

**Teknik not**  
**Technical note**

## **Increasing the Farmers' Educational Level in Plant Protection**

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### **ABSTRACT**

Plant protection has been recognized to be a sustainable method for pest and disease prevention, monitoring and control. Farmers' knowledge and participation are key elements of achieving this approach. The purpose of this study was to assess farmers' knowledge and skills of plant protection. The study was conducted in the Khelvachauri region of Georgia using a case study through qualitative and quantitative data collection techniques such as participatory observations, structured and semi-structured interviews, focus groups, and transect walks with the farmers. The general objectives of the study were also to help farmers to increase their knowledge in plant protection. The result showed, that after training farmers knowledge in plant protection was increase and it was basis on income of agriculture.

**Key Words:** Farmers' education, plant protection

### **Bitki Koruma Hakkında Çiftçilerin Eğitim Seviyelerinin Artırılması**

#### **ÖZET**

Bitki koruma, hastalık ve zararlılardan koruma, gözleme ve kontrol için sürdürülebilir yöntem olarak tanımlanmıştır. Çiftçilerin bilgisi ve katılımı bu yaklaşımın başarıya ulaşmasında anahtar parçalardır. Bu çalışmanın amacı çiftçilerin bitki koruma alanındaki bilgi ve becerilerini ortaya koymaktır. Çalışma Gürcistan'ın Khelvachauri bölgesinde çiftçilerle katılımcı gözlemler, yapılandırılmış ve yarı-yapılandırılmış görüşmeler, odak grupları, ve transekt yürüyüşler gibi nitel ve nicel veri toplama yöntemleri kullanılarak gerçekleştirilmiştir. Çalışmanın genel amacı aynı zamanda çiftçilerin bitki koruma bilgilerini artırmaktır. Sonuçlar, eğitimin çiftçilerin bitki koruma bilgilerini artırdığını göstermiştir ve bu da tarımsal gelirin temelidir.

**Anahtar kelimeler:** Çiftçi eğitimi, bitki koruma

### **INTRODUCTION**

Uncertainty is the companion of Agriculture. A successful harvest depends on a number of factors like good agricultural practices right from the selection of seeds to harvest and the right combination of climatic and soil conditions. But the most important among this list is the plant protection operations. No crop can be harvested successfully without tackling the problems caused by pest and diseases. Their damage continues beyond the main field to the storehouse and even to the kitchen shelves.

Ever since man has started agriculture, pest and disease have been attacking crops. To feed the increasing population, man started intensive farming, which lead to an increase in pest and disease incidences. Approximately the loss due to pest is 30- 50% of the total production. To stabilize production and to avoid famine, various plant protection measures are to be adopted.

In that case farmers' education is very important, because it is well known that nation's educated farmers, due to their greater potentiality, can catch up technologies rapidly. Recognizing this, like many countries during the last thirty years, investment of most developing countries in their education systems were the largest determinants of economic growth.

It is noted that education of farmers increases income as education is an indispensable element for economical and social progress.

Most of the developing countries villagers are illiterate and live on subsistence farming. Without education to gear up income generating works and pest control is difficult for them. So farmers' trainings are very important. The knowledge in plant protection helps the farmers to understand the basics of Plant Protection, its importance and potentials. Moreover the farmer gets an idea about different groups of pest, their morphological features, destructive stages, and nature of damage, symptoms and the possible management practices.

Various approaches and data were used in the former studies. However, it is not easy to pinpoint the sources of the differences in the previous studies because of their model specifications.

## **METHODOLOGY**

The purpose of this study was to assess farmers' knowledge and skills of plant protection for the farm pest and disease prevention and control. The research was to understand farmers' knowledge of using agrochemical and non-chemical pesticides and fungicides.

The study was conducted in some villages (Makhinjauri, Makhvilauri, Erge) of Khelvachauri region, Georgia. Using a case study through qualitative data collection techniques such as participatory observation, focus groups, transect walks, and structured and semi-structured interviews with 40 randomly selected farmers. The qualitative data was collected through a participatory way with the researchers and farmers. For increasing validity and reliability, data was recorded, photographed, written and checked with them during the data collection process. The questionnaire was also designed by the researchers and tested in a neighboring village. Qualitative and quantitative analyses were applied to the data.

The general objectives of the study were also to help farmers to increase their knowledge in plant protection, improve their income through production of competitive agricultural products, to ensure the high quality of food in connection with the demand, to take measures for the decrease of the production cost, to reinforce the processing, to guarantee the social cohesion and to confront poverty among farmers, to reduce the regional inequalities and to contribute to development and protection of the natural sources and the environment.

The major problems of the learning activity and their solutions were: To convince the farmers to be trainees. The problem was solved by transferring the training meetings near farmers' residences. The textbook, containing technical and scientific terms, was rather difficult for them to study, so they decided and realized its popularization.

The average age and agricultural experience were 35, maximum age 60, minimum -27. Farmers of all ages, genders, national origins income and educational levels. Among them 80% were male and 20% female.

To train the training staff in order to be able to provide efficiently the required knowledge, therefore they organized two training circles (ten days each) for the trainers.

The learning activity runs daily (not more than 4-5 hours per day). The whole program lasts 150 hours.

## **RESULTS**

### **Community characteristics**

Khelvachauri Region is situated to the far south of Georgia. The region has specific geographic and climate conditions (Average annual temperature: 12,80C; Average annual precipitation: 1500 mm; Climate: near to subtropical) Most of its parts are mountainous. It is practically unable to explore

new areas. Agriculture dominates in the regional economy though industry is also developed there. Agriculture takes the leading part. There is developed tea, citrus, and others. 9911h out of the total regional area is used for agricultural purpose including 1366h for harvesting, 6846h for grown plants, 1670h for pastures, 26409h for forest, 652h for bushes, and the rest 4172h is utilized for roads, buildings, water canals, etc.

### **Farmers' knowledge**

Farmers in this area had an individually small scale family peasant farming system. Their existing practice and knowledge regarding understanding pests' life cycle, and appropriate time and method of chemicals use were to some extent low. The farmers hardly used nonchemical pest and disease control methods (e.g. mechanical and biological techniques and natural enemies) and their awareness of using these methods was low. Although the farmers were to some extent aware of the side-effects of the excessive use of chemicals, they still continued utilizing chemical inputs due to the shortage of knowledge of and little access to the alternative or sustainable techniques and facilities.

Farmers identified that their main information source for plant protection was private input sellers, whose information were not much reliable and they were not interested in their training program.

The instructors and the supervisors tried to inform the farmers about the necessity to follow the technological evolution in order to improve the productivity of their land and to get to know the mechanisms that interfere in the course of the food production and distribution. However, the target group consisting of individuals with a high traditional way of thinking is not so willing to learn new methods of confronting agriculture. The lack of specific knowledge, the narrow minded conception of how economy and commerce function based upon the accustomed practice and the natural suspicion against anything innovative were the most significant obstacles to learning. Notwithstanding, the management responsible and the trainers achieved to convince them to enter the world of information and to collaborate with each other. Consequently, despite the initial doubts and hesitations and of the fact that this initiative has no precedent in Georgia, this study managed to maximize the participation and to offer quality knowledge to a large population of farmers in Georgia.

The result showed, that after training farmers, knowledge in plant protection was increased and it was basis on income of Agriculture.

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