First Report of *Peanut mottle virus* in Forage Peanut (*Arachis pintoi*) in the United States

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Arachis pintoi is a perennial peanut species grown in many tropical and subtropical countries around the world such as Australia, Brazil, and Colombia (Palmieri et al. 2010). Because of its high nutritive value and excellent ability to bind eroded soils, *A. pintoi* is increasingly being used both as a forage crop and as a ground cover. It is also increasingly being used as a landscape plant in urban settings. In the United States, *A. pintoi* is mostly grown in the southern coastal plain regions. Currently, *Arachis glabrata* is more widely grown in the southern coastal plain, with area more than 10,500 ha (Nischwitz et al. 2007). Although *Peanut mottle virus* (PeMoV) was reported in *A. glabrata* from Georgia in 2007 (Nischwitz et al. 2007), there are no reports of PeMoV infecting *A. pintoi* in the United States. In June 2017, samples of symptomatic *A. pintoi* were taken from a retail garden center in Nassau County, FL, by a Florida Department of Agriculture and Consumer Services Division of Plant Industry (FDACS-DPI) inspector. The *A. pintoi* plants originated from Hardee County, FL. Samples of *A. pintoi* and *A. glabrata* were also collected by FDACS-DPI from the Hardee County propagator and submitted to the Division of Plant Industry in Gainesville, FL. The leaves of the plants showed a variety of symptoms ranging from yellowing to dark islands, green vein banding, and mild mottling (Fig. 1). Symptomatic leaves were tested for *Peanut stunt virus* (PSV) using double antibody sandwich ELISA (Agdia, Elkhart, IN) and for potyvirus using a broad-spectrum lateral flow antibody immunoassay (Agdia). PSV was not detected, but all samples tested positive for potyvirus. To identify the potyvirus, RNA was extracted from four positive samples using an RNeasy Plant Mini kit (Qiagen, Valencia, CA). One-step reverse-transcription (RT)-PCR (Qiagen) was performed using the degenerate potyvirus forward primer, Sprimer (5'-GGNAAAYAGYGGNCARCC-3') (Chen et al. 2001) or CpUP (5'-TGAGGATCCTGGTGYATHGARAAYGG-3') (van der Vlugt et al. 1999) and the reverse primer M4T (5'-GTTTT CCCAGTCACGAC(T)₁₅-3') (Chen et al. 2001), which target the 3'-terminal region of most potyviruses. The temperature cycling parameter of the RT-PCR consisted of a reverse-transcription reaction at 50°C for 30 min, enzyme inactivation at 95°C for 15 min followed by 35 cycles of 94°C for 30 s, 51°C for 60 s, and 72°C for 60 s, and a final extension of 72°C for 5 min. No amplification was observed for the CpUP and M4T primer combination, but Sprimer and M4T produced an amplicon of the expected size (~700 bp). This product was cloned using pGEM-T Easy

FIGURE 1

Symptoms of *Peanut mottle virus* infection of *Arachis pintoi* in Florida. Individual leaves with yellowing to dark islands, green vein banding, and mild mottling.

II (Promega, Madison, WI), and four clones were sequenced in both directions (GenBank accession no. MF990885). A BLASTN search against the GenBank database indicated the cloned sequences had 99% identity with PeMoV (GenBank accession no. AF023848.1). Additional confirmation was done for all the samples with primers specific for PeMoV (Nischwitz et al. 2007) (GCTGTGAATTGTTGTTGA GAA/ACAATGATGAAGTTCGTTAC, amplicon size = 327). Detection of PeMoV in *A. pintoi* is significant because it is transmitted by aphids in a nonpersistent manner and is seed-borne in *A. hypogaea* (Adams and Kuhn 1977). It is not known if PeMoV is seed-borne in *A. pintoi*. However, *A. pintoi* is commonly vegetatively propagated using stolon cuttings. It is possible that PeMoV can spread to *A. pintoi* in Florida by all these means, making maintenance of virus-free propagation stock plants important. To our knowledge, this is the first report of PeMoV in *A. pintoi* in Florida, United States.

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