Export of Important Medicinal Plants to Local and International Market from District Dir, Khyber Paktunkhaw - Pakistan

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Abstract: The research is based on the sell and export of medicinal plants from district Dir to local (National) and international markets of different countries i.e. India, Europe, Afghanistan, Iran and Germany etc. Total 29 plants species were collected in month of February, March, April, August, September and November in 2013 from the Local Peoples, Local Dealers and Markets of district Dir. Fourteen (14) species from local dealers, 9 species from market and 7 species from local peoples. Many plant species were cleaned, dried and stored in bags and then transport to different market. These plants are use for various medicinal purposes and extract chemicals from these plants, which are uses in various medicinal companies. The most abundant collection of medicinal plants is from Dir Kohistan, Swat Kohistan, Tehsil Barawal Bandi, Rabat banda, Toormong Dara, Seyaar Dara, Malakand Banda, Ushaire and Maidan etc.

Key words: Medicinal plants • Collection method • Export • Marketing status • Conservation of medicinal plants

INTRODUCTION

District Dir is located in KPK, Pakistan, sited between 35° 50' and 34° 22'N and 71° 2' and 72° 3'E. In East side is district Swat and the North side is district Chitral, South side is district Malakand and West side is Afghanistan. The total area of this district is 5284 Km² and population of this district according to 1998 is 1,293,507 most of them are Yusafzai. From the name it shows that the area is the headquarters former of rulers. In 1996 it is divided into two districts further i.e. Dir Upper and Dir Lower. District Dir is basically mountainous surrounded by high mountains in all sides. Shuaib et al. [1] reported that the District Dir is rich of medicinal plants and the plants resources were gifted with tremendous chemicals uses by the humans beings for various purposes only uses these plants which is practices for pharmaceutical purposes not uses all the plants Hazrat et al. [2] stated that the District Dir has diverse and rich of medicinal plant about 190 medicinal plants were reported 40% of these medicinal plant were sold in the international markets and 60% in national markets. And the local peoples earn money from these plants. The main Aims of this research to evaluate the medicinal plant, their value proper collection and conservation of the medicinal plants. In Pakistan about 45,000 register herbalists (Tibb Doctor) work in their shops and clinics and prepared various medicines as reported by Shuaib et al. [3] and William and Zahoore [4]. Majority of the populations getting health care’s from these Tibb doctors. The black circles in the map show those areas from there these plants are collected and sell to the local markets as indicated by Shinwari [5] and Arshad [6].

MATERIALS AND METHODS

The plants specimens were collected from the local peoples, dealers and markets that transport these plants species to different countries i.e. India, Europe, UA, Afghanistan, Iran and Germany etc. The plants were collected, identified in fresh form and put in dried form in the herbarium of the University of Agriculture Peshawar as stated by Stewart [7], Nasir and Ali [8], Ali and Fefevre [9] and Khalid [10]. During the research questionnaire were asked from men, women, local dealers and markets about the collection, drying, storing and selling of medicinal species in district Dir.
RESULTS AND DISCUSSION

The medicinal plants collectors were poor peoples of local villages. These peoples depend on forming and collect these plants to earn money. Forty percent men, 30% women and 30% children were involved in the collection of these medicinal plants. These plants collect in start of spring season from February to April and then start from the end of summer to autumn from September to December. Many people stores these plants after collection and preservation, some of the people sold it directly in the local market. About 350 tons plants were transported annually from Dir Lower. In the present study, total 29 medicinal plants were studied, which belong to 23 families, were collected from the locals dealers and markets. The local inhabitants in the market sold these vital plants. From the local market then these medicinal plants traded in the national markets i.e. Peshawar, Karachi and Lahore and then from the national markets transported to different countries of the world i.e. India, Germany, Afghanistan and Iran etc. a brief discussion were given below from District Dir Pakistan.

1) Botanical name: *Pistacia integrrima* J. L Stewart ex Brand.
Local name: Shanai
Family: Anacardiaceae
Area of collection: Malakand, Tangi Timergara, Lajbok, Upper Dir, Ushairai, Chitral, Kohistan, Swat Kohistan and Tota Kan Batkhela.
Rs. in local market: 1000-1500/kg
Rs. in international market: 3000-3800/kg
Total amount transport in a season: 20,000kg/per season
Export country: The plant is transported to India.

2) Botanical name: *Buxus sempervirens* Hk. F
Local name: Shamshad
Family: Buxaceae
Area of collection: Dir Kohistan, Barawal, Sheringal, Kumrat, Swat Kohistan.
Rs. kg in local market: 50/kg
Rs. in international market: 300-350/kg
Total amount in season transport: 5000kg leaves and wood
Export countries: India

3). Botanical name: *Zanthoxylum armatam* DC.
Local name: Dambara
Family: Rutaceae
Area of collection: Malakand, Dir, Samar Bagh, Rabat, Talash, Wari, Nahag Dara and Kohistan
Rs. in local market: 160/kg.
Rs. in international market: 500-600/kg
Total amount in season transport: 8000 mans/ 10000 to 15000 kg from Dir
Export countries: India

4) Botanical name: *Mentha spicata* L.
Local name: Podina
Family: Lamiaceae
Area of collection: Rabat, Malakand, Wari, Dir, Kohistan,Sayar Dara and Ushairai.
Rs. In local market: 60/kg
Rs. In international market: 150-180/Kg
Total amount in season transport: 10,000 to 12,000 mans were transported
Export countries: India

5) Botanical name: *Mentha longifolia* (L.) Huds.
Local name: Venalay/Elanay
Family: Lamiaceae
Rs. in local market: 60/ kg. 3,000/per mans
Rs. in international market: 150-300/kg
Total amount in season transport: 10,000-12,000 mans per season transport
Export countries: India, Srilanka, Australia and Japan.

6) Botanical name: *Podophyllum hexandrum* Royle
Local name: Kakorra
Family: Podophyllaceae
Area of collection: Dir Kohistan, Swat Kohistan, Nahag Dara and Warai.
Rs. in local market: 300/kg
Rs. in international market: 800-1000/kg
Amount per season transport: 10,000-12,000kg per season transport
Export countries: India and Europe

7). Botanical name: *Valeriana jatamansi* Jones
Local name: Mushk-e-bala
Family: valerianaceae
Area of collection: Dir Kohistan, Swat Kohistan, Nahag dara and Barawal
Rs. in local market: 400/kg
Rs. in international market: 1500-2000/kg
Amount per season transport: 20,000kg per season transport
Export countries: India, Europe and Iran.
8). Botanical name: *Viola canscens* Wall. ex Roxb.
Local Name: Benafsha
Family: violaceae
Area of collection: Barawal, Malakand, Nahag Dara, Usharai, Kohistan and Swat Kohistan
Rs. in local market: 300-1500/kg
Rs. in international market: 3700/kg
Amount per season transport: 15,000-20,000kg
Export countries: India, Germany and Scotland.

9). Botanical name: *Morchella esculenta* Fr.
Local Name: Khosy/ Gochee
Family: Morchellaceae
Area of collection: Malakand, Lajbok, Saiyar Dara, Talash, Dir Kohistan, Swat Kohistan, Barawal, Maidan, Rabat Dara, Wari and Nahag Dara.
Rs. in local market: 15,000-20,000/kg
Rs. in international market: 3400/kg
Amount per season transport: 200kg/ per season transport from Dir.
Export countries: India

10) Botanical name: *Bergenia ciliata* (Haw.) Sternb.
Local Name: Kamar panra
Family: Saxifragaceae
Area of collection: Malakand Banda Bala, Munda, Dir, Kohistan, Swat Kohistan and Barawal Banda.
Rs. in local market: 400-1000/kg
Rs. in international market: 2200-2500/kg
Amount per season transport: 5,000kg
Export countries: China and India

11) Botanical name: *Rheum australe*
Local name: Choottyal
Family: Polygonaceae
Area of collection: Malakand Banda Bala, Munda, Barawal, Kumrat, Dir kohistan and Ushaire
Rs. in local market: 320/kg
Rs. in international market: 1000-1200/kg
Export countries: India, Iran and Germany

12) Botanical name: *Atropa balladona*
Local name: Toor largay
Family: Solanaceae
Area of collection: Kumrat, Sheringal, Maidan and Kohistan
Rs. in local market: 1000-1500/Kg
Rs. in international market: 2,860/kg
Export countries: Europe

13) Botanical name: *Allium cepa* L.
Local name: Payaaz
Family: Alliaceae
Area of collection: Timergara, Malakand Banda Bala, Munda, Dir, Kohistan, Ushaire, Dir Kohistan, Swat Kohistan and Barawal Bandi.
Rs. in local market: 40/Kg
Rs. in international market: 100-200/kg
Amount transport per season: 50 tons
Export countries: India, Saudi Arabia and Afghanistan.

14). Botanical name: *Allium sativam* L.
Local name: Ogaa
Family: Alliaceae
Area of collection: Talash, Timergara, Odeogram, Maidan, Dir Kohistan, Swat Kohistan and Barawal Bandi.
Rs. in local market: 70/Kg
Rs. international market: 120-150/kg
Export countries: Afghanistan, India, Korea, Srilanka, USA, Italy, Bangladesh and Dubai.

15) Botanical name: *Citrus sinesis* (L.) Osbeck
Local name: Malta
Family: Rutaceae
Area of collection: Rabat, Khall, Dir Uppor, Maidan and Talash.
Rs. in local market: 120 per dozan
Rs. in international market: 200-300
Export countries: Dubai, China, Saudi Arabia, Afghanistan and Iran.

16) Botanical name: *Pinus gerardiana* Wall. ex Lamb.
Local name: Chilgoza
Family: Pinaceae
Area of collection: Malakand banda, Maidan, Khall, Rabat, Dir Kohistan, Swat Kohistan, Kumrat, Ushaire, Zakhana, Dobando, Hatan dara, Qulandai, Doog dara, Nehag Dara and Maskina Dara
Rs. in local market: 2000 per kg
Rs. in international market: 3500-5000/kg
Amount transport per season: 350-400kg
Export countries: Dubai, Saudi Arabia, Iran and Germany

17) Botanical name: *Cannabis sativa* L.
Local name: Bang
Family: Cannabeaceae
Area of collection: Dir Upper, Dir lower
Rs. in local market: 2000kg
Export: It exports locally in the Pakistan.
18) Botanical name: *Myrtus communis* L.
Local name: Maanan/Maroon
Family: Myrtaceae
Area of collection: Dir Lower and Upper Dir
Rs. in local market: 130/kg
Rs. in international market: 450-500/kg
Total amount transport in season: 1000kg fruits/ 1500kg leaves
Export countries: India and Iran

19) Botanical name: *Paeonia emodi* Wall. ex Royle
Local name: Mamekh
Family: Paeoniaceae
Area of collection: Upper Dir near Chitral, Kumrat, Dir Kohistan, Swat Kohistan and Barawal.
Rs. in local market: 800/kg
Rs. in international market: 1800/kg
Amount transport per season: 2000kg
Export countries: Germany, India and Europe

20) Botanical name: *Plantago lanceolata* L.
Local name: Spighol
Family: Plantaginaceae
Area of collection: Maidan, Talash, Munda, dir kohistan and swat kohistan.
Rs. in local market: 600/kg
Rs. in international market: 1400/kg
Export countries: Iran, Saudi Arabia, UAE, India and Afghanistan.

21) Botanical name: *Thymus linearis* Benth. in Wall.
Local name: Sparkai
Family: Lamiaceae
Area of collection: Maskenai banda, Dir Kohistan, Barawal bandi and Toormang dara,
Rs, per kg in local market: 240/ kg.
Rs. Per kg in international market: 2000kg
Export countries: Saudi Arabia, Dubai, Iran and India

22) Botanical name: *Feoniculum vulgare* Mill.
Local name: Kagai
Family: Apiaceae
Area of collection: Dir Kohistan, Swat Kohistan, Barawal Bandi, Maidan and Rabat Banda.
Rs. in local market: 600/kg
Rs. in international market: 1850/kg
Export countries: Saudi Arabia, Dubai, Iran, Afghanistan and Srilanka

23) Botanical name: *Carum carvi* Linn.
Local name: Zankai
Family: Apiaceae
Area of collection: Dir Kohistan and Swat Kohistan
Rs. in local market: 250/kg
Rs. international market: 300/kg
Amount transport per season: 2000-3000kg
Export countries: Afghanistan

24) Botanical name: *Helianthus annuus* L.
Local name: Nawar paras
Family: Asteraceae
Area of collection: Maskanai, Khazana, Banada, Haji abad, Khall and Rabat.
Rs. in local market: 180/kg
Rs. in international market: 400/kg
Amount transport per season: 1000kg
Export Countries: Srilanka and Iran

25) Botanical name: *Justicia adhatoda* Linn.
Local name: Baiknd
Family: Acanthaceae
Area of collection: Khall, Rabat, Balamabat, Maidan, Oshaire, Kohistan, Sherengal and Malakand Banda.
Rs. in local market: 300/kg
Rs. in international market: 860-1000/kg
Amount transport per season: 1000tons
Export Countries: India and Iran

26) Botanical Name: *Diospyros lotus* Linn.
Local name: Parseeman
Family: Ebenaceae
Area of collection: Rabat, Khall, Munjai, Talash, Barawal and Dir upper
Rs. in local market: 40/Kg
Rs. in international market: 100-120/kg
Amount per season transport: 10,000tons
Exported countries: Afghanistan and Saudi Arabia

27) Botanical Name: *Juglans regia* L.
Local name: Mattak/Guzz
Family: Juglandaceae
Rs. in local market: 450/kg
Rs.in international market: 1000-1300/kg
Area of collection: Kumrat, Dir kohistan, Swat kohistan, Ushaire, Barawal, Babyawar,Khall, Munda, Maskanai and Maidan.
Amount per seasons transport: 10,000-12,000tons
Export countries: India, Saudi Arabia, Iran, Afghanistan and Bangladesh.
28) Botanical name: *Solanum tuberosum* L.
Local name: Aaloo
Family: Solanaceae
Rs. in local market: 40/kg
Rs. in international market: 60/kg
Area of collection: Ushaire, Dir Kohistan, Swat Kohistan and Barawal.
Amount per season Transport: 80000-90000kg
Exported countries: Afghanistan and Saudi Arabia

29) Botanical name: *Oryza sativa*
Local name: Chawal
Family: Poaceae
Rs. In local market: 100kg
Rs. In international market: 150-200Kg
Amount per season transport: 2000-3000tons
Export countries: UK, Dubai, Malaysia, China, Saudi Arabia, Afghanistan and Iran.

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REFERENCES


CONCLUSION AND RECOMMENDATION

District Dir is rich of medicinal plants and most of unique plants were transported to different countries i.e. India, Germany, Iran and Afghanistan etc. These medicinal plants play an important role in wealth and health economy of Pakistan. These medicinal plants are uses in various pharmaceutical companies. Proper conservation techniques were needed to collect theses medicinal plants in the local communities. Arrangement of special programmed in the local communities in the backwards area to know the peoples markets and their economic importance. Government should form community-based organization to form nurseries and encourage the local peoples. Community awareness project should be initiated to educate the local peoples about the utilization of natural resources (medicinal plants) on sustainable basis.

From last 10 years amount of medicinal plants decreased in the local area. The local people preserved many plant species with unscientific way and mostly of them were destroyed due to humidity, insects etc.