

Tobacco Processing For Pharmaceutical Use

Tobacco production is currently topping the list of competitive products coming out of Zimbabwe. The crop is currently the biggest foreign currency earner in the economy, generating about US\$782m in the 2020, despite all of it being sold as raw leaf.

Such competitiveness is currently being achieved from sale of largely unprocessed tobacco. The economy could earn more value through further processing this tobacco into other value-added products for export and earn much more foreign currency and create jobs among other downstream benefits. The only local processing currently being done is through the manufacture of cigarettes. This is taking up only 14.5% of total output, leaving 85.5% going out unprocessed. This creates opportunity for possible processing of tobacco into solanesol and other high value products for pharmaceutical use.

Tobacco is an excellent source of photochemicals having pharmaceutical, agricultural and industrial importance. Thus, alternatively, tobacco can be the source for extraction of nicotine, an alkaloid, solanesol, a trisesquiterpene alcohol and organic acids (malic and citric). Apart from these chemicals, there are other possibilities such as protein recovery from green leaf, oil from seed, rutin (Vitamin P) from cured leaf and furfural (industrial solvent) from stalk.

Solanesol is a naturally occurring in tobacco (*Nicotiana tabacum* L) and tobacco is the richest source of this chemical. Solanesol is a base material for many high value bio-chemicals such as vitamin K, vitamin E and coenzyme Q10. Co-enzyme Q10, whose base material is solanesol, is useful in the treatment of heart diseases, cancers and ulcers among other ailments. It's also an important intermediate of anti-cancer drug preparations. Coenzyme Q10 is well known not only to reduce the number and size of tumors but also improve cardiovascular health. Solanesol could be used as an antibiotic, cardiac stimulant and lipid antioxidant. Solanesol also possesses antibacterial, antiinflammation and antiulcer properties. There is a great demand for solanesol for production of Q10 and other uses. This is still at pre-feasibility stage and IDCZ is looking for suitable technical and financing partners to develop this project together.

