

Abstract

Urea is the most dominant form of nitrogen fertilizer used in Sri Lanka, it accounts for approximately 50% of the total fertilizer used. Annually around 300 000 tonnes of urea are imported. Next to urea, muriate of potash (MOP) is the major fertilizer used in the country in terms of quantity of 100 000 tonnes. In Sri Lanka, triple super phosphate (TSP) is used as the traditional high analysis phosphate fertilizer for short duration crops. Annually, from 40 000 to 50 000 tonnes of TSP are imported into the country.

With the current economic difficulties, people tend to gain advantage of the subsidiaries and try to earn the profits by adulterating the consumer products. There are incidences of selling inferior quality and/or outdated products deceiving the consumers. Re-packing the products in smaller proportions also often associated with malpractices. The primary objective of this project is to study the nutrition value of the fertilizer at the farmers end to assess the quality of the fertilizers.

The specifications for any type of fertilizers are the nutrient content(s) and concentration(s), nutrient chemical composition, moisture content, particle size, physical condition, solubility and availability and packaging details. The specifications serve to ensure agreement on product characteristics and define the product in sufficient detail to effect satisfaction of farmers. The specifications for urea, murate of potash, and triple super phosphate as per Sri Lanka Standards are SLS 618: 1983, SLS 644: 1984, and SLS 812: 1988.

The moisture content of all three types of fertilizers, the total nitrogen and biuret content in urea, potassium content of potassium chloride (murate of potash – MOP fertilizer grade), phosphorous content and water soluble total phosphorous content (As P_2O_5) in TSP were tested using standard test methods specified by SLS 645: Part 2 :1984 - determination of moisture content, SLS 645: Part 1:1984 - determination of nitrogen content, SLS 645: Part 3:1986 - determination of biurate content, SLS 645: Part 4:1989 - determination of potassium content, SLS 645: Part 5 :1985 - determination of phosphorus content.

The results obtained at the research for average moisture percentage for all three fertilizers urea, triple super phosphate, and murate of potash are more than the required quality specifications given in the standards which is a non conformity. The total nitrogen and biuret content in urea, potassium content of potassium chloride (murate of potash – MOP fertilizer grade), phosphorous content in TSP are conforming to the standard requirements. The water soluble total phosphorous content (As P_2O_5) in TSP is nonconformity of the standard requirement