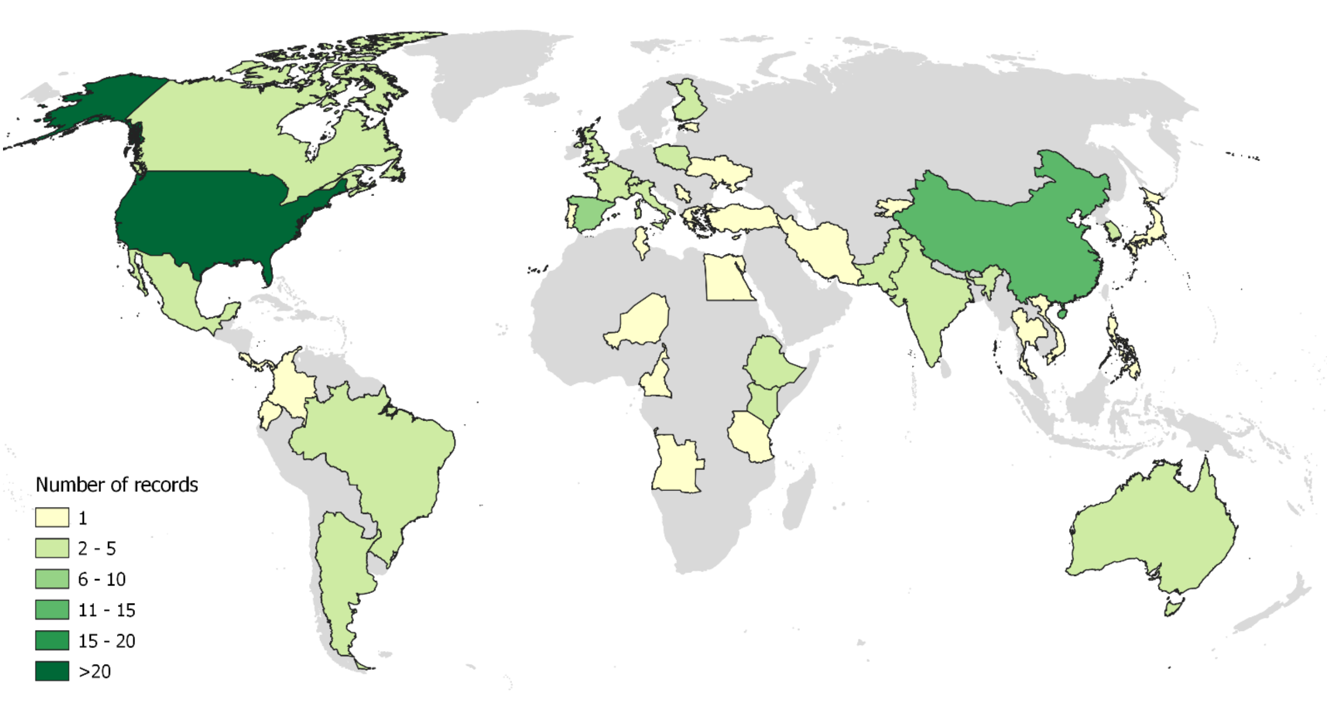

Figure 1. Map showing locations relevant to core articles on single named species and multiple pathogens identified in Stage 1 of the review of published articles on disease outbreaks and epidemics. This reprojects the results shown in Figure 4 of the main text, but on a country-by-country basis. 7 reports recorded at higher geographic levels (e.g. continent) are omitted.

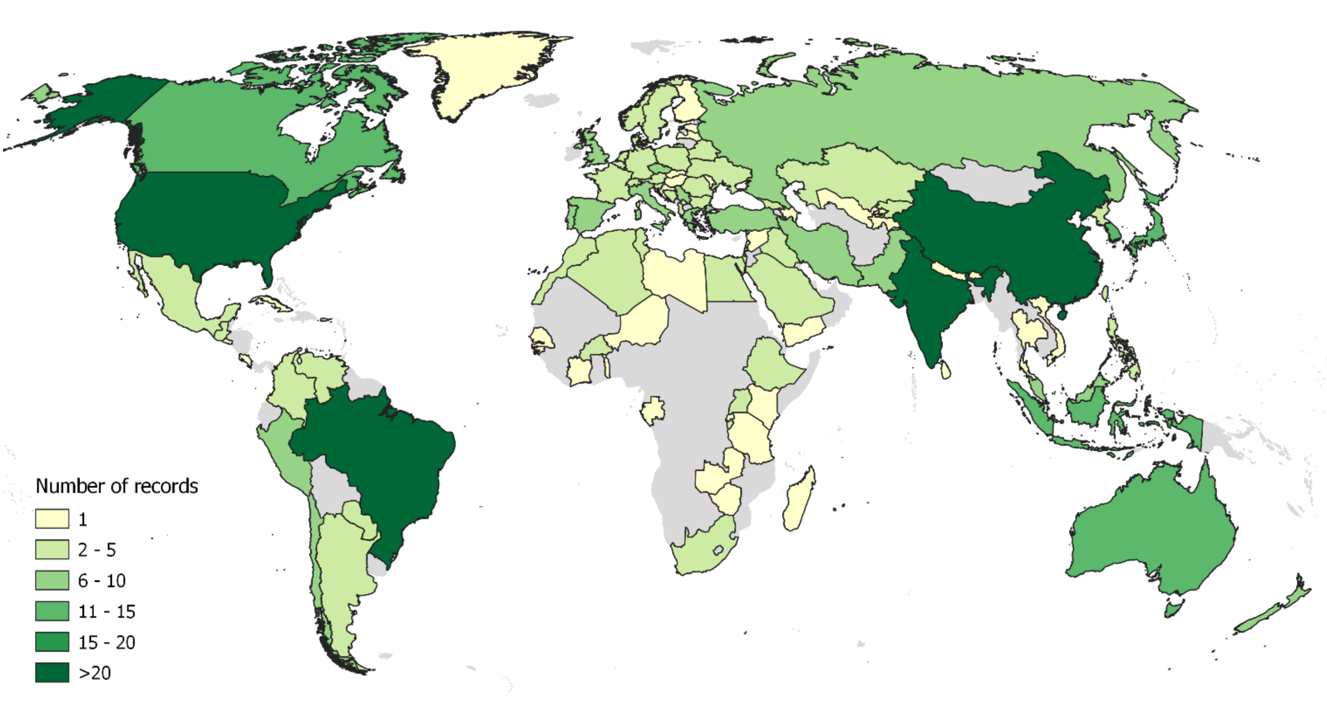

Figure 2. Map showing locations of new pathogen records reported in 2021 in the CABI Distribution Database based on the automated process. This reprojects the results shown in Figure 6 of the main text, but on a country-by-country basis.

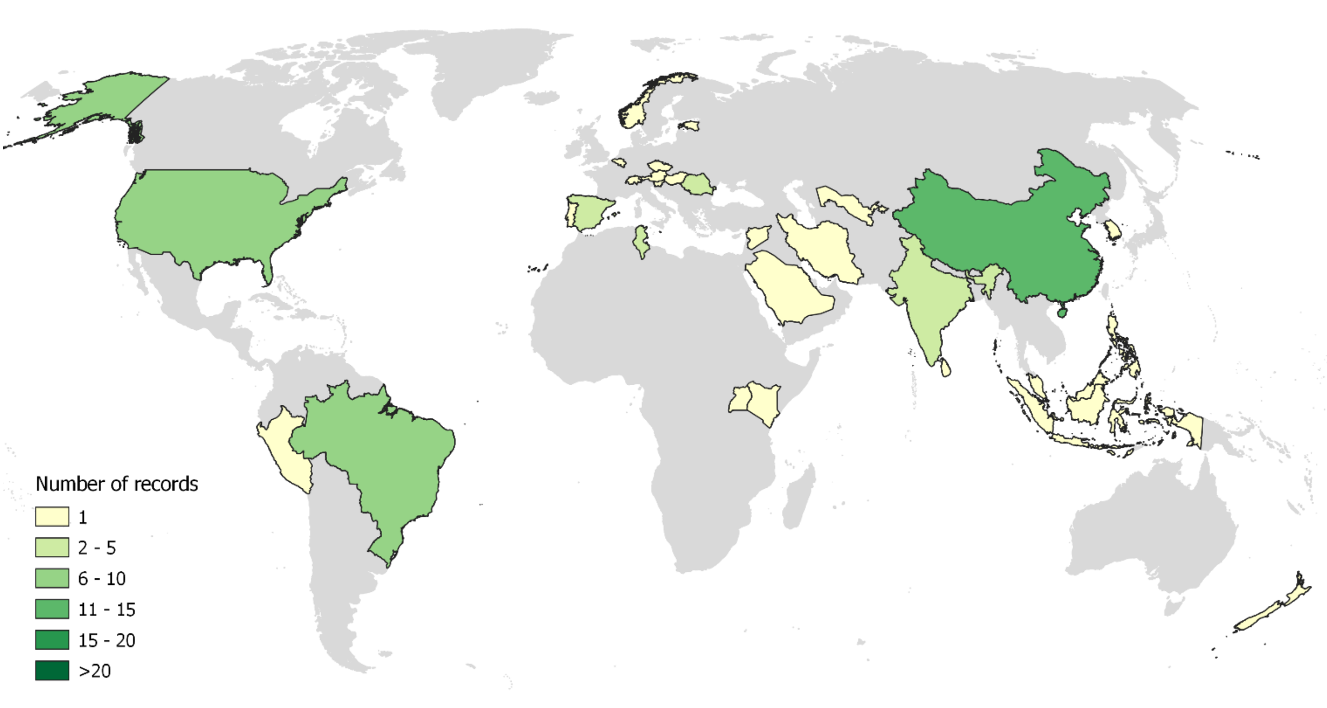

***Figure 3**. Map showing locations of new pathogen records reported in 2021 in the CABI Distribution Database following manual review.* This reprojects the results shown in Figure 7 of the main text, but on a country-by-country basis.

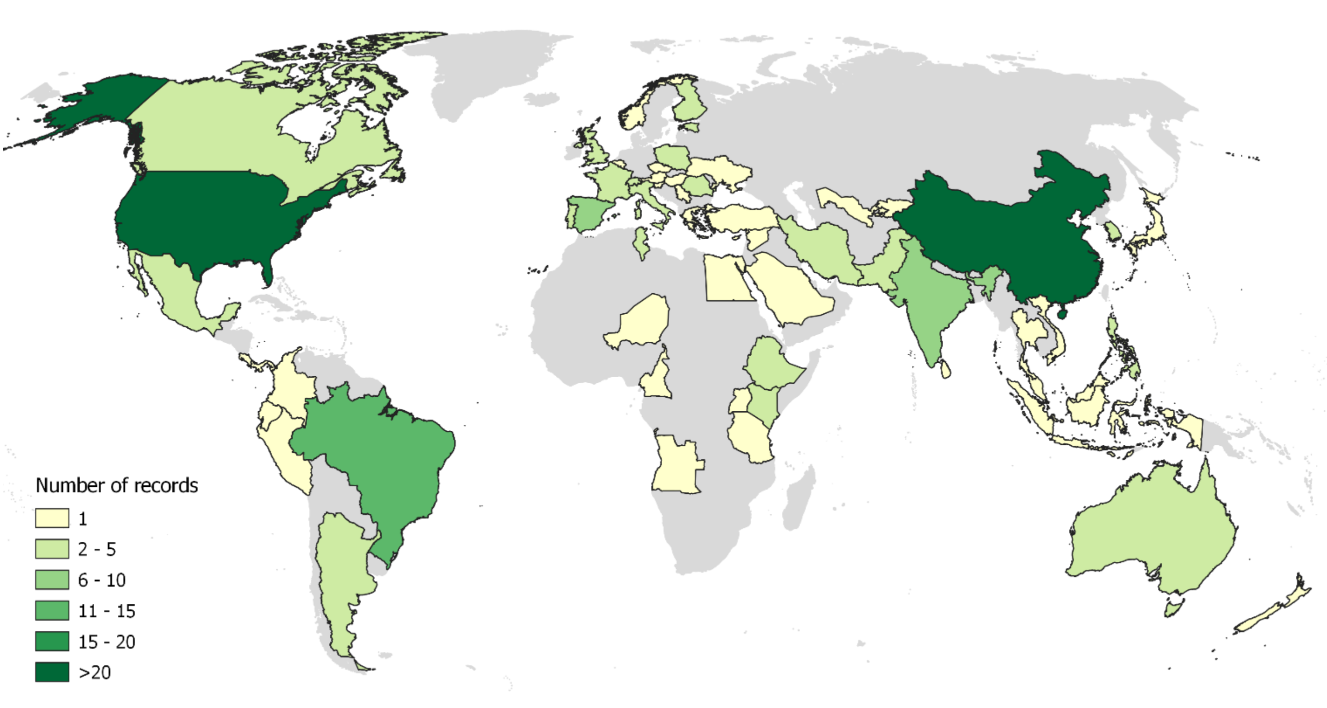

Figure 4. Map showing combined locations of new pathogen records reported in 2021 from both the literature review and from the CABI Distribution Database (following manual review). This reprojects the results shown in Figure 8 of the main text, but on a country-by-country basis.

ELECTRONIC SUPPORTING INFORMATION S2. ADDITIONAL SOURCE MATERIAL

Supplementary articles retrieved in Stage 2 on the named species (categories) identified in Stage 1, but not discussed in the main text as the total number of articles was fewer than five. The relevant species listed in Table 1 of the main text are noted in italics following each citation.

Fungi (Table 1; Section 1)

Costa, M. M., Silva, B. A. A. S., Moreira, G. M., and Pfenning, L. H. 2021. *Colletotrichum falcatum* and *Fusarium* species induce symptoms of red rot in sugarcane in Brazil. Plant Pathology 70: 1807-1818. *Fusarium* species complex

Dollom, M., Hyde, K.D., Dong, W., Liao, C.-F., Suwannarach, N., and Lumyong, S. 2021. The plant family Asteraceae is a cache for novel fungal diversity: novel species and genera with remarkable ascospores in Leptosphaeriaceae. Frontiers in Microbiology 12: 660261. *Plenodomus* spp.

Gurjar, M. S., Aggarwal, R., Jain, S., Sharma, S., Singh, J., Gupta, S., et al. 2021. Multilocus sequence typing and single nucleotide polymorphism analysis in *Tilletia indica* isolates inciting Karnal bunt of wheat. Journal of Fungi 7: 103. *Tilletia indica*

Heitmann, S., Bergmann, G. E., Barge, E., Ridout, M., Newconbe, G., and Busby, P. E. 2021. Cultural seed microbiota of *Populus tricocarpa*. Pathogens 10: 653. *Diaporthe* spp.

Höckerstedt L., Susi, H., and Laine, A.-L. 2021. Effect of maternal infection on progeny growth and resistance mediated by maternal genotype and nutrient availability. Journal of Ecology 109: 1439-1451. *Podosphaeria plantaginis*

Jiang, Z.-R., Masuya, H., and Kajimura, H. 2021. Novel symbiotic relationship between *Euwallacia* ambrosia beetle and Fusarium fungus on fig trees in Japan. Frontiers in Microbiology 12: 725210. *Ceratocystis ficicola*

Solis-Palacios, R., Hernández-Ramírez, G., Salinas-Ruiz, J. V., and Gómez-Merino, F. C. 2021. Effect and compatibility of phosphite with *Trichoderma* sp. isolates in control of the *Fusarium* species complex causing pokkah boeng in sugarcane. Agronomy 11: 1099. *Fusarium spp.* complex

Sun, Q., Li, L., Guo, F., Zhang K., Dong, J., Luo, Y., et al. 2021. Southern corn rust caused by *Puccinia polysora* Underw: a review. Phytopathology Research 3: 25. *Puccinia polysora*

Yang, Q., Jiang, N., and Tian, C.-M. 2021. New species and records of Diaporthe from Jiangxi Province, China. MycoKeys 77: 41-64. *Diaporthe* spp.

You, M. P., Bitew, B., Kermal, S. A., van Leur, J., and Barbetti, M.J. 2021. *Physoderma* not *Olpidium* is the true cause of faba bean gall disease of *Vicia fabae* in Ethiopia. Plant Pathology 70: 1180-1194. *Physoderma* sp.

Oomycetes (Table 1; Section 2)

Cardillo, E., Abad, E., and Meyer, S. 2021. Iberian oak decline caused by *Phytophthora cinnamomi*: a spatiotemporal analysis incorporating the effect of host heterogeneities at landscape scale. Forest Pathology 51: e12667. *Phytophthora cinnamomi*

Hornero, A., Zarco-Tejada, P. J., Quero, J. L., North, P. R. J., Ruiz-Gomez, F. J., Sanchez-Cuesta, R., et al. 2021. Modelling hyperspectral and thermal-based plant traits for the early detection of Phytophthora-induced symptoms in oak decline. Remote Sensing of Environment 263: 112570. *Phytophthora cinnamomi*

Landa, B. B., Aria-Giraldo, L. F., Henricot, B., Montes-Borrego, M., Shuttleworth, L. A., and Pérez-Sierra, A. 2021. Diversity of *Phytophthora* species detected in disturbed and undisturbed British soils using high throughput sequencing targetting ITS rRNA and COI mtDNA regions. Forests 12:229. *Phytophthora austrocedri.*

Roy, S. G., Dey, T., Cooke, D. E. L., and Cooke, L. R. 2021. The dynamics of *Phytophthora infestans* populations in the major potato-growing regions of Asia – A review 70: 1015-1031. *Phytophthora infestans*

Saville, A. C., and Ristaino, J. B. 2021. Global historic pandemics caused by the FAM-1 genotype of *Phytophthora infestans* on six continents. Scientific Reports 11: 11235. *Phytophthora infestans*

Vinh, N. T., and Tran, K. V. Q. 2022. Prevalence of crown and root rot on hot chilli in Central Vietnam and potential of disease management with chicken manure. Journal of Plant Pathology: Published online 13 April 2022. *Phytophthora capsici*

Wang, Q., and Zhang, S. 2021. Applying drone-based spatial mapping to help growers manage crop diseases. Journal of Extension 59: 11. *Phytophthora capsici*

Bacteria (Table 1; Section 3)

Elsayed, T. R., Grosch, R., and Smalla, K. 2021. Potato plant spheres and to a lesser extent the soil type influence the proportion and diversity of bacterial isolates with in vivo antagonistic activity towards *Ralstonia solanacearum*. FEMS Microbiology 97: fiab038. *Ralstonia solanacearum*

Phytoplasmas (Table 1; Section 4)

Ćurčić, Z., Kosovac, A., Stepanović, J., Recanović, E., Kube, M., and Duduk, B. 2021. Multilocus genotyping of '*Candidatus* Phytoplasma solani' associated with rubbery taproot disease of sugar beet in the Pannonian plain. Microorganisms 9: 1950. *Ca. Phytoplasma solani*.

Viruses (Table 1; Section 5)

Martins de Oliveira, C., and Frizzas M. R. 2021. Eight decades of *Dalbulbus maidis* (de Long & Wolcott) (Hemiptera: Cicadellidae) in Brazil: what we know and what we need to know. Neotropical Entomology 51: 1-17. *Maize rayado fino virus and vectors*

Suvi, W. T., Shumelia, H., Laing, M., Matthew, I., and Shayanowako, A. I. T. 2021. Variation among Tanzania rice germplasm collections based on agronomic traits and resistance to rice yellow mottle virus. Agronomy 11: 391. *Rice yellow mottle virus*

Toffa, J., Loko, Y. L. E., Djedatin, G., Gbemavo, C. D. S. J., Orobiyi, A., Tchakpa, C., et al. 2021. Rice pests in the republic of Benin: farmers' perceptions, knowledge and management practices. Pest Management Science 77: 5058-5071. *Rice yellow mottle virus*

Tu, L., Wu, S., Gan, S., Zhao, W., Li, S., Cheng, Z., et al. 2022. A simplified RT-PCR assy for the simultaneous detection of tomato chlorosis virus and tomato yellow leaf curl virus in tomato. Journal of Virological Methods 299: 114282. *Tomato chlorosis virus*

Nematodes (Table 1; Section 6)

Abdulsalam, S., Peng, H., Yao, Y., Fan, L., Jiang, R., Shao, H. 2021. Prevalence and molecular diversity of plant-parasitic nematodes of yam (*Dioscorea* spp.) in China, with focus on *Merlinius* spp. Biology 10: 1299. *Meloidogyne spp complexes*

Ashmit, K. C., Yan, G., Acharya, K., Plaisance, A., Khan, M. F. R. 2021. Occurrence of plant parasitic nematodes in sugarbeet fields of North Dakota. Crop Protection 142: 105503. *Meloidogyne spp complexes*

Damarola, F. Y., Lewu, F. B., Malan, A. P. 2021. Diversity and population distribution of nematodes associated with honeybush (*Cyclopia* spp.) and rooibos (*Aspalanthus linearis*) in the Western Cape province of South Africa. Heliyon 7: e06306. *Meloidogyne spp complexes*

Karimpour, E., Niknam, G., Khodaei, S., Arzanlou, M. 2021. Morphology and DNA phylogeny differentiate several anamorphic ascomycetes associated with a cereal cyst nematode, *Heterodera filipjevi*, and new records for the mycobiota of Iran. Nova Hedwigia 113: 429-451. *Heterodera glycines*

Knoetze, R., van den Berg, E., Girgan, C., van der Walt, L. 2021. Morphological and molecular characterisation of root-lesion nematodes (*Pratylenchus* spp.) (Rhabditida: Pratylenchidae) associated with apple in South Africa. Russian Journal of Nematology 29: 143-168. *Pratylenchus hippeastri*

Laasli, S-E., Lahlali, R., Hajjaj, B., Saleh, A., Dababat, A. A., Mokrini, F. 2021. Diversity and distribution of plant-parasitic nematodes associated with watermelon, in northwest Morocco. Archives of Phytopathology and Plant Protection 54: 1822-1837. *Meloidogyne spp complexes*

Mwamula, A. O., and Lee, D. W. 2021. Occurrence of plant-parasitic nematodes of turfgrass in Korea. The Plant Pathology Journal 37: 446-454. *Meloidogyne spp complexes*

Okoro, U. K., Akalazu, J. N., Nwulu, N. C. 2021. Near-term impact of climate variability on yam rot incidence over a humid tropical region: projections in CORDEX-Africa scenarios. Renewable Agriculture and Food Systems 36: 477-490. *Meloidogyne spp complexes*

Özdemir, F. G. G., Yaşar, B., Eleclioğlu, I. H. 2021. Distribution and population density of plant parasitic nematodes on cereal production areas of Isparta and Burdur provinces of Turkey. Türk. Entomol. Derg. 45: 53-64. *Meloidogyne spp complexes*

Peng, D., Jiang, R., Peng, H., Liu, S. 2021. Soybean cyst nematodes: a destructive threat to soybean production in China. Phytopathology Research 3: 19. *Heterodera glycines*