

RESEARCH CONCERNING THE SPECIALISTS' OPINION ON THE DEVELOPMENT OF INTEGRATED SERICULTURE IN FAMILY REPRODUCTION FARMS

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Abstract

The paper aimed to identify the specialists' opinion on the development of integrated sericulture in family reproduction farms, using the structured questionnaire based survey on a sample of 480 individuals. The family reproduction farm needs 1 ha agricultural land (50 % mulberry plantation and 50 % seed plantation, layer making field, sowing field), 150 s.m. silkworms rearing space. This farm could achieve 400 kg silk cocoons, of which the most of part could be used for producing 1,000 egg boxes and distribute them to other farmers, 10 kg cocoons for silk filament, 25 kg pupae for pharmaceutical purpose, 50 kg unreeling cocoons for producing handicrafts in the farm, 10 kg lint, 2,000 kg layer wastes for fish feeding. From the analysis of 30 integrated production variants based on this model family reproduction farm, the interviewed persons have chosen 10 variants assuring to the farmer a profit ranging between Euro 80,223 Euro and respectively Euro 126,088 in the first 8 years of activity. As a conclusion, sericulture could become a profitable sector by practicing integrated production management.

Key words: opinion testing, integrated sericulture, family reproduction farms

INTRODUCTION

Sericulture has a long tradition in Romania and is still practiced even though it registered a decline during the last period of time [6, 12].

Family farms need to be supported with viable solutions for production diversification and integration as well as for marketing of sericultural products [8, 11].

In the recent years, the scientific research has responded to some major problems providing *Bombix mori* high value breeds and hybrids [7], high productivity modules for silk worm growing, machinery for unreeling lint from silk cocoons for SMEs [9], variants of integrated production management for family sericultural reproduction farms [4, 5, 8].

The development of integrated sericulture is compulsory in order to balance the lack of cocoon collection system and failure of processing industry, as well as

the dysfunctionality of silk market in Romania at present.

In this context, the paper started from some existing variants of integrated management for family reproduction sericultural farms [2, 3, 10]. To know which of the options developed in the previous research [10] are the most attractive for beneficiaries, a panel of agricultural experts was set up in order to ask their opinion using a questionnaire based survey. Therefore, the ultimate goal of this study was to test farmers' opinion on various variants of integrated sericulture in order to establish which of them are suitable to their financial resources and profit target in the best way.

MATERIAL AND METHOD

The research was conducted from November 2011 to November 2012 on a sample of 480 agricultural experts from 8 counties situated in the Southern Romania.

The study was based on a structured questionnaire based survey. The questionnaires included a large variety of questions, logically presented, to which the

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The manuscript was received: 16.02.2013

Accepted for publication: 14.05.2013

respondents had to answer ticking one or more alternatives [1].

The questions were referring to the following aspects: sericulture importance for Romania, farm category where sericulture could be practiced the best, farmers motivation to practice silk worm rearing, choice of integrated production management variants based on the related profit, processing of unreeling cocoons in the farm.

The interviewees' answers were statistically processed and interpreted according to the specific marketing methods (semantic diferential method).

RESULTS AND DISCUSSIONS

Socio-professional characteristics of the sample used in questionnaire survey

Age structure: Of the 480 respondents, 60% belonged to the age category 40-49 years, 28% were between 30 and 39 years old, 7% older than 50 and 5% between 20 and 29 years old.

Sex structure: 92% (442) respondents were men and 8% (38) women.

By profession: Of the 480 respondents, 43% (206) were zootechnicians, 32% (154) were agronomists and 25% (120) horticulturists.

Structure by county of origin: 20.8% Bucharest, 10.4% Arges County, 20.8% Calarasi County, 4.1% Dolj County, 10.4% Ialomita County, 10.4% Ilfov County, 10% Prahova County, 13.1% Teleorman County.

Interpretation of the interviewees' responses

At Question 1: "Do you think that sericulture is an important area of agriculture in Romania?", 85% (408) of respondents said „yes” and 15% (72) answered „no”.

At Question 2: "Could sericulture contribute to the increase of rural population income?", 88% (422) of respondents said „yes” and 12 % (58) answered „no”.

At Question 3: "What type of farming could be suitable for sericulture development in Romania?", 62.29% of the interviewees indicated family farms, 20.41% mentioned authorized person (PFA), 7.52% opted for farms within commercial companies, 5.20% preferred farms in agricultural societies and 4.58% farms belonging to Sericulturists' Association (Table 1).

Table 1 Observed values regarding opinion on farm category where sericulture could be practiced

Answer variant	No. of individuals	Share (%)
Authorized person	98	20.41
Family farm	299	62.29
Sericulturists' Association	22	4.58
Agricultural Societies	25	5.20
Commercial Companies	36	7.52
Total	480	100.00

Source:Questionnaires. Own calculations.

At Question 4: "Would you like to practice sericulture?", 73% (350) interviewees answered „no” and only 27% (130) responded „yes”.

At Question 5: "Which are the reasons why you would like to practice sericulture?", of the 130 individuals who said „yes” at the previous question, 75% answered that they would like to practice sericulture in order to get additional income, 8% for sericulture can be done in Spring-Summer seasons, 7% for sericulture can be achieved in the family, 4% for sericulture is

a clean and environmentally friendly activity, 5% for sericultural products are natural, organic, unpolluted products and 1 % other reasons (no job) (Table 2).

At Question 6: "Which are the reasons why you do not want to practice sericulture?", of the 350 individuals who at Question 4 said „no”, 70% motivated that they are dealing with other activities and have no time, 8% for sericulture is not a profitable activity, 6.8% because they do not have financial resources and 4.5% for silk worms are hardly to grow (Table 3).

Table 2 Observed values regarding reasons to practice sericulture

Answer variant	No. of individuals	Share (%)
Additional income source	98	75
Easy to be practiced in the family	9	7
Work in Spring-Summer season	10	8
Environmentally friendly activity	5	4
Organic sericultural products	6	5
Other reasons	2	1
Total	130	100

Source:Questionnaires.Own calculations.

Table 3 Observed values regarding the lack of motivation for practicing sericulture

Answer variant	No. of individuals	Share (%)
I am doing something else and have no time	245	70.0
I am not passionate by sericulture	6	1.7
I have no rearing space	8	2.2
Silk worms are hardly to grow	16	4.5
Sericulture is not a profitable activity	28	8.0
I have not knowledge and experience in sericulture	9	2.5
Sericultural products can not be sold on the Romanian market	13	3.7
I have no financial resources	24	6.8
Other reason	1	0.6
Total	130	100

Source:Questionnaires.Own calculations.

3.7% respondents said that sericultural products can not be marketed in Romania, 2.5% that they have not knowledge and experience in the field, 2.2% for they have no rearing space, 1.7% because they have no passion for sericulture, 0.6% other reasons.

At Question 7: "Do you agree that for a family sericultural farm it is needed: 1 ha agricultural land, of which 0.5 ha mulberry plantation, 0.5 ha other destinations (mulberry seeds, layers etc), 150 s.m. silk worm rearing space, water source and specific inventory?", 65% (312) interviewees said „yes” and 35% (160) answered „I do not know”.

At Question 8: "Do you agree that production integrated management in mulberry tree growing, silk worm rearing and sericultural products processing in the family farm could lead to an increased profitability?", 92% (442) respondents gave an affirmative answer and 8% (38) answered „I do not know”.

At Question 9: "Which integrated sericultural variant from the ones given below would you prefer?", 51% respondents mentioned CD3VM2 variant, 18% CD2VM2 variant, 15% CD1VM2 variant, 7%

CD2VM1 variant and just 5% CD1VM1 variant. The significance of the symbols mentioned in Table 4 is the following one: CD1-Mulberry plantation 0.5 ha+ Layer maker field 0.5 ha; CD2- Mulberry plantation 0.5 ha+Seed plantation field 0.2 ha+Sowing field-1 0.1 ha + Field-2 0.2 ha; CD3- Mulberry plantation 0.5 ha+ Seed plantation 0.2 ha +Layer maker field 0.1 ha +Sowing Field-1 0.2 ha; VM1-Silk worm rearing for producing 400 kg cocoons destined to obtain 1,000 egg boxes, 10 kg silk filament, 25 kg fresh chrysalides, 50 kg processed cocoons in handicrafts, 10 kg lint and 2,000 kg layer waste; VM 2- Silk worm rearing for producing 400 kg cocoons of which 300 kg for obtaining eggs, 100 kg for silk filament, 25 kg chrysalides, 10 kg lint and 2,000 kg layer waste.

At Question 10: "What variants of cocoons marketing do you prefer?", 70% (336) interviewees would prefer to process cocoons in handicrafts and then to sell them, 25% (120) would prefer to use cocoons for producing eggs in order to sell them to other sericulturists, 5% (24) would prefer to process cocoons in other farms.

Table 4 Observed values regarding choice of integrated production variants in mulberry tree growing, silk worm rearing and processing in the farm

Integrated production variant	No. of individuals	Share (%)
CD1VM1	24	5
CD1VM2	72	15
CD2VM1	34	7
CD2VM2	86	18
CD3VM1	19	4
CD3VM1	245	51
Total	480	100

Source: Questionnaires. Own calculations.

At Question 11: "Do you know that unreeled cocoons could be used for producing handicrafts with low cost for detergents, colorants, water and electricity?", 62% (298) interviewees said „yes” and 38 % (182) answered „no”.

At Question 12: "If you decide to process cocoons in handicrafts, which products from

the list given below would you choose?", 37% of respondents mentioned „Portrait” picture, 37% ”Story” picture, 33% necklaces, 30 % bags, 23 % floral brooches, 20 % thick fabrics for Autumn-Winter season clothes, 13% thin fabrics for Spring-Summer clothes, 12% for woven belts, 5% „Shantung” threads (Table 5).

Table 5 Observed values regarding opinion on cocoon processing in handicrafts

Answer variant	No. of individuals	Share (%)
P1 Colored Shantung threads	24	5
P2 Thick fabrics for Autumn-Winter clothes	96	20
P3 Thin fabrics for Spring-Summer clothes	62	13
P4 Bags	144	30
P5 Woven belts	58	12
P6 Knitted belts	48	10
P7 Necklaces	158	33
P8 Floral brooches	110	23
P9 Portrait Picture	178	37
P10 Story Picture	178	37
Total	130	100

Source: Questionnaires. Own calculations.

At Question 13: "For what reason do you think that crafted products made from silk cocoons would be purchased on the Romanian market?", 24% of respondents answered for „utility”, 10% for „design”, other 10% for

„beauty”, other 10% for „naturalness”, 11% for „accessible price”, 15% for „uniqueness”, 8% for „color”, 7% for „easy wearing” , 5% for resale to export (Table 6).

Table 6 Observed values regarding reasons to buy handicrafts made of silk worm cocoons

Answer variant	No. of individuals	Share (%)
Design	48	10
Color	38	8
Uniqueness	72	15
Naturalness	48	10
Easy wearing	34	7
Accessible price	53	11
Utility	115	24
Resale to export	24	5
Beauty	48	10
Total	480	100

Source: Questionnaires. Own calculations

At Question 14: "How important do you consider to be the characteristics of handicrafts made of silk cocoons in the purchasing decision?", the answers given by respondents are presented in Table 7.

At Question 15: "What profit integrated variant for the 1st 8 years of activity do you choose from the table given below?". The respondents answers were focused on the first 10 variants whose profit was over Euro 80,000 (Table 8).

Table 7 Observed values regarding opinion on the importance of handicrafts characteristics for purchasing decision

Characteristics	Very important	Important	Satisfactory	Unimportant	Less important
Design	63 %	25 %	5 %	2 %	5 %
Color	32 %	48 %	14 %	5 %	1 %
Uniqueness	20 %	73 %	4 %	2 %	1 %
Naturalness	60 %	31 %	5 %	2 %	2 %
Easy wearing	48 %	42 %	5 %	4 %	1 %
Accessible price	66 %	30 %	2 %	1 %	1 %
Utility	38 %	42 %	8 %	6 %	4 %
Export object	42 %	35 %	10 %	5 %	8 %
Beauty	58 %	38 %	2 %	1 %	1 %

Source: Questionnaires. Own calculations

Table 8 Observed values regarding opinion on integrated management variants and the related profit for the 1st 8 years of activity

Variant	Profit Euro	No. of respondents	Share %	Variant	Profit Euro	No. of respondents	Share %
CDV3+VMV1P5	126,088	144	30	CDV3+VMV1P9	70,973	-	-
CDV2+VMV1P5	124,086	58	12	CDV2+VMV1P9	69,776	-	-
CDV3+VMV1P10	117,370	48	10	CDV3+VMV1P7	69,116	-	-
CDV2+V,V1P10	116,173	62	13	CDV2+VMV1P7	67,919	-	-
CDV3+VMV1P4	95,496	34	7	CDV1+VMV1P4	56,869	-	-
CDV2+VMV1P4	94,298	19	4	CDV2+VMV1P1	55,359	-	-
CDV1+VMV1P5	87,458	24	5	CDV3+VMV1P1	49,056	-	-
CDV3+VMV1P3	85,341	29	6	CDV1+VMV1P3	46,716	-	-
CDV2+VMV1P3	84,144	29	6	CDV1+VMV1P2	41,598	-	-
CDV3+VMV1P2	80,223	33	7	CDV1+VMV1P6	40,289	-	-
CDV2+VMV1P2	79,026	-	-	CDV1+VMV1P8	35,830	-	-
CDV3+VMV1P6	78,915	-	-	CDV1+VMV1P9	32,348	-	-
CDV1+VMV1P10	78,715	-	-	CDV1+VMV1P7	30,483	-	-
CDV2+VMV1P6	77,718	-	-	CDV3+VMV1P1	10,431	-	-
CDV3+VMV1P8	74,455	-	-	TOTAL		480	100
CDV2+VMV1P8	73,258	-	-				

CONCLUSIONS

The opinion of the interviewed experts was that sericulture is a profitable activity if production is diversified and an integrated management is applied.

In this way, more value added is created and the marketing of sericultural products will become more efficient.

Integrated sericulture should be practiced in family farms endowed with 150 s.m. silk worms rearing space, 1 ha

agricultural land, water source and sericultural inventory, using family labor.

Mulberry tree growing has to be done on 50% of the land in order to produce leaves and the remaining 50% of land could be used for producing layers and mulberry seeds.

Silk cocoons could be used for producing egg boxes, silk filament, handicrafts, chrysalides for pharmaceutical industry, lint and layer for fish feeding.

The most attractive variants of integrated and diversified production have been the ones assuring a profit higher than Euro 80,000 in the first 8 years of activity.

ACKNOWLEDGEMENTS

The authors express their thanks to Ministry of Research and Technology for its financial support given to CEEX Project „*Integrated production and durable management of a family sericultural reproduction farm*”, PC DO 2-PT 08/1195/2005, SERI, Contract No.40/2005-2008. Also, they address their thanks to all the 480 agricultural experts for their kindness to participate to this questionnaire based survey.

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