

Majors Fruits Used By the People Of Vicinity Kathmandu, Bhaktapur, Lalitpur, And Kavre District Of Nepal For The Fulfillment Of Basic Nutritional Requirements

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Abstract

An aggregate of 116 species of plants belonging to 45 different families have been recorded so far that are used as source of food and directly used by the people. These fruits are used as a flesh, raw, riped, cooked, sometimes fodder for cattle's as well by the people living in the locality of Kathmandu, Lalitpur, Bhaktapur and Kavre district of Nepal. Most of the fruits supply nutrition like protein, carbohydrates, minerals and carbs. Most of the times these fruits work as basic hunger fulfillment food for people living below the poverty line. Even though numbers of research has been carried out for its nutritional content, further research and awareness program is required to broaden the knowledge of these fruits uses in day to day life.

Key words: Fruit plants, Nutrition content, Indigenous fruits, Underexploited fruits, Nepal

INTRODUCTION

Fruits are the seed bearing flowering plants with fleshy structure typically with sweet or sour in taste. Basically fruits provides balanced nutrients that might be helpful to alleviate the malnutrition problem from most of the parts of the world. Nepal is considered as bequeathed nation as it consists of diversified edaphic and climatic condition along with millions of micro-climatic niches and small pocket areas for its production of diverse biotypes. The plain, flat low lands, deep valleys, mountains and ridges consist of amusing genetic resources of fruits. (12, 11). Amongst 6,500 species of flowering plants stated by Chalise et al (7) Nepal is amusing in wild comestible, bizarre, underexploited and cultivated fruit genetic resources (9,14). The total of 400 species and subspecies agro-horticultural crops found in Nepal as per Regmi (15). It is alleged that Nepal is native home of many fruit species. Indigenous fruit species of about 107 numbers have been identified in Nepal (10). There are 45 species belonging to 37 genera and are reported as wild edible fruits (12). Southern parts of Terai region is appropriate for cultivation of factual tropical fruits while Northern parts of mid-hills and high-hills are appropriate for the production of sub-tropical to warm and cold temperate fruit and nut species. Tropical fruits includes fruits like banana, Dragon fruit, Passion fruit, Rambutan, Acai, Jackfruit, Mangosteen, Lychee, mango, Pineapple and Papaya while Avocados, litchi, kiwi fruit guavas and granadillas falls under sub-tropical fruits. Recently, many exotic germplasm of fruits has been introduced successfully in most of the farms of Nepal. (13,17) Even though there is successful establishment of new fruits on these farms it lacks comprehensive documentation of these plants and species so explicit data are essential for further research activities. These research activities might be helpful for the initiation of the selection process so that promising varieties can be released.

Most of the fruits are good source of Vitamins minerals, carbohydrate, carbs, fibers, Potassium, folate, antioxidants as polyphenols which meets the nutritional requirements of the individual. People living in rural areas used these fruits as a source of supplementary foods during the hunger time and fulfill their basic needs. In the recent days uses of fruits is being increased as people are being more health conscious and follow dietician schedule to remain healthy. But people do not consider the fruits and their plants as important as cereals crops so they disagree to plant the fruit trees in the main land. They believe that planting fruit trees in the main field lower their cereal crop production ratio and hunger might strike their home. It is essential to spread the awareness among the people about the fruits and uses so that planting those plants on main field increases and it will enhance our economic condition.

METHODOLOGY

The study was predominantly conducted on field visit, questionnaire and personal interview with local villagers with the chief objective of understanding, ascertaining and analyzing the plants along with its local names and uses.

Study area

The study was conducted from February to August, 2021 in Bhaktapur, Lalitpur, Kathmandu and Kavre. Among the collected data, personal interview with villagers are taken from Bhaktapur, Lalitpur and Kathmandu while online survey was conducted from other parts of central developmental regions where personal interview is not feasible. The geographical region for the sample collection was ranged from Churiya range to Mahabharata range of Tropical zone.

Data collection

Our entire study was based on the questionnaire and field visit. During the visit individual of all gender, caste, age groups are taken into consideration so that data collected and information gathered will be ethical. The major aim of collecting the data is to identify the nutritional value and traditional uses of those fruits plants. Numbers of sample was also collected during the period and those collected data and specimen were identified using the relevant sites like Thapa et al (13), Shrestha et al (17) and Karki et al (17) and these sites are also used to identify and standardization of their globally identifying name. HRD (6,3) and NCRP (2,4,5)

RESULTS AND DISCUSSION

During the field survey, some 116 species of fruits plants was collected. These plants belongs to 45 different families. Most of the plants recorded in this study were tree with fruits falling on primarily on berry followed by pome and so on. Among the reported species, the family Rosaceae consist of large number of species and it is followed by Rutaceae, Moraceae, Anacardiaceae and so on.

Table.1 Major Fruits found in different parts of Nepal.

S.N.	English name	Scientific name	Nepali name	Family	Types of fruits	Nutritional content
1.	Feijoa	<i>Feijoa sellowiana</i>	Lamcho amba	Myrtaceae	Berry	Vitamin-C, fiber
2.	Box myrtle	<i>Myrica esculenta</i>	Rukh kafaal	Myricaceae	Berry	Lipids and fatty acids
3.	Brazilnut	<i>Bertholletea excelsa</i>	Tin mukhe okhar	Lecythidaceae	Nut	Protein, carbohydrate
4.	Mango	<i>Magnifera indica</i>	Aanp	Anacardiaceae	Edible stone, drupes	Vitamin A and C
5.	Peach	<i>Prunus persica</i>	Aaru	Rosaceae	Drupe	Vitamin A and C, Carbohydrate, protein
6.	Bengal quince	<i>Aegle marmelos</i>	Bel	Rutaceae	Pome	Carotone, vitamin C, Protein
7.	Plum	<i>Prunus domestica</i>	Aaru bakhada	Rosaceae	Drupe	Vitamin A and C
8.	Durian	<i>Durio zibethinus</i>	Kathe kathar	Bombaceae	Multiple fruits	Carbs, Fiber, Protein, Vitamin C
9.	Yellow Raspberry	<i>Rubus ellipticus</i>	Aineselu	Rosaceae	Aggregate fruits	Fiber and Vitamin C

10.	Gooseberry	<i>Phyllanthus emblica</i>	Amala	Euphorbiaceae	Berry	Vitamin C
11.	Indian Hog plum	<i>Spondias pinnata</i>	Amaro	Anacardiaceae	Edible stone, drupes	Vitamin C, protein and carbohydrate
12.	Guava	<i>Psidium guajava</i>	Amba	Myrtaceae	Berries	Water, Vitamin, Fiber,
13.	Mock Strawberry	<i>Duchesnea indica</i>	Bhuikaphal	Rosaceae	Aggregate fruits	Vitamin C and Minerals
14.	Sour cherry	<i>Prunus cerasus</i>	Amilo paiyun	Rosaceae	Fleshy drupe	Vitamin C and Minerals
15.	Pomegranate	<i>Punica granatum</i>	Anar	Punicaceae	Berry	Vitamin C
16.	Osbeckia	<i>Osbeckia nepalensis</i>	Angeri/ seto chulsi	Melastomataceae	Berry	Anthocyanin
17.	Grapes	<i>Vitis venifera</i>	Anggor	Vitaceae	Berry	Resveratrol, minerals and vitamin
18.	Wild Cherry	<i>Prunus avium</i>	Angur	Rosaceae	Fleshy drupe	Vitamin C
19.	Fig	<i>Ficus carica</i>	Anjir	Moraceae	Multiple fruits	Fiber and minerals
20.	Aporosa	<i>Aporosa octandra</i>	Archal	Phyllanthaceae	Drupe	Minerals
21.	Monkey Jack	<i>Atrocarpus lakoocha</i>	Badahar	Moraceae	Multiple fruits	Minerals, vitamin, protein
22.	Wood apple	<i>Aegle marmelos</i>	Bael	Rutaceae	Pome	Minerals, fibers
23.	Buckthorns	<i>Ziziphus mauritiana</i>	Baer	<u>Rhamnaceae</u>	Drupe	Minerals, vitamins
24.	Barbados cherry	<i>Malpighia glabra</i>	Aserola	Malpighiaceae	Cherry	Vitamin C
25.	Fig tree	<i>Ficus faveolate</i>	Ban timilo	Moraceae	Multiple fruits	Minerals
26.	Belliric myrobalan	<i>Terminalia chebula</i>	Barro	Combretaceae	Drupe	Lysine,protein
27.	Jujube	<i>Ziziphus jujube</i>	Bayar	Rhamnaceae	Drupe	Minerals
28.	Chinese sumac	<i>Rhus javanica</i>	Bhakiamilo	Anacardiaceae	Aggregate fruit	Vitamin C
29.	Pummelo	<i>Citrus maxima</i>	Bhogate	Rutaceae	Berry, Hesperidium	Vitamin
30.	Strawberry	<i>Fragaria x ananassa</i>	Bhui aiselu	Rosaceae	Aggregate fruit	Minerals and vitamin
31.	Quince	<i>Cydonia oblonga</i>	Bihi/ Nepali syau	Rosaceae	Pome	Vitamin and minerals
32.	Pineapple	<i>Ananas comosus</i>	Bhuinkatahar	Bromeliaceae	Multiple fruits	Vitamin C
33.	Citron	<i>Citrus medica</i>	Bimiro	Rutaceae	Berry	Vitamin C
34.	Sweet lime	<i>Citrus limetoides</i>	Chaaksi	Rutaceae	Berry	Vitamin
35.	Butter tree	<i>Diploknema butyracea</i>	Chiuri	Sapotaceae	Drupe	Calories and fat
36.	Pecan Nut	<i>Carya illinoensis</i>	Chuche okhar	Juglandaceae	Nut	Minerals and fiber
37.	Berberberry	<i>Berberis asiatica</i>	Chutro	Berberidaceae	Berry	Minerals

38.	Buckthorn	<i>Rhamnus persicus</i>	Kade payeu	<u>Rhamnaceae</u>	Drupe	Carbohydrate and protein
39.	Pomegratante	<i>Punica granatum</i>	Daarim	Punicaceae	Berry	Vitamin C
40.	Seabuckthorn	<i>Hippophae tibetana</i>	Dale chuk	Rhamnaceae	Drupe	Carbohydrate and protein
41.	Thin shelled walnut	<i>Juglans regia</i>	Dante okhar	Juglandaceae	Nut	Vitamin c and minerals
42.	Tamarind	<i>Tamarindus indica</i>	Emli	Fabaceae	Legumes	Minerals
43.	Nepalese fire thorn	<i>Pyracantha crenulata</i>	Ghangaroo	Rosaceae	Pome	All
44.	Avocado	<i>Persea Americana</i>	Ghewphal	Lauraceae	Berry	Minerals and vitamin
45.	Asiatic tearthumb	<i>Polygonum perfoliatum</i>	Ghumaurokanda	<u>Polygonaceae</u>	Berry	Vitamin and protein
46.	Wild cucumber	<i>Solena heterophylla</i>	Golkankri	Cucurbitaceae	Berry	Water, vitamins
47.	Rose apple	<i>Syzygium jambos</i>	Gulab jamun	Myrtaceae	Drupes	Minerals and vitamins
48.	Sweet cherry	<i>Prunus avium</i>	Guliyo paiyun	Rosaceae	Drupes	Vitamins
49.	Tree tomato	<i>Cyphomandra betacea</i>	Tyangmatar	Solanaceae	Berry	Vitamins
50.	Ziziphus	<i>Ziziphus incurve</i>	Hade Bayar	Rhamnaceae	Drupe	Vitamins and fatty acids
51.	Persimmon	<i>Diospyros kaki</i>	Haluwabed	Ebenaceae	Berry	Vitamin and minerals
52.	Rose apple	<i>Eugenia jambos</i>	Gulaf jamuno	Myrtaceae	Drupes	Vitamin B
53.	Chebulic myrobalan	<i>Terminalia chebula</i>	Harro	Combretaceae	Drupe	Lysine
54.	Acid lime	<i>Citrus aurantifolia</i>	Kaagati	Rutaceae	Berry	Vitamin C
55.	Sour orange	<i>Citrus aurantium</i>	Kaalo jyamir	Rosaceae	Berry	Vitamin C
56.	Bay berry	<i>Myrica esculenta</i>	Kafal	Rosaceae	Berry	Carbs
57.	Hazelnut	<i>Corylus avellana</i>	Khathe badam	Betulaceae	Nut	Protein, fat and mineral
58.	Almond	<i>Prunus amygdalus</i>	Kagazi badam	Rosaceae	Drupe	Vitamin, mineral and fiber
59.	Black berry	<i>Rubes spp</i>	Kalo ainselu	Rosaceae	Berry	Vitamin C
60.	Chestnut	<i>Castanopsis hystrix</i>	Katus	Fagaceae	Nut	Amino acid and vitamin c
61.	Indian chestnut	<i>Castanopsis indica</i>	Dhale katus	Fagaceae	Nut	Fiber, mineral and vitamins
62.	Banana	<i>Musa paradisiaca</i>	Kera	Musaceae	Berry	Fiber and mineral
63.	Cape Goose berry	<i>Physalis peruviana</i>	Rashberry	Solanaceae	Berry	Vitamins
64.	Carambola	<i>Averrhoa carambola</i>	Kambhrak	Oxalidaceae	Berry	Vitamin C
65.	Tree fig	<i>Ficus semicordata</i>	Khanayo	Moraceae	Multiple fruits	Lipids and protein

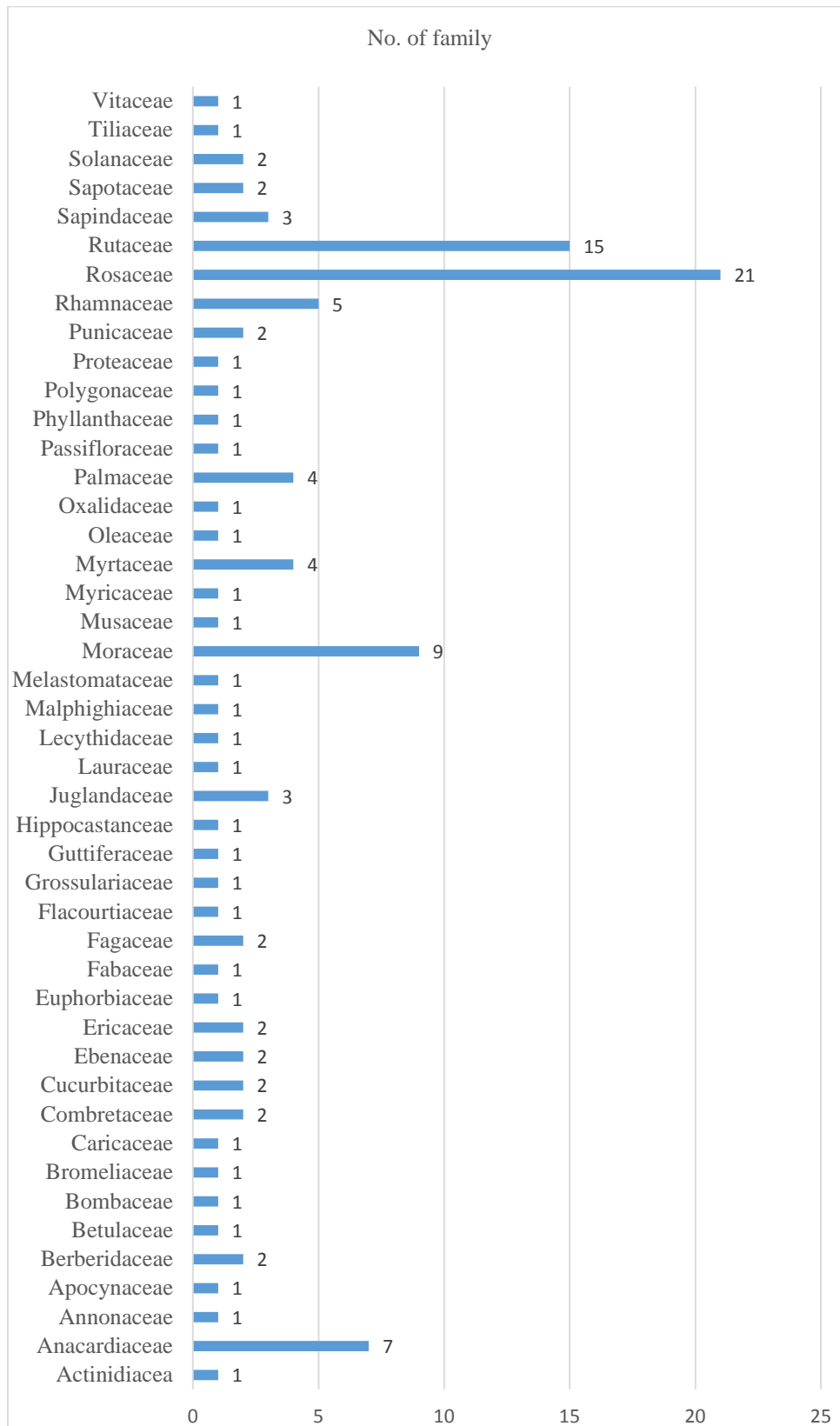
66.	Pistachio nut	<i>Pistacia vera</i>	Pesta	Anacardiaceae	Nut	Proteins and carbs
67.	Apricot	<i>Prunus armeniaca</i>	Khurpani	Rosaceae	Pome	Carotene and vitamin
68.	Black current	<i>Ribes nigrum</i>	Black current	Grossulariaceae	Berries	Water and carbohydrate
69.	White Mulberry	<i>Morus alba</i>	Seto Kimbu	Moraceae	Multiple fruits	Carbs and fiber
70.	Black Mulberry	<i>Morus nigra</i>	Kalo kimbu	Moraceae	Multiple fruits	Carbs and fiber
71.	Schleichera	<i>Schleichera oleosa</i>	Kusum	Sapindaceae	Drupe	Fatty acids
72.	Nepalese hog plum	<i>Choerospondias axillaris</i>	Lapsi	Anacardiaceae	Drupe	Vitamin C
73.	Loquat	<i>Eriobotrya japonica</i>	Laukaat	Rosaceae	Pome	Vitamin and mineral
74.	Litchi	<i>Litchi chinensis</i>	Litchi	Sapindaceae	Drupe	Water and carbs
75.	Phalsa	<i>Grewia asiatica</i>	Falsa	Tiliaceae	Drupe	Carbohydrate and mineral
76.	Rambutan	<i>Nephelium lappaceum</i>	Bhuse litchi	Sapindaceae	Drupe	Water and carbs
77.	Macadamia nut	<i>Mecademia integrifolia</i>	Falame badam	Proteaceae	Nut	Protein and fat
78.	Mangosteen	<i>Garcinia Mangosteen</i>	Sano aanp	Guttiferaceae	Berry	Carbohydrate and fiber
79.	Sweet orange	<i>Citrus sinensis</i>	Maushambi	Rutaceae	Berry	Vitamins
80.	Wild pear	<i>Pyrus pashia</i>	Mayal	Rosaceae	Pome	Vitamin and minerals
81.	Cashewnut	<i>Anacardium occidentale</i>	Kaju	Anacardiaceae	Nut	Minerals
82.	Papaya	<i>Carica papaya</i>	Mewa	Caricaceae	Berry	Vitamin C
83.	Passion fruit	<i>Passiflora edulis</i>	Lahare aanp	Passifloraceae	Berry, pepo	Vitamins
84.	Kumquat	<i>Fortunella japonica</i>	Muntala	Rutaceae	Berry	Vitamin C
85.	Coconut	<i>Cocos nucifera</i>	Nariwal	Palmaceae	Drupe	Carbs and fiber
86.	Horse Chestnut	<i>Aesculus indica</i>	Pangar	Hippocastaneae	Nut	Protein and fat
87.	Rough Lemon	<i>Citrus jambhiri</i>	Naite jyamir	Rutaceae	Berry	Water and carbs
88.	Pear	<i>Pyrus pyrifolia</i>	Naspati	Rosaceae	Pome	Fat and carbohydrate
89.	Hill lemon	<i>Citrus limon</i>	Nibuwa	Rutaceae	Berry	Vitamin C
90.	Unshu mandarin	<i>Citrus unshui</i>	Unshu Mandarin	Rutaceae	Berry	Vitamin C
91.	Blueberry	<i>Vaccinium sp.</i>	Nilo aineselu	Ericaceae	Berry	Vitamins
92.	Fig	<i>Ficus carica</i>	Angir	Moraceae	Multiple fruits	Sugar and fiber
93.	Walnut	<i>Juglan regia</i>	Okhar	Juglandaceae	Nut	Fat and protein
94.	Coffee plum	<i>Flacoutia jangomas</i>	Padel	Flacourtiaceae	Berries	Mineral and vitamin

95.	Himalayan wild cherry	<i>Prunus cerasoides</i>	Painyu	Rosaceae	Drupes	Vitamins
96.	Olive	<i>Olea europaea</i>	Jaitun	Oleaceae	Drupes	Fat and minerals
97.	Breadfruit	<i>Artocarpus altilis</i>	Ram phal	Moraceae	Multiple fruits	Fiber and mineral
98.	Jack fruit	<i>Artocarpus heterophyllus</i>	Rukh katahar	Moraceae	Multiple fruits	Vitamin and Mineral
99.	Grapefruit	<i>Citrus paradise</i>	Sankhatro/ Jhupaute	Rutaceae	Berry	Protein and carbohydrate
100.	Sapota	<i>Achras sapato</i>	Sapatu	Sapotaceae	Drupe	Fiber and vitamin
101.	Custard apple	<i>Annona squamosal</i>	Sarifaa	Annonaceae	Multiple fruits	Mineral fiber
102.	Rhus	<i>Rhus parviflora</i>	Satibayar	Anacardiaceae	Aggeegate fruits	Protein and fat
103.	Apple	<i>Malus pumila</i>	Shyau	Rosaceae	Pome	Sugar and carbohydrate
104.	Mandarin orange	<i>Citrus reticulata</i>	Suntala	Rutaceae	hesperidium, berry	Vitamin and fiber
105.	Arecanut	<i>Areca catechu</i>	Supari	Palmaceae	Drupe	Minerals
106.	Watermelon	<i>Citrullus lanatus</i>	Tarbooz	Cucurbitaceae	Berry	Vitamins, Cholesterol, Ca, Mg, fatty acids
107.	Kiwifruit, Chinese gooseberry	<i>Actinidia deliciosa</i>	Thekiphal/ bhuse phal	Actinidiaceae	Berry	Vitamin
108.	Tangerine	<i>Citrus tangerine</i>	Kamala	Rutaceae	Berry	Vitamins
109.	Wild persimmon	<i>Diospyros malabarica</i>	Tindu	Ebenaceae	Berry	Protein, Vitamin
110.	Trifoliage orange	<i>Poncirus trifoliata</i>	Tinpate suntala	Rutaceae	Berry	Crude protein, Crude fat
111.	Date palm	<i>Phoenix humulis</i>	Fakal	Palmaceae	Drupe	Phenols, amino acids, flavonoids
112.	Mahonia	<i>Mahonia nepaulensis</i>	Jamandre mandro	Berberidaceae	Berry	Isoquinoline alkaloids
113.	Karonda	<i>Carissa carandas</i>	Karonda	Apocynaceae	Berry	Water, Iron
114.	Date palm	<i>Phoenix dactylifera</i>	chohora	Palmaceae	Stone, drupe	Calcium, Phosphorus
115.	Cranberry	<i>Vaccinium macrocarpon</i>	Jhilke aiseuli	Ericaceae	Berry	Ascorbic acids
116.	Crab apple	<i>Malus baccata</i>	Jangali syau	Rosaceae	Pome	Dietary fibers

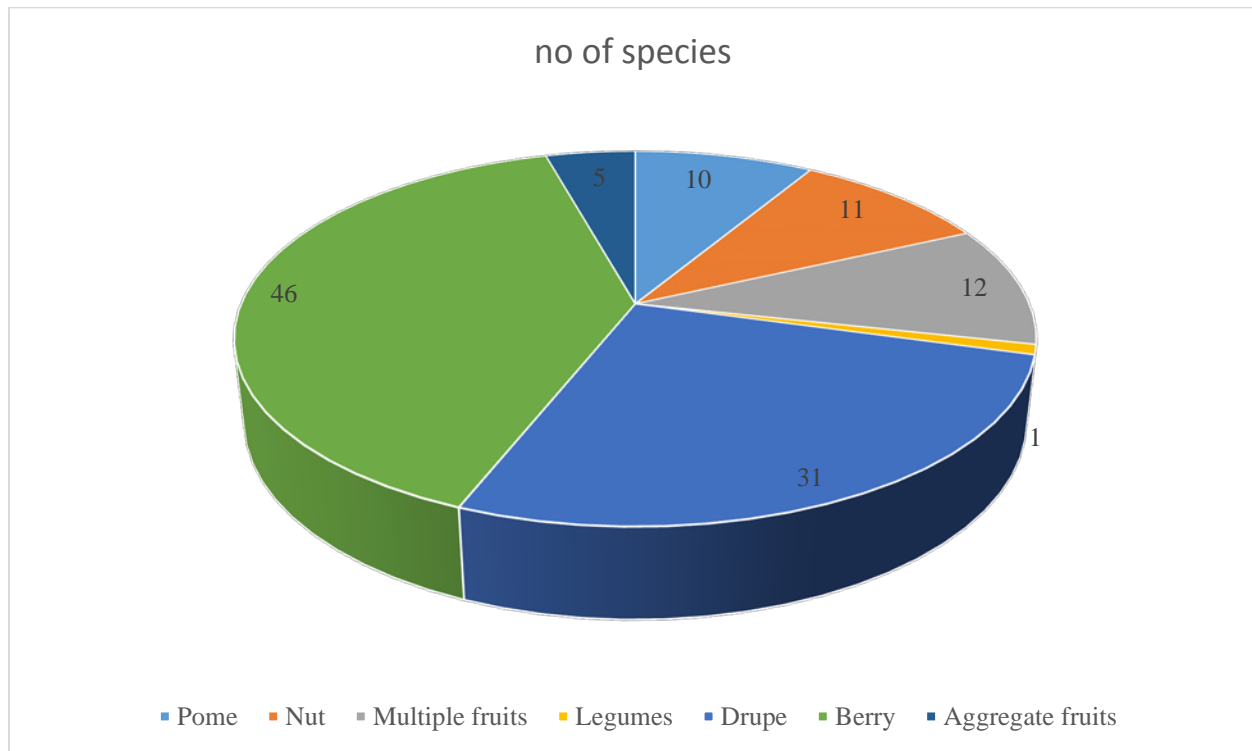
Nutritional value

Almost all fruits plants consist of protein, carbohydrates and minerals necessary for the day to day balance diet. Many of the fruits provides Vitamins in great content followed by minerals such as Calcium, Magnesium, Phosphorous, and Iron, Amino acids, Ascorbic acids, Carbs, Isoquinol alkaloids, dietary fibers, carotens and lipids.

Graph 1: Graph showing No of family



Graph 2: Graph showing fruits types



CONCLUSION

Most of the plants identified are used as source of dietary supplement by most of the individual living in the rural areas. Even though their uses is being increasing day by day their uses is limited only in the rich family not for the people living below poverty line. If these important plants can be made identifiable for those of present generation individual and research is conducted on the topic, fruits plants can leads to golden era of the nutritional supplement.

CONFLICT OF INTEREST

The author affirmed no conflict of interest.

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