

**TABLE 13.4 (CONTINUED)**  
**Identified Compounds along with Molecular Mass**  
**and Biological Properties**

S. No	Compound	Molecular Mass	Biological Properties
29	Isobruceine	522.56	Antidiabetic, Antiseptic
30	Chrysophanol glucoside	416.39	Antidiabetic, Antifungal
31	Aristolochic acid	341.28	Antioxidant
32	Symphytine	381.48	Antioxidant, Antiviral
33	Khellin	260.25	Antioxidant, Antiviral
34	Chlorogenic acid	354.32	Antioxidant
35	Menthyl acetate	198.31	Antioxidant, Immunosupportive
36	Ginsenoside	947.18	Cardiovascular activity
37	Hydroxy methyl benzoic acid	152.15	Antioxidant
38	Cymarose	162.19	Antioxidant, Antibacterial
39	Ajmalicine	352.44	Antioxidant
40	Embelic acid	294.40	Antioxidant, Anticancer
41	Lobelanidine	334.44	Antioxidant, Immune enhancer
42	Rosmarinine	353.42	Antioxidant, Antidiabetic
43	Umbelliferose	504.45	Antioxidant, Antiseptic
44	Hypaconitine	615.73	Antioxidant
45	Delphinine	599.73	Antioxidant

### 13.7 CONCLUSION

The accumulated research experience, knowledge and practical applications in recent years concerning bioactive compounds, particularly phenolic compounds, have increased a lot. From the results, it seems that *M. calabura* fruit possesses potential antioxidant activity, with high phenolic and flavonoid contents. The recovery of phenols was dependent on the solvent system used; in this study, ethyl acetate and methanol were the best among all the solvents in extracting phenolics efficiently. Results on HPTLC indicated that the *M. calabura* fruit contains polyphenols. The HPLC and LC-MS analysis showed that the major phenolic compounds present in the fruit were cinnamic acid, ferulic acid, sinapic acid, shikimic, catechin and caffeic acid. This high content of cinnamic acid is not frequently encountered in fruits. One of the polyphenolic flavonols, quercetin was identified by analytical HPLC.

Thus, *Muntingia calabura* might be useful in the development of medicinal raw materials from plants. It may therefore be concluded that *M. calabura* fruit may play some contributory role in the prevention of diseases with oxidative stress as one of the etiological factors, in areas where it is widely consumed. Future work should be focused on treatments that have fruit-promoting bioavailability, and also on confirming of the effects of antioxidant compounds from cherries for consumer health.