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Antioxidants are substances that may protect cells from the damage caused by unstable molecules known as free radicals. Free radical damage may lead to cancer. Antioxidants interact with and stabilize free radicals. Antioxidants are compounds in fruits and vegetables, which help in avoiding chronic diseases. They act as a defense system against oxidative damage in our bodies and may help in avoiding chronic diseases. The present work has been undertaken to evaluate and hence compare the antioxidant potential of three parts of banana varieties, namely, *Rasthali* leaf, *Rasthali* stem, *Rasthali* flower, *Karpooravalli* leaf, *Karpooravalli* stem, *Karpooravalli* flower. The free radical scavenging ability of the parts of the *Musa spp* were tested against various free radicals generated *in vitro* and the results obtained. The parts extracts of *Musa spp* were assayed for different enzymatic, non- enzymatic and phytochemical compounds like SOD, GPx, GR, Vitamin C, Vitamin E, carotenoids, alkaloids, total phenols, flavonoids etc. The results obtained were subjected to two- way ANOVA and the parts of the varieties were ranked according to their antioxidant and phytochemical content. Even though all parts of the varieties showed significant antioxidant and phytochemical potential, *Rasthali* leaf, *Karpooravalli* leaf showed highest antioxidant and phytochemical potential. On the whole, all parts of banana varieties exhibited a good antioxidant activity with leaf part topping the list.

The main objective of this study was to evaluate and compare the antioxidants and phytochemical potentials in the parts extracts of *Musa spp*.

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