Mod Chem Appl 2018, Volume: 06
DOI: 10.4172/2329-6798-C1-009

Lycopene a panacea for sustainable man power for agricultural production in Nigeria: Determination of lycopene from water melon (Citrullus lanatus)

S I Okonkwo
Anambra State University, Nigeria

Man power is one of the most important factors that can enhance and sustain agricultural production in Nigeria. The age bracket of 40 years and above is the group that is engaged in farming in Nigeria. These age groups are prone to diseases such as high blood pressure, cancer, cardiovascular diseases and this is why they die prematurely since their life expectancy has declined. Lycopene found in water melon which can be used for its medicinal value was extracted, analysed and quantified. Water melon was peeled and the reddish flesh was ground and oven-dried to make a paste. Lycopene was extracted using ethyl acetate. The crude product was obtained by simple distillation. The lycopene crystals were obtain through crystallization of crude product by adding a mixture of benzene and boiling methanol. Further purification was done using thin-layer chromatography using silica gel as adsorbent, followed by recrystallization using a mixture of benzene and boiling methanol. Identification was done using UV spectroscopy and the primary chemical test for lycopene using sulphuric acid which changes the colour to indigo blue. Also, few crystals were dissolved in acetone, after successive addition of 5% solution of sodium nitrate and 1M sulphuric acid, the colour disappears. The quantity of extracted lycopene was weighed and found to be 1.62 mg per 50 g water melon paste. Lycopene can be produced in commercial quantity which can be consumed by this age group as supplement. This will aid to reduce high death rate and enhance their life span which is one of the factors that can increase agricultural productivity.

sylocs70@yahoo.com

Unitary symmetry of atoms, molecules, codons, mixtures and its applications in chemistry, genetics, pharmacology and early diagnosis of diseases

Vladimir Komarov
St Petersburg State University, Russia

I created the new paradigm in chemistry, which is based on my discovery of "Unitary symmetry of atoms, molecules, codons, mixtures". The essence of this paradigm consists in considering nuclei, atoms, molecules, codons, genotypes and mixtures as discrete objects. The subsequent analysis of discrete objects from the point of view of combinatorics makes it possible to generate an ordered homology system. The main feature of combinatorial homology system is the fact that certain portions of the two-link homology in the space of their physical and chemical parameters are arranged regularly, i.e. parallel to each other (symmetrically within the framework of certain transformations in the space under consideration). These regularities are represented as a system of simple linear equations. The main feature of this system of equations is the fact that by measuring only a small number of parameters of combinatorial objects of the class in question, the remaining parameters are easily computed, i.e. are predicted. The physical meaning of unitary symmetry consists in considering combinatorial objects from the point of view of the hierarchy of interactions of elements forming a combinatorial object and compensating for weak interactions in two-link homology of substitutions. Within the framework of the Paradigm under consideration, a combinatorial system of chemical elements (as a replacement for Dmitry Mendeleyev's table) was created, which allowed discovering a lot of erroneous data in NIST. The applicability of the analysis of experimental data to their reliability for an overwhelming class of molecules is shown. New reliable values of experimental data for ionization energies and thermochemical parameters are predicted. A combinatorial system of the genetic code has been created, which allows us to consider mutagenesis and evolution at a simple mathematical level. The combinatorial system of genotypes and phenotypes has been created, which allows transferring Mendel's Laws from modern textbooks to textbooks on the history of genetics. Consideration of hormone mixtures in four media (arterial blood, venous blood, lymph and urine) within the framework of the paradigm under consideration made it possible to offer a model of digitizing each individual and predicting Pathology (Diseases) at the earliest stages of their development. At the same time, as a particularly important application, the solution of the problem of the relationship between the composition of hormones and the aggressive mood and behavior of the individual is considered.

kvsergeich@gmail.com