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Shrimp – a nutritional perspective

Shrimp is one of the most delicious seafood and is part of almost every nation's traditional meal. Shrimps are high in protein, low in fat and calories. Syama Dayal *et al.* (**page 1487**) explain the nutritional value of shrimps in man's diet on the strength of its nutrient composition and daily value. The daily values (DV%) of shrimp were calculated based on recommended dietary allowances for a 70 kg adult man. The DV (%) of 100 g shrimp is 75%, 70% and 35% for eicosapentanoic acid + docosahexanoic acid, essential amino acids (methionine, tryptophan and lysine) and protein respectively. The lower atherogenic (0.36) and thrombogenic (0.29) indices of shrimp show its cardio-protective nature. In spite of such merits with shrimp to be encouraged for its consumption, there is always reluctance among the dieticians and health professionals for the reason that it has relatively higher cholesterol. A clinical trial comparing the serum lipid profile of volunteers who ate shrimp and eggs, concluded that shrimp consumption in normolipidemic people would not adversely affect the over-all lipoprotein profile and shrimp can be included in 'heart healthy' nutritional guidelines. Review of the current understanding on dietary cholesterol linked with egg consumption and shrimp indicate that, to benefit from several vital nutrients shrimp should be a regular item in the diet of normolipidemic peoples. Only those who are at clear risk of cardiovascular disease and diabetic may avoid, until a strong resolution in dietary cholesterol controversy is attained.

Wireless sensors for structural health monitoring and damage detection

Our daily lives are becoming more and more dependent on civil infrastructure, including bridges, buildings, pipelines, offshore structures, etc. Much of the existing infrastructure in India has been in service for many years. Hence, monitoring the condition of these structures to provide the necessary maintenance has become critically important to our society. These emergency facilities have to be evaluated and repaired immediately to minimize the impact of the disaster and to facilitate the recovery of our society. Tragic disasters on the civil structures, like collapse of bridges or buildings, often result in a large number of casualties as well as social and economic prolems. Structural health monitoring (SHM) is an emerging field in civil engineering, offering the potential for continuous and periodic assessment of the safety and integrity of the civil infrastructures. Based on the knowledge of the condition of the structure, certain preventive measures can be carried out to prolong the service life of the structure and prevent catastrophic failure. Damage detection strategies can ultimately reduce life-cycle cost. Using traditionally wired sensors to implement such a SHM system with a dense array of sensors is quite challenging because of the difficulties in deploying and maintaining associated wiring. Recent development of smart sensors has created the possibility of dense array of sensors in SHM. Damage detection algorithms which can take advantage of the distributed computing environment offered by smart sensor technology are highly desired but currently limited. Dense arrays of low-cost smart wireless sensor networks (WSNs) have the potential to improve the quality of SHM dramatically using their onboard computational and wireless communication capabilities. These WSNs provide rich information which SHM algorithms can utilize to detect, locate and assess structural damage caused by severe loading events and by progressive environmental deterioration as well as economical realization of SHM system. Recent research and development activities on the field of smart wireless sensors and application of smart sensing, monitoring and damage detection techniques for civil infrastructures are briefly presented by Arun Sundaram *et al*. (**page 1496**).

Early warning system for elephant intrusion

S. J. Sugumar and R. Jayaparvathy (**page 1515**) have proposed method for detecting elephant intrusion into the human habitat and to provide an early warning to the forest officials

about the presence of elephant in the forest border areas without any physical disturbance to the pachyderms. Human–elephant conflict is a big problem in the forest border areas. The surveillance and tracking of the elephant herds are difficult due to their size and nature of movement. The elephants are also subject to attack by humans resulting in danger to the life of elephants. Minimizing human–elephant conflict to reduce the risk of life of both human beings and elephants is of utmost importance. The authors present an analytical procedure to study the behaviour of elephants along forest border areas by taking migration data into consideration using a three-state Markov chain. The migration data over the whole year is divided into four different periods for the study. They also develop an intrusion detection system using ground seismic sensors to detect the intrusion of herds of wild elephants from the forests into the human living area and to send an early warning through SMS to the forest officials to take necessary action.