



## PHYTONUTRITIONAL COMPOSITION AND ANTIOXIDANT PROPERTIES OF SOME FRUIT TREE LEAVES

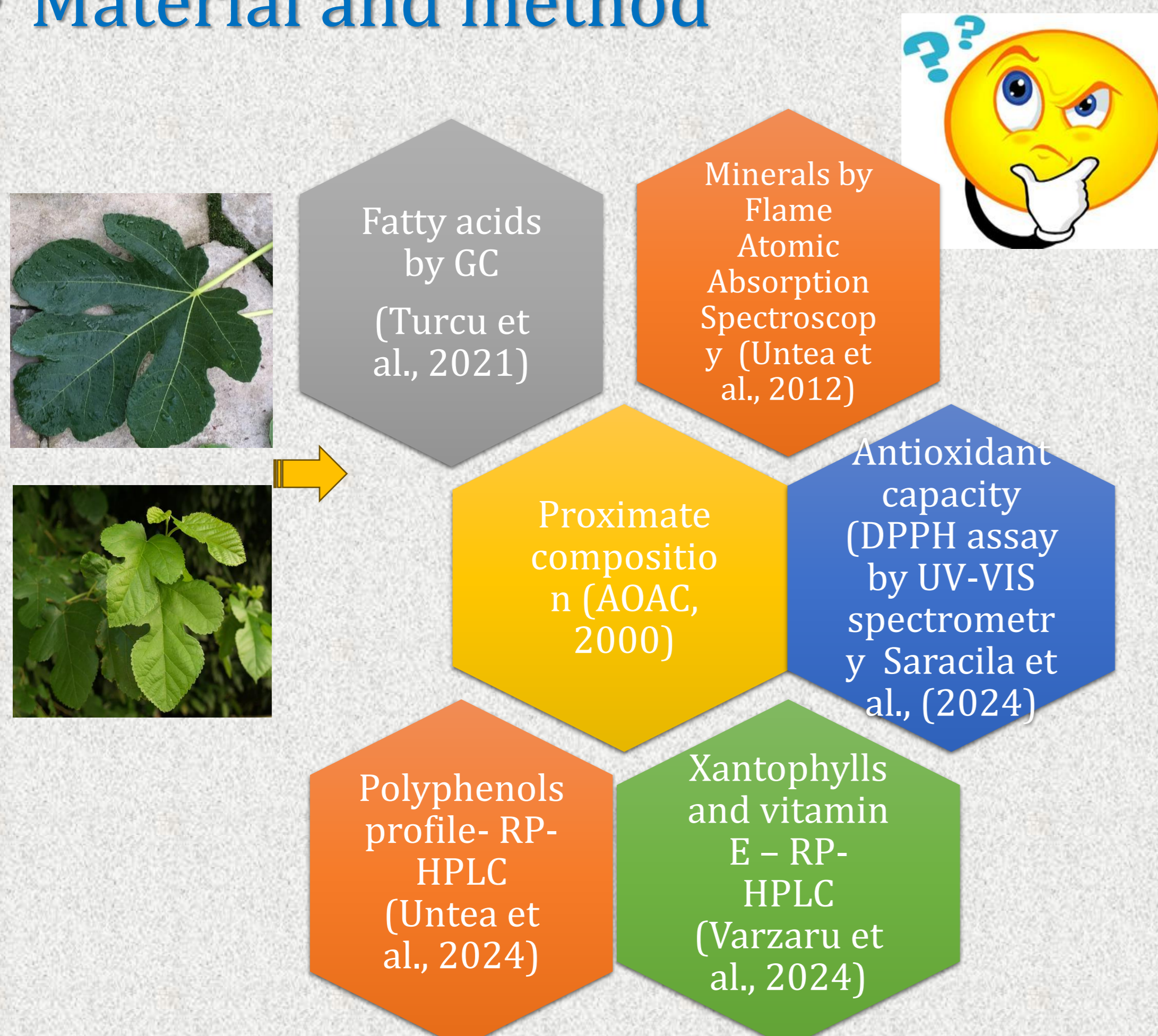
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### • Introduction

Utilizing by-products and co-products from the food industry in animal nutrition provides a sustainable solution for minimizing waste and lowering costs in animal husbandry. Figs (*Ficus carica L.*), part of the *Moraceae* family, have been cultivated for thousands of years and are among the earliest known cultivated plants. Fig leaves contain tannins, flavonoids, and hydrocarbons. Black mulberry (*Morus nigra L.*), a member of the *Moraceae* family, contain various phytochemical constituents and exhibit numerous biological activities. The leaves of the black mulberry are rich in flavonols and chlorogenic acid, which is the predominant phenolic acid. This study aimed to compare the chemical composition and antioxidant potential of these unconventional materials for potential applications in monogastric nutrition.

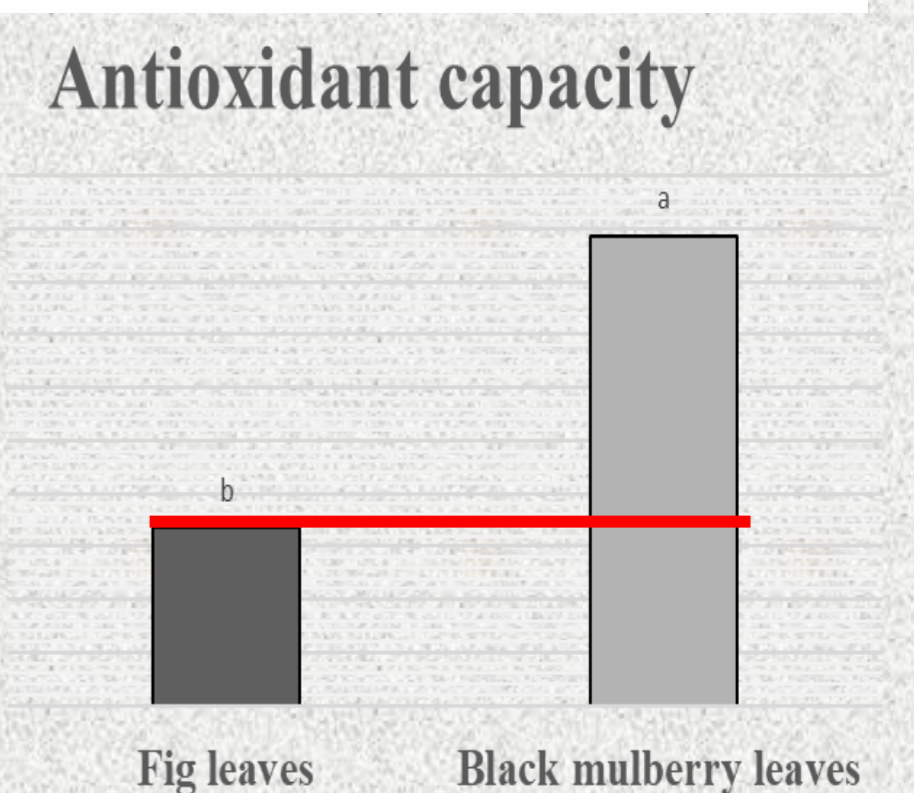
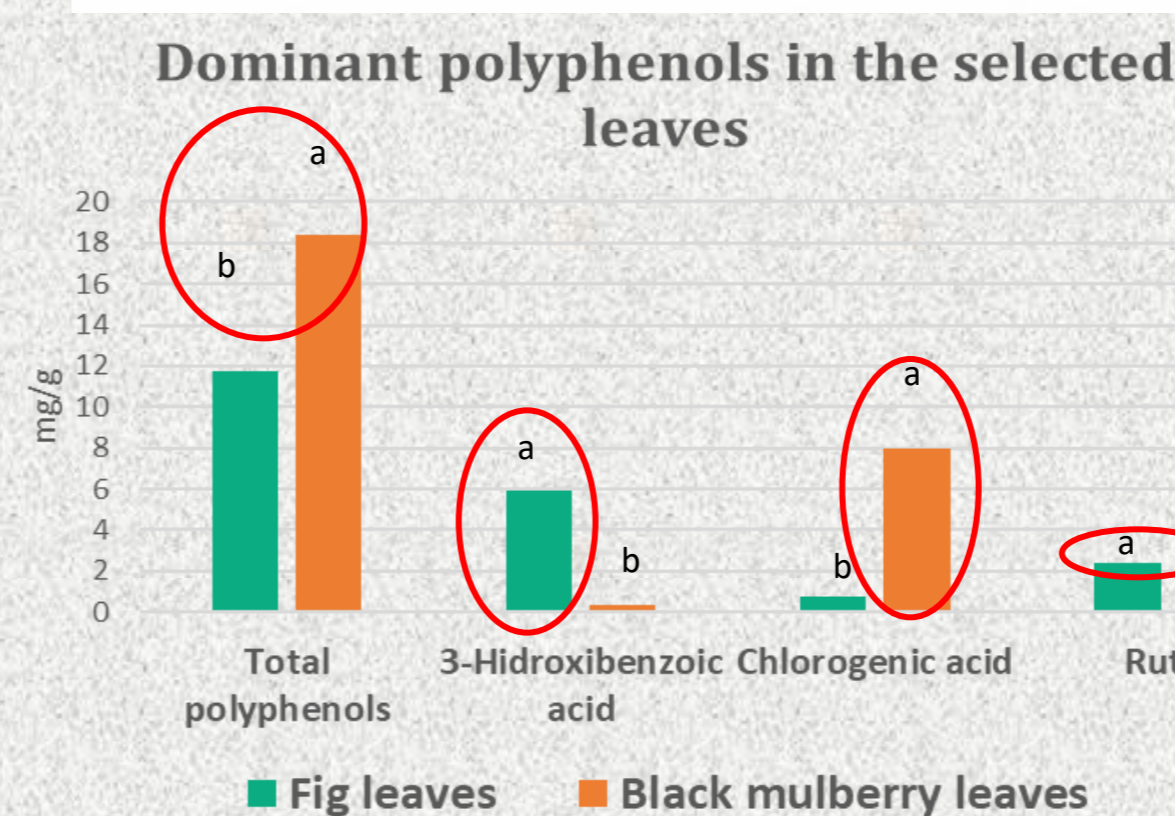
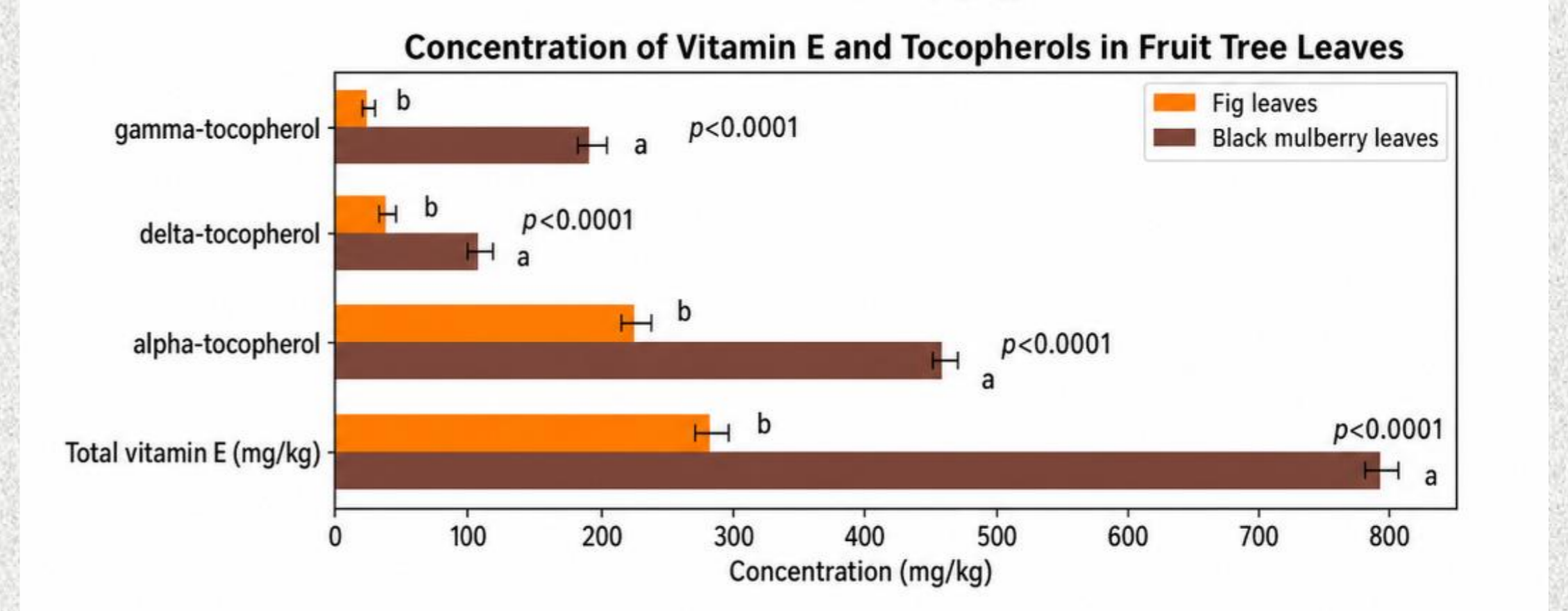
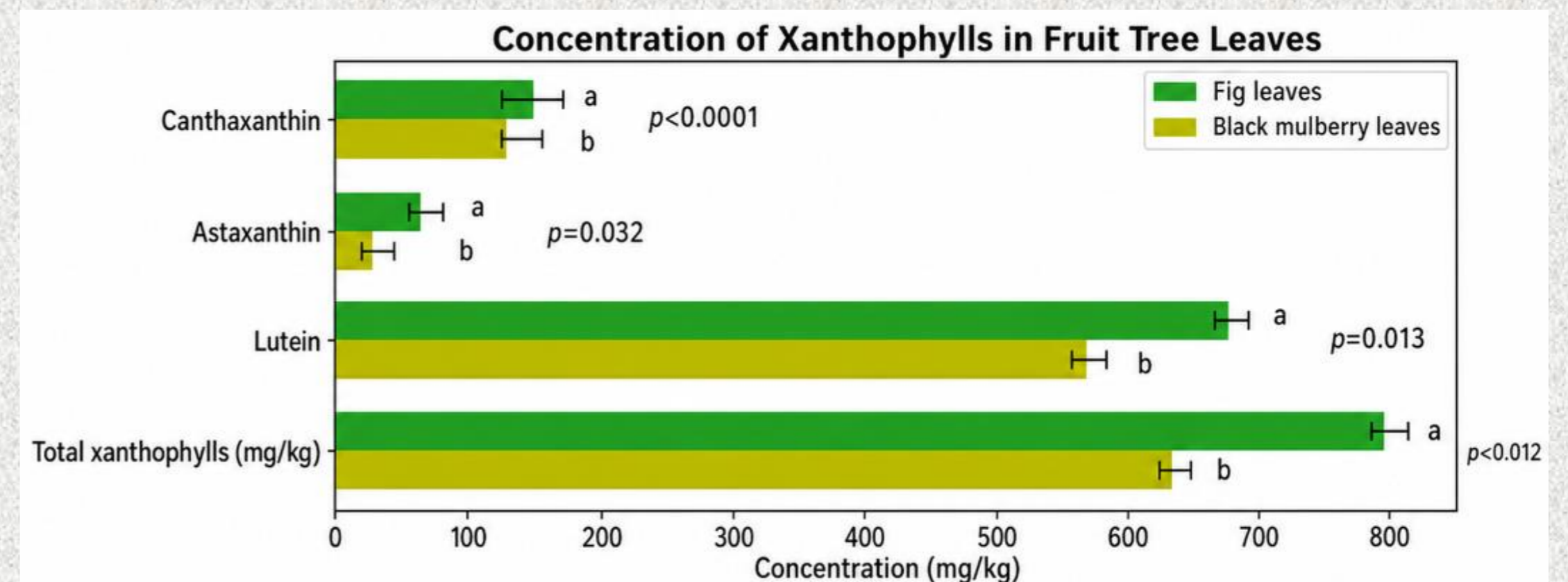
### • Material and method



### • Results and discussions

#### Proximate and mineral composition

Parameter	Fig leaves	Black mulberry leaves	SEM	P-value
<i>Proximate composition (%)</i>				
Dry matter	91.09	91.06	0.005	0.051
<b>Crude protein</b>	<b>20.08<sup>a</sup></b>	<b>19.79<sup>b</sup></b>	0.004	0.001
Crude fat	1.97 <sup>b</sup>	3.56 <sup>a</sup>	0.002	<0.0001
<b>Crude fiber</b>	<b>14.04<sup>b</sup></b>	<b>14.21<sup>a</sup></b>	0.029	0.002
Ash	12.82 <sup>a</sup>	10.77 <sup>b</sup>	0.003	<0.0001
<i>Mineral composition</i>				
Ca (%)	2.03 <sup>a</sup>	1.69 <sup>b</sup>	0.116	0.0001
P (%)	0.49 <sup>b</sup>	0.53 <sup>a</sup>	0.004	0.027
Cu, mg/kg	5.74 <sup>a</sup>	5.65 <sup>b</sup>	0.008	0.011
<b>Fe, mg/kg</b>	<b>157.96<sup>b</sup></b>	<b>310.99<sup>a</sup></b>	0.005	<0.0001
Mn, mg/kg	45.31 <sup>a</sup>	30.10 <sup>b</sup>	0.007	<0.0001
Zn, mg/kg	28.99 <sup>b</sup>	36.53 <sup>a</sup>	0.003	<0.0001



### Conclusions

The current study demonstrated that black mulberry leaves contain higher levels of bioactive compounds, including polyphenols, fatty acids, xanthophylls, and vitamin E, compared to fig leaves. These findings suggest that black mulberry leaves could be a valuable source of nutrients for monogastric animal nutrition.

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