Indigenous medicinal plants containing active and medicinal principles like glycerides, alkaloids, steroids, tannins etc. grow abundantly in Bangladesh. These indigenous medicinal plants are extremely used in both raw and semi-processed forms in the preparation of pharmaceutical, Homeopathic, Unani, and Ayurvedic medicines. Although our country is rich with this vast natural resource but due to lack of knowledge none processes these indigenous medicinal plants or its extracts locally. As a result every year Bangladesh imports a huge quantity of processed indigenous medicinal plants or its extracts from abroad at the cost of our foreign exchange to meet the country’s demand. So, efforts have been made to systematic processing and screening of indigenous medicinal plants as pharmaceutical raw materials. The present paper deals with tested a large number of indigenous medicinal plants from Lawacherra Rain Forest of Bangladesh origin on healthy and streptozotocin induced Type 1 and Type 2 diabetes mellitus model rats at different prandial states; fasting, simultaneously with glucose load and thirty minutes before glucose load. A large number of indigenous medicinal plant extracts were found to possess significant hypoglycemic effects on different models and different prandial states. Hypoglycemic extracts of Abrus precatorius [Josti-modhu], Ocimum gratissimum [Raam-tulshe], Withania somnifera [Choto-chada], and Aloe vera [Gritho-kumari] were also found to have chronic effect in controlling serum glucose and dislipidemia on feeding for twenty eight days. Two sub-fractions of active extract of Abrus precatorius and Withania somnifera showed insulin releasing effect in pancreatic rat islets and perfused whole rat pancreas. Large-scale isolation of one sub-fraction is going on for chemical trial. Azadirachta indica [Neem], Abrus precatorius [Josti-modhu], Achyranthes aspera [Upoth-lenra], Coccinia cordifolia [Rakhal-shosha], Abroma augusta [Ulot-kombol], Alpinia galanga [Baow-ada], Wedelia chinensis [Vhingoraaz], Scoparia dulcis [Chinegura], Murraya koenigii [Norosing], Trigonella foenum-graceum [Methe], Ipomoea mauritiana [Vhui-kumura], and Withania somnifera [Choto-chada] several secondary metabolites including steroids, triterpenes, flavonoids, megastigmanes, benzhydrofurans and their glycosides and phenylethanoid glycosides were isolated. The hypoglycemic extracts/pure compounds of Azadirachta indica, Scoparia dulcis, Withania somnifera, and Achyranthes aspera also showed antioxidant, antifungal, and antibacterial activities. Processing and phyto-chemical screening of some of these indigenous medicinal plants are also carried out by our developed technologies. The work will increase the potentiality of indigenous medicinal plants for the production of various pharmaceutical raw materials and new drugs of our country to a large extent.

Keywords: Lawacherra Rain Forest, Unani, Ayurvedic, Homeopathic, indigenous medicinal plants, hypoglycemic effects.