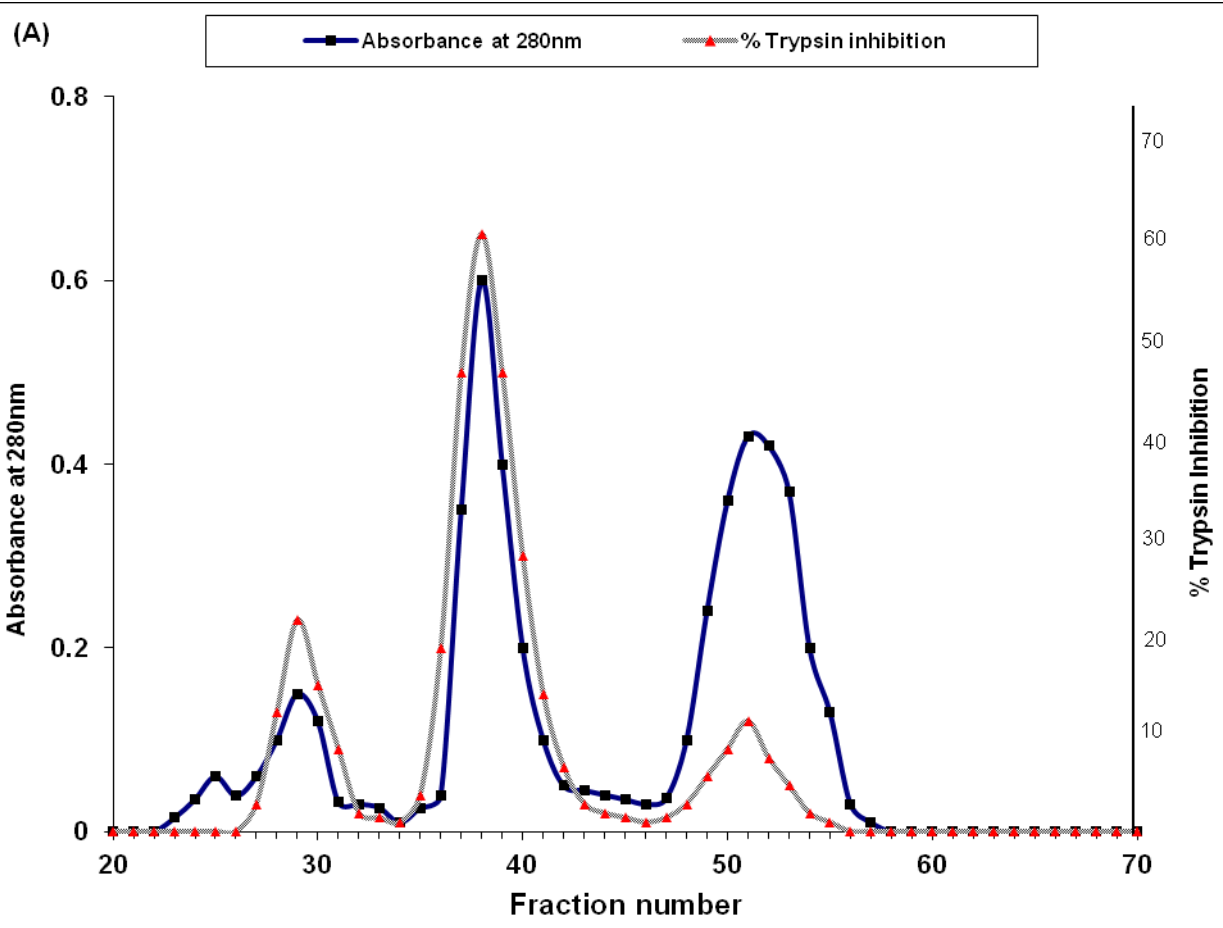


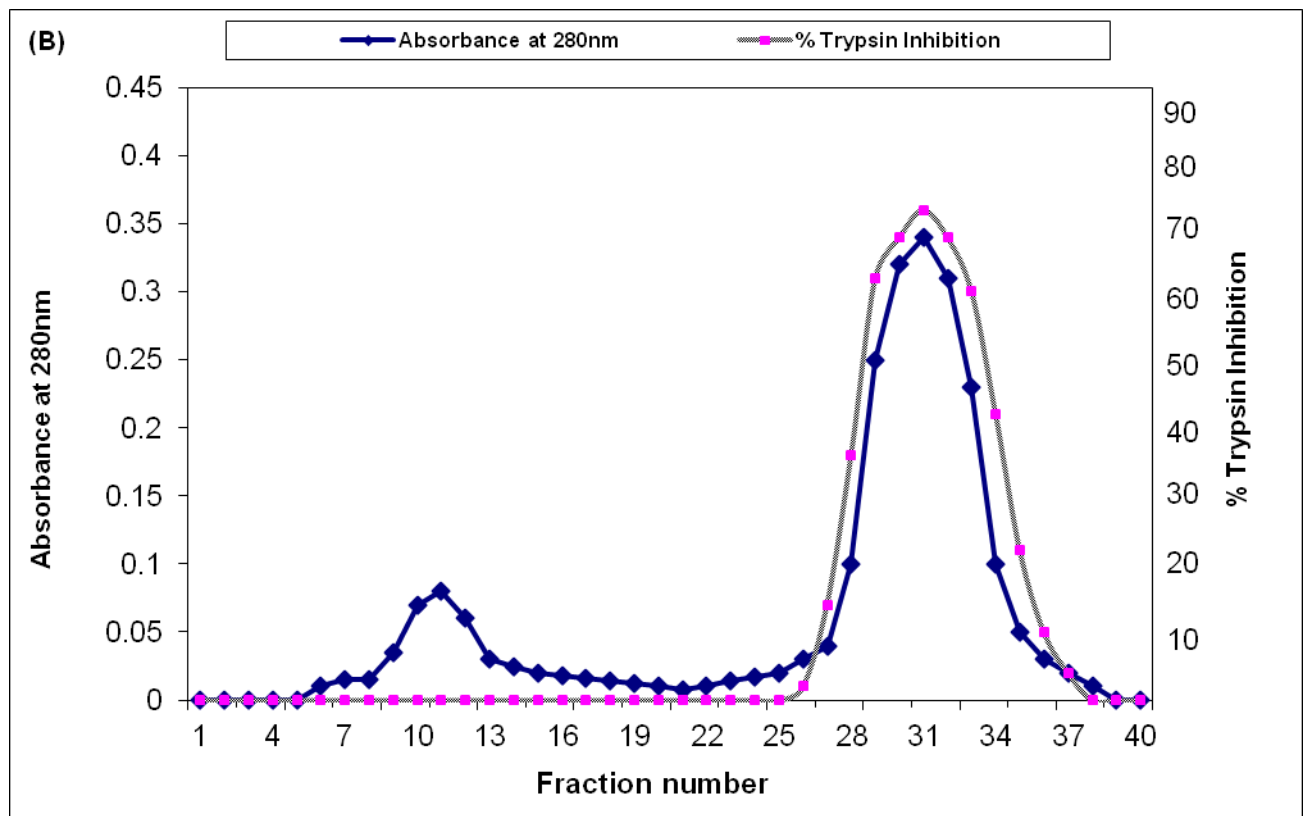
### **Supplementary Data:**

**Table 1** Summary of inhibitor purification from *Madhuca indica* (MiTI) based on trypsin-like activity of *H. armigera* midgut proteases

<b>Purification steps</b>	<b>Total protein (mg)</b>	<b>Total trypsin inhibitory unit (TIU)</b>	<b>Specific activity(TIU/mg protein)</b>	<b>Yield recovery (%)</b>	<b>Fold purification</b>	<b>Percent inhibition</b>
Crude extract	312.37	553	1.77	100	1.00	39.80
F <sub>30-65%</sub> (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> saturation fraction	91.52	264	2.88	47.73	1.62	48.40
Dialysis	42.70	162	3.79	29.29	2.14	56.70
Gel filtration (Sephadex G-75) chromatography	21.30	117	5.49	21.15	3.10	64.60
Trypsin affinity chromatography	13.41	87	6.48	15.73	3.66	76.10

TIU= One inhibition unit is defined as the amount of the inhibitor required to inhibit 50% of trypsin activity, under the trypsin inhibition assay.





**Figure 1 (A)** Sephadex G-75 gel filtration chromatography of ammonium sulfate precipitated fraction ( $F_2$ ) of trypsin inhibitor from the seeds of *Madhuca indica*. **(B)** Fractions with trypsin-inhibiting activity, purified from gel filtration column were subjected to trypsin-sepharose affinity column.

**Table 2:** Development of *H. armigera* at different concentration fed on diet incorporating MiTI (% w/w).

Dosage (% w/w)	Pupation %	% adult emergence	Mean Deformities (%)	Mean Fecundity (%) (n=10)
Without Inhibitor (Control)	95.4±0.13	93.5±0.16	05.3±0.14	98.3±0.25
0.5% MiTI	83.4±0.15	76.4±0.19	25.8±0.17	81.6±0.14
1.0% MiTI	78.3 ±0.14	69.8±0.13	37.1±0.13	62.5±0.13
1.5% MiTI	67.2±0.14	61.2±0.15	52.3±0.16	49.4±0.24

**Table 3** Nutritional indices of *Helicoverpa armigera* larvae reared on 1 %w/w MiTI supplemented diet.

Parameter (Mean ± SE)									
Instar stage	Dosage	I (mg)	F (mg)	ΔB (mg)	CI%	AD%	ECI%	ECD%	MC
Fourth instar	Control	94.43±5.19	41.66±4.13	21.56±1.89	47.69±1.17	55.88±1.25	22.83±0.78	40.86±1.34	59.14±1.85
	1 %w/w MiTI	83.69±6.07	32.42±3.34	8.04±1.18	67.87±1.54	61.26±1.97	9.60±0.84	15.68±0.97	84.32±1.26
Fifth instar	Control	106.60±8.38	64.62±7.01	14.66±1.07	32.59±0.93	39.38±0.84	13.75±0.29	34.92±0.98	65.08±1.27
	1 %w/w MiTI	91.62±7.57	53.00±4.17	7.14±0.14	58.36±1.04	42.52±0.57	7.79±0.14	18.49±0.48	81.51±1.91

I= weight of food consumed, F= weight of feces produced during the feeding period, ΔB= change in body weight, CI= consumption index, AD= approximate digestibility, ECI= efficiency of conversion of ingested food

ECD= efficiency of conversion of digested food, CM= Metabolic cost

$ECI = (\Delta B / I) \times 100$ ;  $ECD = [\Delta B / (I - F)] \times 100$ ;  $CI = (I / A) \times 100$  and  $AD = [(I - F) / I] \times 100$ . The metabolic cost (MC) was calculated as  $100 - ECD$ .