

Picking of wild berries and edible mushrooms in the Rovaniemi region of Finnish Lapland

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TIIVISTELMÄ: LUONNONMARJOJEN JA SIENTEN POIMINTA ROVANIEMEN SEUDULLA

Saastamoinen, O. & Lohiniva, S. 1989. Picking of wild berries and edible mushrooms in the Rovaniemi region of Finnish Lapland. Tiivistelmä: Luonnonmarjojen ja sienten poiminta Rovaniemen seudulla. *Silva Fennica* 23(3): 253-258.

According to 459 and 350 questionnaires sent in 1983 and in 1985, respectively, households in the Rovaniemi region, located on the Arctic Circle, eagerly picked wild berries. In both years, four out of five households picked at least one species of berry. In 1983 the total amount of wild berries picked was 29.2 kg per capita. In 1985 it was 15.0 kg per capita. Three species, the lingonberry (*Vaccinium vitis-idaea* L.), cloudberry (*Rubus chamaemorus* L.) and bilberry (*Vaccinium myrtillus* L.) made up 96 % of all the wild berries picked during both years. Most of these berries were picked for the family's own use, but many were also picked for sale. In 1983, 43 % of all the berries picked were sold. In 1985, 19 % were sold. The cloudberry, although difficult to find, is the most important commercial species and also for household use it is the most sought-after wild berry. Only very small amounts of edible mushrooms were collected, 1.0 kg per capita in 1983 and 1.3 kg in 1985.

Kyselytutkimuksella selvitettiin luonnonmarjojen ja sienten poimintaa Rovaniemen seudulla, Lapissa, vuosina 1983 ja 1985. Noin 80 % alueen kotitalouksista osallistui ainakin yhden kyselyssä mainitun marjalajin poimintaan kumpanakin vuonna. Luonnonmarjoja poimittiin yhteensä 29.2 henkilöä kohti vuonna 1983. Vuonna 1985 tuo määrä oli 15.0 kg. Puolukka (*Vaccinium vitis-idaea* L.), hilla (*Rubus chamaemorus* L.) ja mustikka (*Vaccinium myrtillus* L.) muodostivat 96 % talteenotetusta marjamäärästä. Pääosa luonnonmarjoista poimittiin kotitalouden omaan käyttöön. Vuonna 1983 myytiin 43 % ja 19 % vuonna 1985 poimittujen luonnonmarjojen kokonaismäärästä. Tärkein myyntimarja on hilla. Se on myös haluttu marja perheen omaan käyttöön. Sienten poiminta on Rovaniemen seudulla toistaiseksi vähäistä.

Keywords: fruits, berry picking, picking for own use, commercial picking, *Rubus chamaemorus*, *Vaccinium vitis-idaea*, *Vaccinium myrtillus*, edible fungi.

ODC 892.7 + 892.53

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Accepted September 20, 1989

1. Introduction

Lapland is the northernmost part of Finland. Forests grow slowly in its severe northern climate, but timber production and non-timber uses of forests have special regional importance owing to the limited possibilities for agricultural production.

Among the non-timber uses of forests, picking wild forest and peatland berries and edible mushrooms has always held a special position in Finland. Wild berries are a traditional source of food and a well-established export product. In modern society both of these functions have survived. In addition, berries are used widely in the domestic food industry. Berry picking gives extra tax-free income to people who pick berries for marketing, and collecting them for the family's own use is also a popular leisure activity.

2. Material and method

The Rovaniemi region refers here to two communes, the town of Rovaniemi and Rovaniemi parish (rural commune).

The town of Rovaniemi is located just on the Arctic Circle. The population amounts to 30 000 inhabitants. This town is the administrative and commercial centre of Lapland. Rovaniemi parish, a rural commune surrounding the town of Rovaniemi, has a population of 20 000 inhabitants. Besides services and small industries, its main primary activities are forestry, agriculture and water power plants. In addition, both communes rely heavily on tourism. The land area of Rovaniemi region covers 7 537 km² and the population density is 6.7 persons per km². The population of the Rovaniemi region includes roughly one-fourth of the total population of Finnish Lapland.

The method of the study was a questionnaire sent through the ordinary postal system. Because the basic unit collecting berries and mushrooms is the household, the study population consisted of households. A household is defined here as a family or single person having its or his own meal

Compared to other parts of Finland, in Lapland berry and mushroom picking has two specific features. Firstly, edible mushrooms have traditionally not been valued very highly. Secondly, the cloudberry (*Rubus chamaemorus*) has always been the most desired wild berry, both commercially and for household use.

The purpose of this paper is to report on the berry and mushroom picking habits of people living in the town of Rovaniemi, the provincial centre of Finnish Lapland, and its surrounding rural commune. The paper concentrates on two issues: Of the available species, what are these households interested in picking? What are the actual amounts of berries and mushrooms collected?

arrangements. In 1984 there were 18 307 households in the Rovaniemi region.

The questionnaire was mailed twice, once in 1983 and again in 1985. The sample was chosen randomly from the official population register.

The questions put to households concerned the participation in picking wild berries and edible mushrooms in the years studied. The total amounts of nine wild berry species, the false morel and other edible mushrooms picked for own use and for sale, were main topics in the questionnaires. The species of other edible mushrooms collected were not asked.

In 1983 the sample included 459 households, of whom 358 replied. The response was 80 %, excluding from the sample 14 unknown addresses. In 1985 the sample was 350 households of which 291 answered. The response was 84 %, excluding 3 unknown addresses. These percentages of reply are a little higher than usually obtained in these kinds of surveys.

Comparison between the socio-economic distribution and the size of households between the responders and the population

showed that the data are fairly representative. The relatively large sample size means that, in principle, the reliability of the results is satisfactory. However, there remains the possibility of systematic errors in the answers. In both years the questionnaire was sent in mid-October just after the end of the berry and mushroom season, and the time-lag between the first picking activities and arrivals of the questionnaire may have decreased the reliability.

In addition, with the survey method, any

3. Results

People living in the Rovaniemi region engage in picking wild forest and peatland berries. During both 1983 and 1985, four out of five households picked at least one species of berry for their own use (Table 1).

The opposite is true for edible mushrooms. Only one third of all households picked these natural products. In Lapland the traditional belief has been that mushrooms are most suitable for reindeer food. This belief seems to be disappearing slowly.

During both years households in the rural commune participated slightly more actively in berry picking than did their urban neighbours. In 1983 urban families participated more actively in mushroom picking, but in 1985 the rate of participation was slightly higher in rural areas.

The highest participation rates for berry picking concerned the three familiar species: lingonberry (*Vaccinium vitis-idaea*), bilberry (*Vaccinium myrtillus*) and cloudberry (*Rubus chamaemorus*). The lingonberry and bilberry are abundant species but in the Rovaniemi region black crowberry (*Empetrum hermaphroditum*) has the highest total biological yield (Jaakkola 1983). Picking of this berry is unusual as is picking of bog whortleberry (*Vaccinium uliginosum*). So far, most people do not know the potential of these two abundant species for household use. The raspberry (*Rubus idaeus*) and even more the arctic raspberry (*Rubus arcticus*) are appreciated but they occur and fruit sporadically and are found mainly in southern parts of Lapland.

The total amount of berries and mush-

rooms picked by all households was 30.2 kg per capita in 1983 and 16.3 kg in 1985 (Table 2). The difference in total amounts picked in the two years is large but typical: annual variations in biological yields are reflected in the amounts picked.

The biological yields in 1983 were at about average level for bilberries and cloudberries but higher than the average for lingonberries (Jaakkola 1983). In 1983 the market price for lingonberries was also high, and retail shops and other berry buyers bought three to four times more lingonberries than usual (Kujala et al. 1986). For these reasons, most of the difference in total picking between 1983 and 1985 is due to lingonberry picking.

In both years, the three most popular berries (lingonberry, bilberry and cloudberry) made up 96 % of all wild berries collected from forests and peatland. The role of other species is negligible so far, even though the abundant biological yields of certain berries (*Empetrum hermaphroditum*, *Vaccinium uliginosum*, and to lesser extent also *Sorbus aucuparia*) would provide great opportunities to increase picking.

In commercial picking, the most important species economically is the cloudberry (*Rubus chamaemorus*). During both years, almost two-fifths of the total cloudberry picking was sold. The price of cloudberries obtained by a picker in 1983 and 1985 was 33 FIM per kg. In 1983, 38 % of all the income obtained by berry pickers was from cloudberry. In 1985 the proportion of the berry income represented by cloudberries was 92 %. The average of the two figures is

Table 1. Participation (%) of households in the Rovaniemi region in collecting wild berries and edible mushrooms in 1983 and 1985.

Taulukko 1. Kotitalouksien osallistuminen (%) luonnonmarjojen ja sienten poimintaan Rovaniemen seudulla vuosina 1983 ja 1985.

Species Laji	For own use Oma käyttö		For sale Myynti	
	Year Vuosi		Year Vuosi	
	1983	1985	1983	1985
	%		%	
<i>Vaccinium vitis-idaea</i>	73	66	24	4
<i>Vaccinium myrtillus</i>	70	69	9	2
<i>Rubus chamaemorus</i>	58	67	11	11
<i>Rubus ideus</i>	14	13	-	-
<i>Sorbus aucuparia</i>	12	6	-	-
<i>Empetrum hermaphroditum</i>	7	2	1	-
<i>Vaccinium oxycoccus</i>	2	5	-	-
<i>Vaccinium uliginosum</i>	1	1	-	-
<i>Rubus arcticus</i>	1	1	-	-
<i>Gyromitra esculenta</i>	8	3	1	-
Other edible mushrooms - <i>Muita sieniiä</i>	25	34	-	-
At least one berry species - <i>Ainakin yhtä marjalajia</i>	77	81	27	11
At least mushrooms - <i>Sieniä</i>	30	35	1	-
Wild berries or edible mushrooms - Total <i>Luonnonmarjoja tai sieniiä - Yhteensä</i>	77	81	27	11

65 %; and according to this, about two-thirds of such wild berry income comes from cloudberry. The average price for cloudberry was 30 FIM per kg in Finnish Lapland in 1977-1985 (Kujala et al. 1986).

The commercial price for lingonberry obtained by a picker was 12 FIM per kg in 1983 and 8 FIM per kg in 1985. During both years the price for bilberries was little below 7 FIM per kg. As mentioned, in 1983 extraordinarily large amounts of lingonberries were collected for sale. The average price for lingonberries obtained by a picker was just above 9 FIM and respectively for bilberries just above 7 FIM per kg in Finnish Lapland in 1977-1985 (ibid.).

Commercial picking of lingonberries and bilberries depends much on their sale

prices. For these two berries, on a national scale Lapland is a marginal producer. If there are good yields in other parts of the country, the prices for lingonberries and bilberries, which ripen later in Lapland, remain low. In the opposite case, which is rare, prices in Lapland may rise high as illustrated by the 1983 lingonberry situation.

The false morel (*Gyromitra esculenta*) when properly spored or dried belongs to the edible mushrooms in Finland. It is virtually the only mushroom species that has commercial importance in Lapland. In the Rovaniemi region, however, it is picked commercially in small amounts and only occasionally.

4. Discussion

The total amounts of wild berries collected by inhabitants in the Rovaniemi region are about 2-4 times greater than the na-

tional average. Mushroom collection is lower than the national average (Saastamoinen 1983).

Table 2. Wild berries and edible mushrooms (kilograms per capita) collected by households in 1983 and 1985, and the distribution (%) of the collected berries and mushrooms for own use and for sale.

Taulukko 2. Luonnonmarjojen ja sienten poimintamäärät (kg/henkilö) sekä oman käytön ja myynnin osuudet (%) poimintamääristä vuosina 1983 ja 1985.

Species Laji	Total Yhteensä		For own use Oma käyttö		For sale Myynti	
	Year Vuosi		Year Vuosi		Year Vuosi	
	1983	1985	1983	1985	1983	1985
	kg per capita kg/henkilö		Percentage %		Percentage %	
<i>Vaccinium vitis-idaea</i>	16.3	4.8	48	87	52	13
<i>Vaccinium myrtillus</i>	6.1	3.9	72	94	28	6
<i>Rubus chamaemorus</i>	5.7	5.8	63	64	37	36
<i>Sorbus aucuparia</i>	0.4	0.2	100	100	0	0
<i>Empetrum hermaphroditum</i>	0.4	0.2	46	100	54	0
<i>Rubus ideus</i>	0.3	0.2	100	100	0	0
<i>Vaccinium oxycoccus</i>	0.0	0.1	100	100	0	0
<i>Vaccinium uliginosum</i>	0.0	0.0	100	100	0	0
<i>Rubus arcticus</i>	0.0	0.0	100	100	0	0
Wild berries - Total <i>Luonnonmarjoja - Yhteensä</i>	29.2	15.0	57	81	43	19
<i>Gyromitra esculenta</i>	0.1	0.1	80	100	20	0
Other edible mushrooms - <i>Muita sieniiä</i>	0.9	1.2	100	100	0	0
Mushrooms - Total <i>Sieniä - Yhteensä</i>	1.0	1.3	96	100	4	0
Wild berries and edible mushrooms - Total <i>Luonnonmarjoja ja sieniiä - Yhteensä</i>	32.0	16.3	58	82	42	18

Compared to other studies concerned specifically with berry picking in certain urban and rural communes, one may find results that show considerably lower amounts (Salo 1984), about the same amounts (Rossi et al. 1984) or locally even greater amounts of berries picked (Raatikainen 1978, Salo 1985). To summarize briefly, without going deeper into comparisons, these studies indicate that there are great differences in picking activities between different parts of the country, between different years and different species. The largest amounts are picked in rural communes of central, eastern and northern parts of the country.

The inhabitants in the Rovaniemi region are most interested in picking cloudberry

in Finnish Lapland. This differs from the habits of collecting berries in central or eastern parts of Finland. Although the cloudberry is the most important and valuable berry, the lingonberry and bilberry are not without significance specially in households' own use in central Lapland.

According to a preliminary estimate (Saastamoinen 1984), only 3 % of the total biological yield of bilberries and 4 % of the total biological yield of lingonberries was utilized in 1983 in the Rovaniemi region of Finnish Lapland. These figures are considerably lower than those estimated for some communes in Central Finland (Rossi et al. 1984).

For cloudberry, the utilization percentage is much higher but the exact amounts

are unknown. Generally speaking there are not a lot of studies about this topic in Finland. In Sweden, Kardell et al. (1982) supposed that about 5-7 % of the total cloudberry yield was picked in 1977. For most of the other species (excluding the rare *Rubus arcticus*) the utilization rates can be estimated to be closer to zero than to one. Although the economically potential yield that can be utilized is much lower than the biological yield - perhaps half of the biological yield (Barinov & Sakovetsh 1980) or even less in areas with low population density - there seem to be many opportunities to increase picking.

To what extent these potentials can be realized in future is a question that remains largely unanswered.

The major part of the annual utilization in the Rovaniemi region was for home use. It can be increased but household use has its natural saturation levels. In principle, commercial picking may have wider potentials for enlargement, but its future depends decisively on how marketing possibilities, development of berrybased products and, most of all, the price level for present and

potential commercial species develop in the future.

The picking for sale, however, gives nowadays extra tax-free income to households. According to these studies the average income from commercial collecting was FIM 480 per every household in the Rovaniemi region in 1983 and respectively FIM 190 in 1985. However, if the income is calculated only for those families which actually picked for sale the respective figures were FIM 1830 in 1983 and FIM 1970 in 1985. This additional income already has some importance for the households concerned.

Interesting points of views are considered by Piirainen (1986) in his interview study of commercial berry pickers in Kuhmo commune in the eastern part of Kainuu province. One factor is that many active berry pickers are elderly people; young people seem not to be interested in commercial picking. Related to that is the fact that there is insufficient training and advice given to pickers of natural products. These, among other things, are topics to which we should pay attention in future.

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ISSN 0037-5330

