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RESOURCE ANNOUNCEMENT

Bacterial and Fungal Next Generation Sequencing Datasets and Metadata from Citrus Infected with '*Candidatus Liberibacter asiaticus*'Nichole A. Ginnan,¹ Tyler Dang,¹ Sohrab Bodaghi,¹ Paul M. Ruegger,¹ Beth B. Peacock,¹ Greg McCollum,² Gary England,³ Georgios Vidalakis,^{1,†} Caroline Roper,^{1,†} Philippe Rolshausen,^{4,†} and James Borneman,^{1,†}¹ Department of Microbiology and Plant Pathology, University of California, Riverside 92521² U.S. Department of Agriculture, Agricultural Research Service, U.S. Horticultural Research Laboratory, Fort Pierce, FL 34945³ Hastings Agricultural Extension Center, University of Florida, Hastings 32145⁴ Department of Botany and Plant Sciences, University of California, Riverside, CA 92521

Abstract

Citrus production throughout the world is being severely threatened by Huanglongbing (HLB), which is a disease associated with the bacteria '*Candidatus Liberibacter asiaticus*' (CLAs), africanus, and americanus. This Resource Announcement provides amplicon-based next generation sequencing (NGS) datasets of the bacterial and fungal rRNA internal transcribed spacer (ITS) region from CLAs-infected citrus budwood, leaves, and roots from five orchards located in different geographical regions in Florida (USA). To our knowledge, this is the first amplicon-based NGS study (i) that describes the fungal taxa associated with citrus and (ii) that provides comparative analyses of the bacterial and fungal taxa associated with budwood, leaves, and roots from the same citrus trees. This report also provides the sample metadata linked to these sequence datasets including HLB severity rating, tissue type, citrus rootstock, citrus scion, geographical region, and year trees were planted. When analyzed with other similar datasets, we anticipate that researchers will be able to obtain a greater understanding of the factors that shape the citrus microbiome as well as identify individual microorganisms or consortia of microorganisms that play a role in HLB suppression or exacerbation.

Background and Context for the Resource

Citrus is one of the highest valued fruit crops internationally, and it plays a vital role in the human diet and medicine. Citrus by-products also have considerable value because they possess antimicrobial and insecticidal properties (Nannapaneni et al. 2008; Oikeh et al. 2016; Rafiq et al. 2016; Siskos et al. 2008; Talon and Gmitter 2008).

First and second authors contributed equally to the work.

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Author Contributions: Author contributions were as follows: (i) C.R., G.M., G.V., J.B., and P.R. conceived of the work; (ii) G.E., G.M., N.A.G., P.R., S.B., and T.D. identified citrus orchards, collected samples, and/or processed samples; (iii) J.B., N.A.G., S.B., and T.D. performed experiments; (iv) J.B. and P.M.R. performed data analysis; (v) B.B.P., C.R., J.B., P.R., N.A.G., and T.D. prepared the manuscript; and (vi) B.B.P., C.R., G.M., G.V., J.B., N.A.G., P.M.R., P.R., S.B., and T.D. edited the manuscript.

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Keywords

bacteriology, microbiome, plant pathology

