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**AWARENESS OF SOCIO SCIENTIFIC ISSUES AMONG SECONDARY SCHOOL STUDENTS**

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Lekshmi Sekher . G

Research scholar, N.S.S training college, Pandalam.

*Corresponding Author- Lekshmi Sekher . G*

*Email- [lsgbmm@gmail.com](mailto:lsgbmm@gmail.com)*

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**Abstract**

Science education focusing on socio-scientific issues has been proposed as a strong technique for enhancing science learning and scientific literacy development among students. Students may negotiate the social elements of scientific topics via socio scientific issue based education, which is centered on giving real-world situations. Socio scientific issues are socially significant real-world concerns that are informed by science. Use of chemical fertilizers, controlled farming, cultivated fisheries, genotyping, climate change, and captive breeding in zoos are just a few examples. Here in this study the investigator investigates how far the secondary school students are aware of socio scientific issues. In this survey investigator adopted 34 items from standardized criterion referenced multiple choice questionnaire “test of awareness of socio scientific issues” based on two socio scientific issues and collected data from 120 secondary school students in kollam district. The overall purpose of this research is to determine the degree of secondary school students' awareness on the two socio scientific issues identified from kerala state science curriculum. The statistical measurements used in this investigation were mean, standard deviation, and t-test. According to the findings, secondary school students have a modest degree of awareness of socio scientific issues. In terms of gender, there was not a considerable disparity in secondary school students' awareness of socio scientific issues.

**Key words:** socio scientific issues, awareness on agricultural issues, science education, secondary school students.

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**Introduction**

Man's thirst for knowledge led to inventions and discoveries that improved his life. Many scientific discoveries have changed the course of human history. From reducing infant mortality to enabling space travel, science has improved human existence. Machinists helped humans create new forms of entertainment, agriculture production and transportation. Science has improved living standards and convenience of everyday existence. Science improved living standards and comfort of everyday existence. Science improved living standards and comfort of everyday existence. Science has greatly aided agriculture in planting, fertilization, irrigation, and even harvesting. Science and technology have improved our material comforts. From insects to rockets, science is taught to young minds via the senses. As science advances, so do the ethical issues it brings. The future of the planet is unknown. So we coined the phrase sustainable development. Growth cannot be suppressed. Without losing astonishment and wonder to keep life on earth afloat, science-based progress requires ethical decision-making. Scientific reasoning skills are connected to all

social concerns resulting from scientific growth. Previously, school curriculum instruction, activities, and assessment were separated from society and real-world challenges. Every topic in the kerala scert state curriculum has real-life examples. So applying scientific knowledge to social challenges is crucial. Socio-scientific concerns are motivated by science. Learners must be aware of socio-scientific problems. Learners must use evidence-based reasoning and speech to remark on socio-scientific issues. Using socio-scientific themes to teach science has been shown to increase student motivation, higher-order thinking skills, and understanding of science. It may also help students grasp their subjects better. Incorporating sentiments and ethics into scientific data assessments might help students get a more realistic grasp of science. Socio-scientific issues paired with informal academic experience may develop intellectually interested people. The quality of our academic programs affects the general functioning of our society. Understanding science strives to help students grasp complex scientific concepts and make informed decisions.

**Need and significance of the study**

Why ssi is important?

Eggert et al. (2013) in his study found that co-operative learning improves decision making skills and metacognitive skills. Lee et al. (2013) proves that socio scientific issue based instruction increases ethical sensitivity in science learning. Sadler et al. (2016) finds out that socio scientific issue based curriculum improves performance in high stake tests.

It is necessary to develop citizens of country who are competent in solving realistic world problems on the basis of strong scientific knowledge and also on the basis of ethical reasoning skills. Socio scientific problem based learning is required for a responsible citizenship which may lead us to a brighter future without sacrificing natural resources available.

**Objectives of the study**

The present study focussed on the awareness of socio scientific issues among secondary school students in kerala. It has the following specific objectives;

To find out the level of awareness of socio scientific issues among secondary school students with regard to;

1. Awareness of issues crisis in agricultural sector
2. Awareness of issues related to unscientific agricultural practices and unfriendly chemical changes.

To find out whether there is a significant difference in the level of awareness of socio scientific issues among secondary school students based on gender

**Hypotheses of the study** the awareness level of socio scientific issues among secondary school students is moderate.

1. The awareness level of socio scientific issues among secondary school students is moderate with regard to issues related to crisis in agricultural sector.
2. The awareness level of socio scientific issues among secondary school students is moderate with regard to issues related to unscientific agricultural practices and unfriendly chemical changes

3. There is significant difference in the level awareness of socio scientific issues among secondary school students based on gender.

**Methodology**

**Method:** the investigator adopted a normative survey method for the study.

**Population:** the current study population comprises all secondary school pupils in kerala.

**Sample selected for the study:** the sample for the present study consists of 120 secondary school students in kollam district.

**Tool used for the study:** the investigator used items from the 'test of awareness of socio scientific issues' for the present study. The tool was adopted which is prepared and standardized by dr. Tara s nair and athira j nair (n.s.s training college, pandalam, kerala, university of kerala). The tool is based on two dimensions of socio scientific issues; awareness of issues crisis in agricultural sector, related to unscientific agricultural practices and unfriendly chemical changes. —the test of 34 items in total.

1. Awareness of issues crisis in agricultural sector
2. Awareness of issues related to unscientific agricultural practices and unfriendly chemical changes.

**Statistical techniques adopted for the study**

To analyse collected data, different statistical techniques like descriptive statistics, standard deviation and t-test were used.

**Analysis and interpretation of data**

The data collected through normative survey method are analyzed and are under the following subheadings.

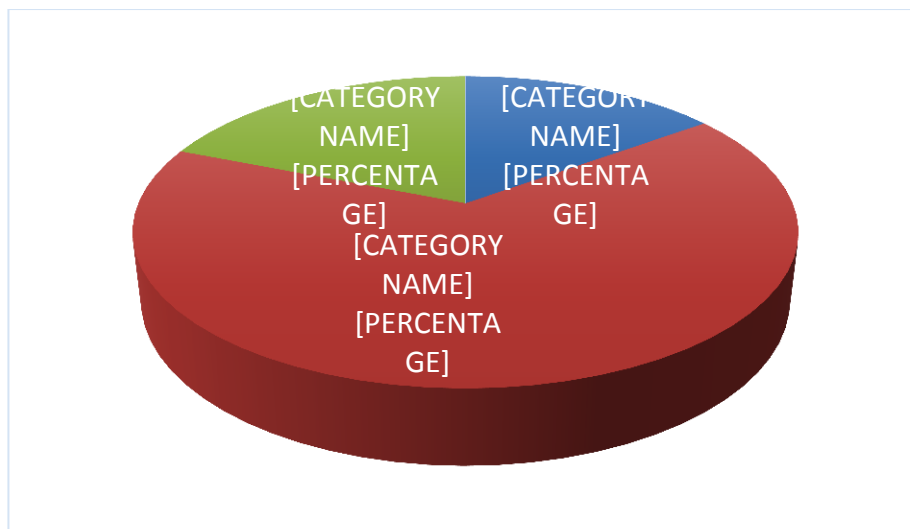
1. Analysis of the level of awareness of socio scientific issues among secondary school students
2. Analysis of the level of awareness of crisis in agricultural sector among secondary school students
3. Analysis of the level of awareness of unscientific agricultural practices and unfriendly chemical changes among secondary school students.
4. Analysis of the level of awareness of socio scientific issues among secondary school students with regard to gender.

**Analysis of the level of awareness of socio scientific issues among secondary school students****Table 1: the level of awareness of socio scientific issues among secondary school students**

Level of awareness of socio scientific issues	Number of students	Percentage
High	18	15
Moderate	79	66
Low	23	19

Table 1 shows that 66% of secondary school students have a moderate level of awareness of socio scientific issues, 15% have a high level of

awareness and the remaining 19% have a low level of awareness of socio scientific issues



**Figure 1**

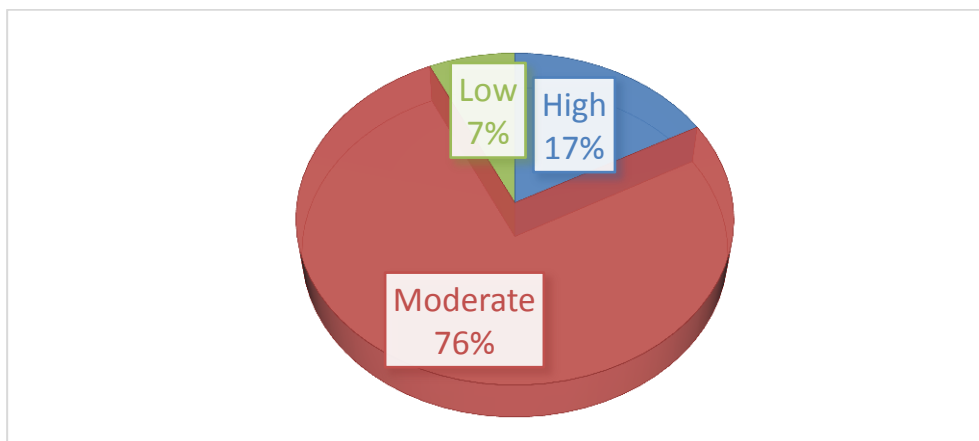
The level of awareness of socio scientific issues among secondary school students

Analysis of the level of awareness of crisis in agricultural sector among secondary school students

**Table 2: the level of awareness of crisis in agricultural sector among secondary school students**

Level of awareness crisis in agricultural sector	Number of students	Percentage
High	8	7
Moderate	91	76
Low	20	17

Table 2 shows that 76% of secondary school students have a moderate level of awareness of crisis in agricultural sector, 7% have a high and the remaining 17% have a low level of awareness of crisis in agricultural sector.



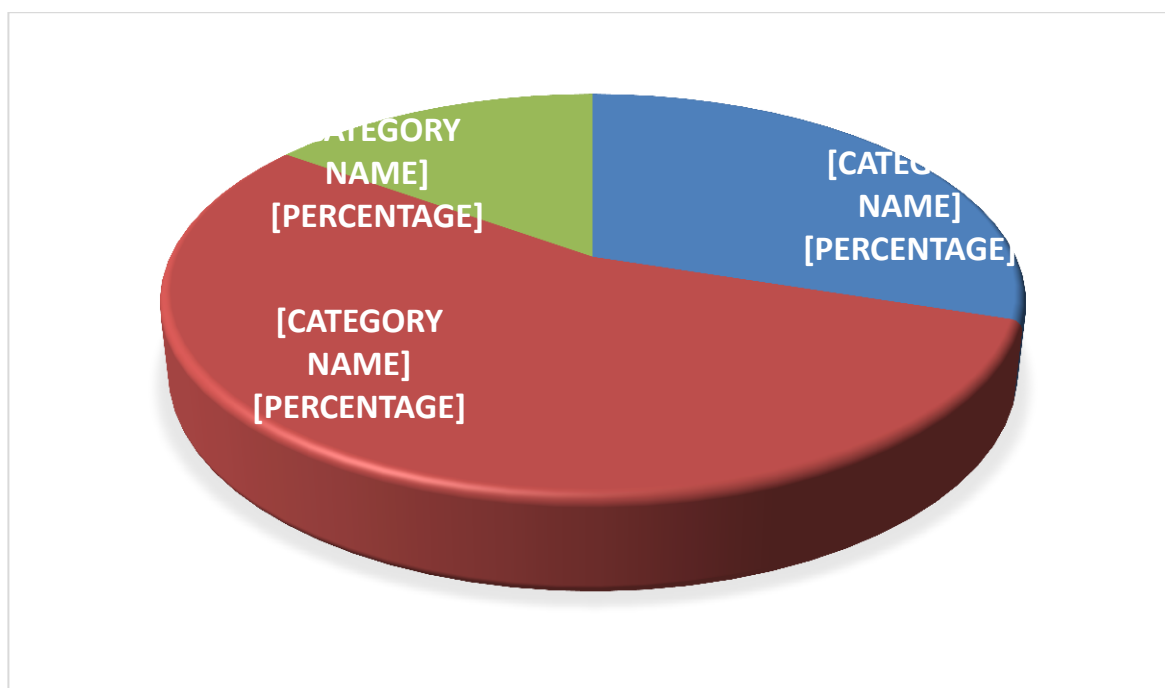
**Figure 2: the level of awareness of crisis in agricultural sector among secondary school students**

Analysis of the level of awareness of unscientific agricultural practices and unfriendly chemical changes among secondary school students

**Table 3: level of awareness of unscientific agricultural practices and unfriendly chemical changes among secondary school students**

Level of awareness of issues related to unscientific agricultural practices and unfriendly chemical changes	Number of students	Percentage
High	36	30
Moderate	66	55
Low	18	15

Table 3 shows that 55% of secondary school students have a moderate level of awareness of socio scientific issues, 30% have a high level of awareness and the remaining 15% have a low level of awareness of socio scientific issues.



**Figure 3: the level of awareness of issues related to unscientific agricultural practices and unfriendly chemical changes among secondary school students**

**Analysis of the level of awareness of socio scientific issues among secondary school students with regard to gender**

**Table 4: the level of awareness of socio scientific issues among secondary school students with regard to gender**

Gender	Number of students	Mean	Standard deviation	Critical ratio
Girls	61	21.60	5.36	0.323
Boys	59	21.27	5.95	

The critical ratio obtained is 0.323 which is not significant even at 0.05 level. This showed that there is no significant difference in the level of awareness of socio scientific issues among secondary school students with regards to gender.

#### **Conclusions**

The level of awareness of socio scientific issues, awareness of crisis in agricultural sector, and

awareness of unscientific agricultural practices and unfriendly chemical changes among secondary school students was moderate. The level of awareness of issues related to unscientific agricultural practices and unfriendly chemical changes among secondary school students are high in 30% of students which indicates students are aware of chemical related issues. Based on gender, there is no substantial

disparity in the amount of awareness of sociological issues among secondary school students.

### **Suggestions**

Socio scientific issues are identified in kerala state science curriculum. But the moderate level of awareness indicates the curriculum should make more stress on socio scientific based instructional approach so as to develop future citizens of responsible global citizenship for the harmony of their life with both nature and society.

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