TABLE 15.2
Reduction of Fungal Dry Weight by Plant Extracts

Sample	Concentration (mg/50 mL)	Dry Weight	% Inhibition
Ethyl acetate	10	11.4784	3.556634766
	25	11.3596	4.554811498
Acetone	10	12.6267	–6.091566751
	25	5.6246	52.74120504
Methanol	10	3.2796	72.44427267
	25	12.2717	–3.108799583
Quercetin	10	12.9467	–8.780258282
BHT	10	12.2617	–3.024777973
Rutin	10	11.8217	0.672172883

15.3.2 Anti-Mycotoxigenic Activity

The anti-mycotoxigenic effect of the *P. mollis* extracts on the *Fusarium graminearum* was analysed and the different parameters of the growth, like mycelium growth and toxin production, was verified. The difference in the mycelial dry weight was calculated and the inhibition percent of the mycelium formation was analysed (Table 15.2). Acetone extract at a lower concentration (10 mg) showed a stimulatory effect on the mycelia growth. But at 25 mg/mL, the growth was inhibited to about 52%. Ethyl acetate extract showed inhibition even at a lower concentration of extract. But the inhibition percentage of mycelia was not increased so much in the higher concentration. But this was not seen in the case of methanol extract.

Different crude extracts of various herbs, spices and aromatic plants rich in polyphenolics are becoming increasingly important in the food industry due to their antifungal, antimycotoxigenic and antioxidant activity. Thus, such plant chemicals can improve the shelf life, quality and nutritional value of various stored commodities (Kumar et al. 2007). The growth of the mycelia and its inhibition was analysed. There is some effect on the fungal growth rate, as seen by the change in the mycelia growth of the treated samples. The effects vary in different extracts, as some have an inhibitory while others a stimulating effect. Here, the toxin extracted from the fungal culture has been analysed. A significant reduction in the toxin level of the extract-treated samples was observed, which is discussed below in detail.

15.3.3 Identification and Quantification of Zearalenone by HPLC

Zearalenone is one of the most dangerous toxins produced by *Fusarium* spp. and causes so many health problems. Quantification of toxin can be regarded as a measure of the extent of fungal growth. Zearalenone was quantified in the samples using the standard graph plotted using the area obtained from the chromatogram of standard toxins in different concentrations. The toxin concentration from different samples calculated using these values showed that acetone extract had the most effect