14.3 RESULTS AND DISCUSSION

For many years, plants have been used as traditional indigenous remedies for a variety of ailments in many parts of the world, especially Asia (Pierson et al. 2012). It is thought that 75–90% of the rural population worldwide still relies on plant medicine (Aju and Ezeibekwe 2010). Among the various medicinal and culinary herbs, some endemic species are of particular interest because they may be used for the production of raw materials or preparations containing phytochemicals with significant antioxidant capacities and health benefits (Exarchou et al. 2002). Researchers have studied the polyphenolic constituents of various legumes and have reported that they contain potential medicinal or nutraceutical properties, including antioxidant activity (Siddhuraju 2006). Therefore, the study of the importance and role of non-nutrient compounds, particularly phenolic acids, flavonoids and high molecular tannins of legumes as natural antioxidants, have greatly increased (Siddhuraju and Becker 2007).

14.3.1 Pharmacognostic Studies of *P. hexapetalum*

14.3.1.1 Microscopic Observations of Leaves

The transverse section of the leaf showed the upper and lower epidermis, mesophyll tissue and prominent vascular bundle (Figure 14.1a and 14.1b). The upper epidermis is formed by the arrangement of rectangular cells and is covered by a

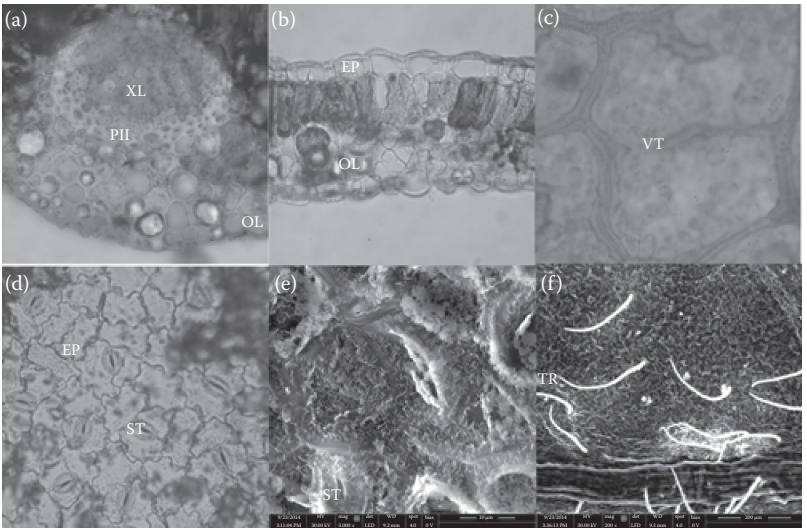

FIGURE 14.1 Microscopic observations of *P. hexapetalum* leaf: (a) T.S. of leaf mid rib (40X); (b) T.S. of leaf lamina region 40x; (c) leaf vein termination 100x; (d) leaf stomata 40x; (e) leaf stomata SEM image; (f) leaf trichome SEM image. PH = phloem, XL = xylem, OL = oil cell, EP = epidermal cell, PA = palisade cell, TR = trichome, ST = stomata, VT = vein termination.