The Case, Problems and Solution Suggestions of The Greenhousing In Biga

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Abstract : The greenhousing activity in Biga firstly started in an area of 500 m2 in 1985. In a review study, it was observed that total green housing area of 52.000 m2 and 42 greenhousing cooperations were reached. Greenhouses in Biga are in the structure of bow roof, with plastic cover and high tunnel cold greenhouses. As the first investment expenses are low and high productivity in a unit area, producers can make much money at a short time. Due to all enterprises are small family cooperations, producers don't pay to workers. The distribution of productive power is regular in year and all enterprises use dripping irrigation system. Lettuce is cultivated in greenhouses in winter. In spring, summer and autumn cucumber, tomato and bean are cultivated. While some of the produced yields are consumed in Biga and around villages, many parts of the yields are marketed in Bandırma. The big problems in greenhousing cooperations; increasing of entry prices, soil tiring, unconciously manurig and giving pesticides, structural problems, insufficient of technique knowledge, packing and marketing. In this presentation, the present case of greenhousing enterprises in Biga as alternative incoming resource, its mainly problems and its possible solutions will be discussed.

Keywords: Biga, Greenhouse, family enterprise, plant production

Introduction

The first greenhouse in Biga was established in the village of Çeşmealtı in 1985 by a manufacturer. Currenty in Biga 42 manufacturer is engaged in greenhouse and 52 decare greenhouse space and 155 greenhouses are present. These enterprises, 19 of them are in the center of the Biga and other manufacturers are operating in the village. Biga plain, by the presence of 89.000 hectares watered, 640.000 hectares not watered, totally 729.000 hectares farmland is the most important district of Çanakkale from the agricultural aspects (Çavuşgil and et al., 2005: 4).

According to the long years of climate data, average rainfall in the region is 765.7 mm and average relative humidity is 74.5%. Annual average temperature is 14.2 0C, the highest temperature and lowest temperature are 39.8 0C and -11.4 0C respectively. (Yavuz and et al., 2004:163)

The purpose of this research is the development of Biga on the greenhouse industry, to identify the problems facing in the sector and to bring solutions to these problems. For this purpose, all owners of greenhouse in Biga were discussed and all inventory owned by businesses were prepared.

Materials and Methods

In this study, all greenhouse enterprises in Biga and village were selected as the main material. A survey comprising 18 questions were asked to business owners for the development of greenhouses and to identify problems in greenhouses in Biga and villages. The data obtained from the sera owners were evaluated through % rates and analyzed under the main heading.

Results

In the inventory study, 42 greenhouse owners were interviewed in Biga and surrounding villages, and the inventory information about greenhouse and greenhouse manufacturers were given.

Greenhouse Site Selection and Distribution of Greenhouse Enterprises

When all the ecological and economic factors that effect the greenhouse site selection taken into consideration, definition of the location of the greenhouse can be made as follows: in autumn, winter and spring months, it has high light intensity, with the winter is mild, good transport facilities, market demand with cheap fuel, constant electricity, good-quality irrigation water and soil with heavy winds closed and qualified workers can be found where appropriate are the places for greenhouse.(Sevgican et al., 1989 : 34). 19 of them in the greenhouse business (45.23%) are in the center of the Biga, 23 of them (54.76%) showed activity in the village.

Observations Related to The Manufacturer

Experience of manufacturers in the industry ranged with 1 from 23. The average number of years of dealing with greenhouse growers is 8. The educational level is often high school. For nine of them (21.4%) the greenhouse business is a additional work. None of the greenhouse producer did not use credits, incentives, support. New developments in the greenhouse can be examined in three groups: the greenhouse structure improvements, new ways to reduce greenhouse labor and using the greenhouse except growing plants (Yüksel et al., 2000: 233).

Although manufacturers are open to innovation of the manufacturers and to search of an alternative open to innovation, they did not participate in activity about agricultural information (conferences, symposia, etc.) in the area. Many manufacturers have no information on modern agricultural practices such as using computer in greenhouses, soilless agriculture, organic agriculture, GAP, EUREPGAP. Many manufacturers do not hold any record of fertilizers, drugs and yield. Hence the best evaluation method for small fragmented land is greenhouse, farmers having small land turned to this sector.

Structural Features

Greenhouses are classified according to their size, organization forms, temperatures, roof shapes, types of materials used in the skeleton and mask and also mobility status. According to their size greenhouses are separated from big, medium and small greenhouses. If floor area greater than 1000 m2, greenhouse is big greenhouse. If area between 100-1000 m2, greenhouse is medium greenhouse and if area smaller than 100 m2, greenhouse is small greenhouse (Yüksel et al., 2000: 36).

Sizes of the greenhouse range in between 50 m2 to 3250 m2. The average size of the greenhouse was found to be 344 m2. Total greenhouse area is 52 000 m2 and average greenhouse area per farm is 1238 m2. 6 greenhouse enterprises (14.28%) have block greenhouses and the other 36 enterprises (85.72%) have individual greenhouses. Because of less snowfall, the block greenhouse was established in villages near the sea.

Greenhouses in Biga are usually structured as a spring-roofed, plastic covered high-tunnel shapping and cold. In individual greenhouses, base of greenhouse is thee oak piles and in block greenhouses, base of greenhouse is a concrete pillar. In all skeletal material used in pipes but wooden greenhouses profiles were not found. As greenhouse covering materials in all of the ultraviolet (UV) doped with 3 to 3.5 years in life are using plastic sheeting. Because of lightweight, inexpensive, easily workable, durable, good light transmission plastic was preferred.

Depending on the vegetable side elevation varies between 1.75 to 3.00 meters in vegetable greenhouses. As the issue of width and length in the plastic greenhouses was relatively free movement, usually width of 6-9 m and length of 30-60 m are used (Sevgican et al., 1989: 35). It was observed that the width and length of greenhouse changing in a very large extent. The ridge height of greenhouse ranged 2 m and 4 m. The side elevation in greenhouse cultivation is 2 m and also in seedling greenhouse is 1.5 m. In cultivation greenhouse, width is 8.2 m in the 29 companies (69%) and height is 3.5 m in the 35 business (83.3%) were observed. In individual greenhouses, width varies between 6 m and 12 m, and in block greenhouse it varies between 20 m and 50 m.

Ventilation and Moisture Control

For propose of natural ventilation is adequate, total area of roof windows should be between 16-20 % of the greenhouse floor area and the openings should be set according to environmental conditions (Yüksel et al., 2000: 71).

In four greenhouses (2.58%) of examined 155 greenhouses, the roof is ventilated, but ventilation of the roof is not in others. 36 (23.22%) greenhouses were included in the side ventilation, and the remaining 119 greenhouses (76.77%) are not included in the side ventilation. In all of the greenhouse has been equipped with front and back air conditioning, hot summer weather when fully open front and back surfaces have tried to improve the ventilation efficiency. Generally poor ventilation was observed. Mandatory ventilation (ventilator-Extractor) has not been found. Ventilation was not getting control CO2 and humidity but in order to reduce greenhouse temperature. As a result of this, mildiyö and root rot disease was observed to be effective in the greenhouse.

Heating & Cooling

So the greenhouse effect of sunlight in the summer, especially growing greenhouse inside temperature, outside air temperature may be higher than 50-10 0C. This reduction of assimilation in plants and may lead to arrest. That is gained with assimilation of the plant material, may be less than that lost through respiration (Yüksel et al., 2000: 128).

Heating is made in three greenhouses with a total area of 4470 m2 (8.6%). Heating is not to ensure optimum temperature for the plant needed but only to ensure earliness in February and March. Central heating system is used in the two companies, stove is used.one company.

Cooling system is not used in any business. Whereas the type of greenhouse warming is too important to be cooled even in winter.

Irrigation and Drainage

Review of the greenhouse is used all the drip irrigation method. Taken from artesian well water is filtered and purified by passing hidrosiklondan thus prevents clogging of drip breast. Chelate fertilizers are added to the system with fertilizer tanks and soil pesticides are injected into the system.

Only one of the greenhouses used in the internal drainage system, both internal and external drainage was not used in others.

Supply of Seed-Seedling

All greenhouses were used in the hybrid seeds. In recent years, the craftsmanship of local producers as well as less healthy because they are directed to prepare the seedlings were observed. The producers also were grafted on seedlings.

Production Pattern

784 m2 areas (1.5%) of review of the greenhouse were grown ornamental plants. In all of the other greenhouse vegetables are grown. Type usually cucumbers in summer and lettuce(curly) -salad in winter were grown. Moreover, purslane, eggplant, beans, peppers and tomatoes are grown by the manufacturer.

Fertilizing and Spraying

Soil pH values of Biga Plains ranged from 7.49 to 5.85. (Çavuşgil et al. 2005: 17).

The cucumber plants that are sensitive to acidity in the structure like the neutral or slightly alkaline soil (Sevgican et al., 1989: 128).

Salad grows well in soils with pH = 6.0-7.0 , lettuce grows well in soils with pH = 5.5-7.0 (Aybak et al. 2002: 46).

In review, 14 manufacturers (26.9%) analyzed their soil at least once. According to the results of this greenhouse soil pH values were found to vary between 4.5 and 7, the average value was found to be 5.98.

According to the analysis of the Biga Plains soil lime content is very low and many samples were found to contain quantities of lime (Çavuşgil et al. 2005: 18).

Greenhouse manufacturers in the investigation they were often used on fertilizer: Before starting the production of cucumber in soil , 10 ton/da of burnt.manure used were found. 15-15-15 compound fertilizer as base fertilizer is used often. Drip irrigation system with ammonium nitrate, urea, potassium nitrate, MAP and humic acids are used. In addition, some manufacturers are using magnesium nitrate and ammonium sulfate fertilizers. Against micro-nutrient deficiency is the use of foliar fertilizers.

In greenhouses rest rotation is not applied. Usually removed product immediately the soil has been processed with machines then the floor manure thrown and new products planted.

Examined business are to spray once the average 7-8 day. the production of cucumber is commonly used systemic drugs in particular have been identified. Especially, cucumber production commonly used systemic drugs were determined. Because of the hybrid seeds are used to fertilize itself, hormones are not used. However, they are kind of some plant growth by the regulators were used. Some producers are spraying gas engine, some spray back with a portion had been found.

Diseases and Pests

Cucumber and salads widely grown in greenhouses mostly determined diseases; cucumber angular leaf spot disease (Pseudomonas syringae pv. Lachrymans), cucumber downy mildew (Pseudoperenospora cubensis), the powdery mildew on cucumber and lettuce (Erysiphe cichoracearum), the gray mold disease on cucumber and lettuce (botrytis cinerea), white mold disease on cucumber and lettuce (Sclerotinia sclerotiorum), mildiyö disease in lettuce (Bremia lactucae), such as bacterial and fungal diseases.
Most identified harmful pests are red spider (Tetranychus spp.), Leaf lice (Aphis gossypii), leaf gallery beetle (Liriomyza spp.), Green worm (Heliothis armigera), thrips (Heliothrips haemorrhoidalis Bouche).
In the examined greenhouse, soil solarization is not done, and most were not known.
Harvesting, packaging and marketing

Cucumbers harvested are put into bananas boxes so that the reduced sweating and moisture loss. 15-20 pieces of Salad and lettuce in a big plastic bag were shown to be introduced to the market.

The biggest problem in marketing the market could not be a regular supply of goods because the supply / demand balance against the manufacturer of the disruption caused by the instability of the prices that have been identified.

Solution Proposals

Although it is aimed to enhance the efficiency in production, today's product quality 'and' food security 'phenomenon has gained importance. Due to consumer demand for safe food, production technology has also affected (Tüzel et al., 2004: 17).

Biga's greenhouse producers should give up being the small family businesses to be more healthy and more modern facilities for certified products. In the coming years it will become necessary. It will be possible to getting consolidation and institutionalization for small businesses.

The most important deficiency in Biga’s greenhouses is ventilation. Therefore length of the greenhouse should be short and planting should not be frequent. Otherwise, due to beig the excess moisture inside, fungal and bacterial diseases are steadily increasing. For an effective ventilation of the greenhouses, length is more than 30 m and the greenhouse should be in the prevailing wind direction.

Producers have little information about fertilizers and fertilization, disease, pests, pesticides. Fort his reason, it is recommended to take advice.

One of the biggest problem is marketing. To overcome this problem, new markets should find or production planning should be done well.

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