

Turkish Orchids and Salep

Türkiye'nin Orkideleri ve Salep

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Abstract

Turkey is a rich country of terrestrial orchids. There are approximately 150 orchid species in Turkey. Most of them (% 85) are tuberous. Tuberous orchids have been used to obtain salep since centuries. Salep powder ,in Turkey , is used to prepare either ice cream or a hot drink prepared with milk. Most of the tuberous orchids (% 90) are used to obtain Salep in Anatolia .Around 120 species belonging the genera *Ophrys* , *Orchis*, *Himantoglossum* , *Serapias*, *Anacamptis*, *Comperia* , *Barlia* , *Dactylorhiza*, *Aceras*, *Neotinea* are used to obtain Salep in different regions of Anatolia. Every year approximately 15-20 tons of Salep obtained and used for domestic purposes and to export. That means around 30-40 million orchids have been destroyed. The richest orchid area is Muğla region. Most of the *Ophrys* , *Orchis* and the endemic species are found in the Region. For this reason, orchids are destroyed in large quantities in this area .

Key words : Orchids, salep , Turkish orchids .

Introduction

In the article, studies on Salep and Turkish orchids is reviewed by citing important references.

Turkish Orchids

Turkey is a rich country of terrestrial orchids .The first list of Turkish orchids was prepared by Sezik in 1967 (Sezik,1967,1969b) after " Flora Orientalis" (Boissier,1884) . Later , different investigations had also been made on the orchids of Turkey (Renz *et al.*,1984;Sezik,1982,;Sunderman,1969;Sunderman *et al.*, 1978, 1981a, 1981b, 1982; Taubenheim, 1977, 1979, 1980) . Orchidaceae part was prepared by Renz and Taubenheim in " Flora of Turkey" (Renz *et al.*, 1984) in 1984. In the same year , the book "Orkidelerimiz -Türkiye'nin Orkideleri (Our Orchids - Orchids of Turkey) " was published (Sezik,1984) . After 1984 , many new orchid species are found in especially South and South-West Anatolia and published (Baumann,1991; Kreutz,1997a,b, Kreutz *et al.*,1998; Robatsch ,1991; Rückbrodt, 1996) .In 1998 , J.Kreutz published the book " Die Orchideen der Türkei " on Turkish orchids (Kreutz,1998) . Volume 11 of "Flora of Turkey " has been published in 2000 and Orchidaceae part of the flora prepared by J.Kreutz (Kreutz,2000) .According to all these papers and books , there are approximately

150 orchid taxa in Turkey . Most of the *Ophrys* , *Orchis* and the endemic species are found in the Muğla region.

Terrestrial orchids have creeping , much reduced ,fibrous or fleshy rhizomes or tuber - like roots .Table 1 shows the orchids growing in Turkey having rhizomes and roots. Most of the orchids in Turkey are tuberous (Table-2) . On the other hand , tuberous orchids have been used to obtain salep since centuries (Table-3) .

genera	taxa
<i>Cephalanthera</i>	6
<i>Corallorhiza</i>	1
<i>Epipactis</i>	9
<i>Epipogium</i>	1
<i>Goodyera</i>	1
<i>Limodorum</i>	1
<i>Listera</i>	2
<i>Neottia</i>	1
TOTAL	23

Table - 1 Turkish orchids having rhizomes and roots

genera	taxa	genera	taxa
<i>Aceras</i>	1	<i>Anacamptis</i>	1
<i>Barlia</i>	1	<i>Coeloglossum</i>	1
<i>Comperia</i>	1	<i>Dactylorhiza</i>	12
<i>Gymnadenia</i>	1	<i>Himantoglossum</i>	3
<i>Neotinea</i>	11	<i>Ophrys</i>	60
<i>Orchis</i>	31	<i>Platanthera</i>	3
<i>Serapias</i>	6	<i>Steveniella</i>	1
<i>Traunsteinera</i>	1	<i>Spiranthes</i>	1
		TOTAL	125

Table -2 Turkish orchids having tubers

genera	taxa
<i>Aceras</i>	1
<i>Anacamptis</i>	1
<i>Barlia</i>	1
<i>Comperia</i>	1
<i>Dactylorhiza</i>	12
<i>Himantoglossum</i>	3
<i>Neotinea</i>	1
<i>Ophrys</i>	60
<i>Orchis</i>	31
<i>Serapias</i>	6
TOTAL	117

Table – 3 Orchids used to obtain salep

Salep

Tuberous orchids have 2 tubers. One is the old tuber and it is wrinkled , shrunken , and brown in colour. The other one has a light colour , spherical to ovoid shape .It is daughter tuber and called " iyisi "in Turkish (means the good one).The first investigation on Turkish salep was prepared by Baytop and Sezik(Sezik,1967, Baytop *et al.*,1968).

Collecting and preparing

During the flowering season, the whole plant is dug out together with its tubers .The wrinkled old tuber is thrown away and the daughter (young) one is collected .Tubers are carefully washed to get rid of the soil on the surface. After washing, they are boiled in water, buttermilk, ayran (diluted yougurt), and on occasion in whole milk. The boiling medium differs according to the salep producing areas. After boiling , tubers are rinsed with cold water and dried in the sun .They are spread on the floor or threaded and the strings are hung in a sunny place. The tuber are very hard when they are dried properly. Salep is collected mostly by women , children and shepherds in poor rural area .

The tubers are sold to the dealers either fresh or dried. The orchids are rarely found in nature and the tubers are small. A peasant can collect only one kg of tubers in 1-2 days . During the drying process fresh orchid tubers lose 70-90 % of their weight. The loss of water depends on the season of collection(Sezik,1967; Baytop *et al.*, 1968; Sezik, 1984).

Salep can be stored in tuber form for years without any decomposition of its content.

Collecting areas

There are 5 major collecting areas in Anatolia (Sezik,1967; Baytop *et al.*, 1968, Sezik, 1984). These are shown below. Turkish names of the commercial saleps are shown in italics and collecting areas are given in the second line.

Salep collecting areas and commercial saleps

North Anatolia

Kastamonu Salebi(*Kastamonu salep*) (Sezik *et al.*1983)

Kastamonu ,Tokat(Maden) Provinces

South -West Anatolia

Muğla salebi(Muğla salep) (Sezik. 1969a,c))

Muğla Province (from Söke to Fethiye)

South Anatolia

Antalya Salebi(Antalya Salep)

Antalya Province (from Elmalı to Gazipaşa)

Silifke Salebi(Silifke Salep)

Mersin Province (Around Silifke)

South-East Anatolia

Maraş Salebi(Maraş Salep) (Sezik et al.1988,1991)

Kahraman Maraş, Adıyaman ,Malatya Provinces

East Anatolia

Van Salebi (Van Salep)

Van,Muş,Bitlis Provinces

Usage of Salep

Salep powder , in Turkey , is used to prepare either ice cream or a hot drink prepared with milk .Salep tubers have polyholosides. The main polyholoside is a glucomannan.Salep is used as a binder in the production of ice cream because of its glucomannan content .Salep also retards melting of ice-cream. The famous ice cream prepared by using salep is named as " Maraş Dondurması" (ice cream from Kahraman Maraş)(Sezik *et al.*, 1988,1991). Maraş ice-cream is very hard . It is not easy to cut in pieces .

Orchids used to obtain Salep

Around 120 taxa belonging the genera *Ophrys* , *Orchis*, *Himantoglossum* ,*Serapias*, *Anacamptis*, *Comperia* ,*Barlia* ,*Dactylorhiza* , *Aceras* ,*Neotinea* are used to obtain salep in Anatolia (Baytop *et al.*,1968;Sezik, 1967,1982,1984).

Substitutes of Salep

There is a low quality salep called " çayır salebi" (meadow salep) in the market. Çayır salebi is obtained from *Dactylorhiza iberica* (Baytop.1968) in Kastamonu region and *Dactylorhiza osmanica*, *Orchis palustris* and *O .coriophora* in Kahraman Maraş region (Sezik, *et al.*,1988,1991)

Two plants have been found which are adulterated in salep in K.Maraş region: *Ranunculus ficaria* ssp. *ficariformis* (Arpa,arpacık salebi-barley salep) and *Colchicum cilicicum*(deli salep-mad salep) (Sezik *et al.*,1988,1991)

On the other hand , the use of artificial salep substitutes has significantly increased in recent years. CMC , soluble starch, guar gum , rice starch .. are the substitutes of salep. The officially recorded Turkish export of salep is 75 tons in 1993 . It is impossible , because it makes approximately 150 million of orchids. That value clearly shows , salep powder is adulterated with CMC , starch etc .

Destroying of orchids

In some years 15 tons of salep may have been exported from Turkey .10 tons of salep is exported yearly in average . Domestic use of salep has been twice the export amount at least .That means , approximately 20 tons salep is obtained in Turkey every year . The mean weight of a salep tuber is 0.5 g (Sezik,1967,1989). That means, approximately 40 million of tuberous orchids are destroyed in order to produce salep . Orchid destruction

has reached unbelievable level (Seziki1989;Ertuğ,2000;Kasperek, *et al.*, 1999). The richest orchid area is Muğla region. Most of the *Ophrys*, *Orchis* and the endemic species are found in the region. For this reason, orchids are destroyed in large quantities in this area. Seminars and meetings were organized to inform government departments, bureaucrats, scientists and public concerning the destroying of orchids. The articles on Turkish orchids and their destroying were published in popular science journals (Sezik,1990,1991). Unfortunately the destroying of Turkish orchids still go on.

Conclusion

The first list of Turkish orchids and pioneer data about Turkish salep was prepared in the PhD thesis of Dr. Sezik supervised by Prof. Dr. Turhan Baytop, and submitted in 1967. Following this PhD thesis many new studies and TUBİTAK projects have been performed on Turkish orchids and saleps. Two books in Turkish and in German have been published on Turkish orchids. There are 3 PhD and one master thesis supervised by Prof. Sezik continuing on Turkish orchids at present. Prof. Dr. T. Baytop has been the first one to think of such important subject which still continues to be an important issue for Turkey in terms of scientific research which has originated by the important observation and philosophy of Prof. Baytop " each scientific study should bring a solution to a problem of Turkey". Orchids and salep is a good example of this idea.

There are 150 orchids mostly tuberous in Turkey. Most of the tuberous orchids are being used for salep production in Anatolia. It has been observed that recently the production of salep has been started in the regions where there was no production before contributing to the raising of destruction rate of orchids.. Turkish orchids are being destroyed all over Anatolia especially Muğla region enormously. Every year, 15-20 tons of salep are being produced so that 30-40 millions of orchids are being destroyed. Necessary required precautions must be taken immediately against the destruction of Turkish orchids.

Özet

Türkiye orta kuşak orkideleri bakımından zengin bir ülkedir ve 150 civarında orkide türü bulunmaktadır.Bu türlerin önemli bir kısmı(%85) yumruludur.Yumrulu orkideler asırlardır salep elde edilmişinde kullanılmaktadır.Salep tozu Türkiye'de dondurma ve sütlü sıcak bir içecek hazırlanmasında kullanılmaktadır.Anadolu'da yumrulu orkidelerin çoğundan(%90) salep elde edilmişinde yararlanılmaktadır. *Orchis*, *Himantoglossum*, *Serapias*, *Anacamptis*, *Comperia*, *Barlia*, *Dactylorhiza*, *Aceras*, *Neotinea* cinslerine ait takriben 120 orkide türü Anadolu'nun değişik bölgelerinde salep elde edilmişinde kullanılmaktadır.Her yıl 15-20 ton civarında salep elde edilmekte ; yurt içinde kullanılmakta ve ihraç edilmektedir.Bu miktar 30-40 milyon orkidenin tahrip edilmesi demektir.Muğla orkideler bakımından en zengin bölgedir. *Ophrys*, *Orchis* ve endemik türlerin çoğu bu bölgede yetişmektedir.

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