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# DETERMINATION OF SOME GROUND COVER PLANTS GROWING NATURALLY IN LAKES REGION OF TÜRKİYE

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**Abstract:** The study area (Lakes Region) located in Western Anatolia part of Türkiye has a very rich floristic composition. However, these natural plants are used seldom for landscape or economic purposes. In this context, ground cover plants are often inconspicuous elements of a landscape plantation design because of their functional and aesthetics avantages. Although natural ground cover plants are very important, knowledges on the subject are unsufficient. In this study, potantial natural ground cover plants were determined in survey studies from the Lakes Region for the first time. The study was carried out among 2000 and 2004 years from different habitats in mountains of the region. By our observations in the study, concept of "ground cover plant" was defined newly. Collected and identified plants according to general flora books by the authors are hold in Herbarium GUL of Süleyman Demirel University. According to our field observations, botanical and ecological characteristics of the plants were determined for ground covering. A list of these plants was listed alphabetically.
According to the results, totally **175** taxa belonging to 79 genera and 28 families were determined. **44** of them are belonging to Fabaceae family. The family has more taxa than other families on the subject. Their distributions and ration to life forms of the taxa are as follows: **Chamaephytes 81 (46.2 %), Hemicryptophytes 71 (40.5 %), Terophytes 12 (6.8 %), Geophytes 7 (4.0 %) and Phanerophytes 4 (2.2 %)**. **80 taxa of them are endemic to Türkiye** and **endemism ratio is 46 %.** On the other hand, distributions to phytogeographical regions of ground cover plants growing in the study area **Mediterranean elements 48 (27.0 %), Irano-Turanian elements 44 (25.0 %), Euro-Siberian elements 13 (7.0 %), many regionous 10 (6.0 %) and unknown 60 (34.0.%).** Some ground cover plants were proposed for different habitats and landscape areas.

***Key Words:*** Ground cover plants, Plantation design, Plant ecology, Phytogeography, Lakes Region, Isparta.

# GÖLLER YÖRESİ'NDE DOĞAL OLARAK YETİŞEN BAZI YER ÖRTÜCÜ BİTKİLERİN BELİRLENMESİ

**Özet:** Çalışma alanı(Göller Yöresi) Türkiye'nin Batı Anadolu kesiminde yer alır. Yöre, floristik açıdan çok zengindir. Bununla birlikte bu doğal bitkiler ekonomik amaçlı veya yer örtücü amaçlı olarak nadiren kullanılmaktadır. Bu manada, yer örtücü bitkiler yörede ekseriyetle peyzaj düzenlemelerde fazla dikkat çekmez. Ancak bu bitkilerin fonksiyonel ve estetik avantajları çok fazladır. Doğal yer örtücü bitkiler çok önemli olmasına rağmen bu konudaki bilgiler de oldukça yetersizdir. Bu çalışmada, floristik çalışmalarla yörenin potansiyel doğal yer örtücü bitkileri ilk kez belirlendi. Çalışma, 2000-2004 yıllarında yapıldı ve bitkilerin listesi yörenin dağlarındaki farklı habitatlarda yapılan çalışmalarla belirlendi. **Yer örtücü bitki** anlamında çalışmaya dair gözlemlerimiz ilerleyen yıllarda yeniden gözden geçirildi ve bazı tanımlamalar yapıldı. Tarafımızdan toplanan ve genel floristik eserler yardımıyla tarafımızdan teşhisleri yapılan iletim demetli yer örtücü bitki örnekleri Süleyman Demirel Üniversitesi'nin(Isparta) **GUL Herbaryumu**'unda muhafaza edilmektedir. Yer örtücü bitkiler için Göller Yöresi'nin dağlarında yapılan arazi gözlemleri, bitkilerin botanik ve ekolojik özellikleri çalışmada belirlendi. Bu bitkiler alfabetik sıraya dizilerek listelendi.
Çalışmanın sonuçlarına göre; toplam olarak 79 cins ve 28 familyaya ait **175** takson tayin edildi. Bunlardan **44** takson Fabaceae familyasına aittir. Bu familya yer örtücü bitkiler açısından diğer familyalardan daha çok takson ihtiva eder. Yöreden tespit edilen yer örtücü bitki taksonlarının hayat

formları ve hayat formlarına dağılım oranları aşağıdaki gibidir: **Kamafit 81 (% 46.2), Hemikriptofit 71 (% 40.5), Terofit 12 (% 6.8), Geofit 7 (% 4.0) ve Fanerofit 4 (% 2.2). Bu taksonlardan 80'i Türkiye endemiğidir ve endemizm oranı % 46'dır.** Diğer taraftan yörenin yer örtücü bitkilerinin bitki coğrafyası bölgelerine dağılımı ve oranları şöyledir: **Mediterranean(Akdeniz) elementi 48 (% 27.0), Irano-Turanian(İran-Turan) elementi 44 (% 25.0), Euro-Siberian(Avrupa-Sibirya) elementi 13 (% 7.0), çok bölgeli 10 (% 6.0) ve coğfafi bölgesi bilinmeyen 60 (% 34.0).** Bazı yer örtücü bitkiler peyzaj düzenlemeleri için ilk kez belirlendi ve farklı ortamlarda uygulanması önerildi.

***Anahtar Kelimeler*:** Yer örtücü bitkiler, Peyzaj düzenleme, Bitki ekolojisi, Bitki coğrafyası, Göller Yöresi, Isparta.

## 1.Introduction

In Türkiye, topographical, climatic, soil differences and social-cultural conditions have been made quite wealthy in respect of biodiversity. It is a center of origin and still a source of genetic diversity for numerous globally important agricultural, horticultural, medicinal, aromatic, ornamental and woody crop plants **[1].** The country is across place of three different bio-geographic regions, named as Irano-Turanian, Mediterranean and Euro-Siberian each with its own endemic species and natural ecosystems **[2-4]**. Türkiye has very rich flora in woody and herbaceous plants. It is determined that flora of it contains almost 12.000 vascular plant taxa belonging to 174 families, 1244 genera and over 9500 species. In average each 20 day one new species, each year almos 20 species for Türkiye are recorded **[4].**

Türkiye is one of the leading countries for known endemism; about 35 % of the plant taxa in the flora are endemic to Türkiye **[2, 6].** The richest family in endemism of Türkiye is Asteraceae (Compositae) having a total 431 species, 40 % of which is endemic. 41 % of the 400 species of Fabaceae (Leguminosae) is endemic, and also 57 % of the 306 Lamiaceae (Labiatae) species is endemic. There are 10 genera endemic to Türkiye. It is this exceptional amount of endemism that places a huge responsibility on Türkiye to ensure that these species are adequately protected so as not to become endangered or extinct, particularly those, which provide crops upon which much of the world depends **[6].**

The Lakes Region has an important potantially in terms of economic plants. There are 190 for medicinal, 180 for food, 170 for horticulture purpose from of vascular plant taxa growing in only Isparta province. Isparta is an important province of Lakes Region which is containing abundant endemic number of taxa about 650, and nonendemic taxa number are around 1600 **[7, 8].** Burdur province of Lakes Region has about 400 endemic and 1200 nonedemic vascular plant taxa **[9].**

Although Türkiye has a rich floristic composition, the number of cultivating species doesn't reflect the native species richness. In general, exotic plants have been used for outdoor landscape plantation in urban. Nowadays, native plants in outdoor landscape plantation design in urban, rural and natural areas have received increasing attention. The usage and become widespread of native plants have attracted for aesthetic and functional landscape aims because of some various factors include raising the public awareness for nature conservation, to give important to landscape arrangement studies, natural a character materials, contribute to urban ecosystem, capability of adaptation to environmental conditions, rehabilitation of problematic areas, shelter and food sourch

for wildlife, and contribute to conservation of plant species and habitat diversity and sustainable.

The Lakes Region which has an important gene center contains a very rich flora. But these plants are used seldom for landscape and economic aims. It is usually knowed and used turfgrass plants instead of ground cover plant. On the contrary other ground cover plants are knowed not enough. Nowadays, some natural vascular plants in the region producted and exhibited as ground cover plants in parks of the city by the mayor of Burdur province **[9,10].** Also some native ground cover plants have being tested for last two years in Süleyman Demirel University, Botanical Garden by Dönmez, Özçelik, Fakir for one research project supported by TUBİTAK. But the research is not completed yet.

In this study, the concept of ground cover plants were defined in clearly and also some native ground cover plants of the Lakes Region are determined. In this context, it will be benefit some data including knowledge about botanical and ecological characteristics of these plants, the potential using for outdoor landscape aims.

***Concept of Ground Cover Plants***

Living plant materials are very important and dominant materials for landscape outdoor design. Ground covers plants might be seen often inconspicuous elements of a landscape plantation design. But ground covers serve many functions and aesthetics for landscape plantation design; to help link together ornamental plants, to require less maintenance (a saving of money and energy), most of these plants are easy to and low-growing (generally less than 12 inches) and spread easily are suitable ground cover plants, to less susceptible to disease or weed infestation, to promote water conservation (select suitable species to climate), to prevent soil erosion, as a design element, or where turfgrass is not practical, to reduce storm water runoff entering storm sewers and rivers reducing potential for downstream flooding/erosion and pollution, to do not require fertilizer or pesticides, to provide food, shelter and protection for wildlife, to provide shade to buildings, reducing energy requirements and to enhance to visual values by their color, texture and form. These plants solve scores of design and landscape management problems, reduce maintenance requirements, and add diversity and contrast to landscape spaces or settings. They furnish a transition between lofty trees and low lawns, and relieve monotony in spaces as they change with seasons. For centuries, ground cover plants have cloaked the earth's surface with a natural carpet of vegetation, protecting and nurturing the soil. These plants have adapted to their environments, thriving in the most formidable climates and poorest soils. Generations of agriculturist have used ground covers to conserve and enrich the soil nowadays, homeowners and landscapers plant them for various purposes in ornamental settings.

*Concept of ground cover plants is defined differently by us, therefore; this concept must be defined clearly.* For example, flora contains all plants growing on the soil surface. These indicate variety of design criters such as, texture, structure and color. Actually, all plants can be considered ground covers because they all help secure and sustain soil. However, ground covers are plants that exhibit low or horizontal growth habits, spread rapidly, and protect the soil from erosion. They include plants that naturally or with minimal pruning or mowing range in height from less than 1 inch up to 3 feet tall **[11].**

**[12]** described ground covers as shelters that cover and grow in height from 3-5 cm up to 1-2 m from soil surface. *According to another definition,* these plants are usually called as evergreens, which can be perennial herbaceous and woody plants in height from 3-5 cm up to 3-5 meters, and grow and cover soil surface closely **[13].**

*In this study, ground cover plants are defined as "annual or perennial herbaceous, semiwoody or sometimes woody plants whose above ground parts grow closely to soil surface and cover soil surface densely with approximately 30 cm in height".* There is a relationship between plant and human height. In this context, these plants are the only plants that can be seen by eye level of a person who is laying on ground. The ground covers include a wide range of plant types-evergreen to decidous, flowering and nonflowering, creeping or upright. There is a ground cover plants available for virtually any setting, need and climate.

These plants are divided two classes: one includes all turf grass species and the other group contains herbaceous and woody plants. Among these plants there are those specifically suited for certain growing conditions, such as wet, shade, and as well as plants that are adapted to a wide range of environments.

Turfgrass which exculusively belong to Poaceae (Gramineae) family is the best known and most commonly used living ornamental ground cover. These plants are ideal for certain settings for their aesthetic and functional advantages. Some of these advantages are visual effects, continual cutting, resistance to weight pressure, full and continual covering, make recreation activities possible, although there are some disadvantages as well such as, high cost of establishment and maintenance. Other ground covers plants, are also becoming an alternative to turfgras, have a lot of families, genera and species. These plants are a group of versatile plants that includes annuals, perennials and even some low growing shrubs. As all ready know, it is explained that scientific identity of all plants is situated in systematic. Life forms that representing adaptation to environmental conditions contains common characteristics, behaviors and functionals of plants. One of the common characteristics is ground covering characteristic. According to Raunkier, life form of ground cover plants usually Chamaephyt group that has perennial herbaceous and semiwoody plants. However, Hemicryptophyt (*Sarcopoterium spinosum, Onobrychis cornuta, Astragalus* spp., *Taraxacum* spp., *Teucrium polium, Viola odorata,*), Phanerophyt (*Juniperus sabina* Cv."Tamariscifolia", *J. s.* Cv. "Buffalo", *J. communis* Cv. "Echiniformis", *J. horizan* Cv. "Emerald Spreader" *J. horizantalis* "Wiltonii" and some nana plants or climbings plants (*Hedera helix, Clematis* spp., *Vincetoxicum* spp. etc.) follow them **[13, 14].**

Ground cover plants must have some special features for aesthetic and functional aims. Therefore, it is preffered perennials and evergreen plants that have rapid and suitable grow up, assist in aesthetic to landscape spaces with characteristics of plant portions, resistant to stress and closely or shorth cutting. For a plant to be a good ground cover, it should have a dense growth habit, be easy to establish, look good in mass, shade out unsightly weeds and possess beauty. It is often beneficial if the plant has the ability to hold the soil and prevent erosion. Althought there are very much ground cover plants in nature, most of them can not being used for landscape aims. Some of natural ground cover plants had been hybridized and cultured. If natural ground cover plants use for

landscape aims it will be get useful for to get rich of using plant materials, to profit for an economic value to a plant, to get In-Situ conservation of plants, to make conscious persons and others.

## 2. Material and Methods

The study area (Lakes Region) which located in Western Anatolia is floristically an interesting region of Türkiye. The study area located in the Mediterranean and Irano-Turanian phytogeographical regions and B3, B4, C1, C2, C3, C4 grid squares used by [15]. Altitude of the area varies from 190 m to 3300 meters [4]. The materials of ground cover plants were collected and determined by us in survey studies among 2000 and 2004 from Lakes Region and also were benefited from some literatures [4, 8-9, 15-18]. All collected plant specimens were numbered and deposited in the Herbarium of Süleyman Demirel University (**GUL Herbarium**). Botanical and ecological characteristics of these taxa were showed with field observations and records in **Table 3**. The occurred plant list was given alphabetically in Latin. Some plants which have no collection number were observed in the area. It has no needed again their specimens for being collected before by us. Identification of the plants was made by us according to "Flora of Turkey and East Aegean Islands [15]. During field studies, it was particularly taken care to get a sufficient production material (seeds, rhizomes, bulbs etc.) and their photos. Abbreviations used in Table 3 were showed in Table 1. Families and their taxa number arer being given Table 2.

## 3. Findings

According to the results (Table 3), totally 175 vascular plant taxa belonging to 28 families and 79 genera were determined. 44 of them are belonging to Fabaceae family. The family is bigger than other families on the subject (Table 3). Their distributions to life forms of the taxa and rations are as follows: Chamaephytes 81 (46.2 %), Hemicryptophytes 71 (40.5 %), Therophytes 12 (6.8 %), Geophytes 7 (4.0 %) and Phanerophytes 4 (2.2 %). 80 taxa of them are endemic to Türkiye and endemism ratio is 46 %. On the other hand, distributions to phytogeographical regions of ground cover vascular plants growing in the study area as Mediterranean elements 48 (27.0 %), Irano-Turanian elements 44 (25.0 %), Euro-Siberian elements 13 (7.0 %), many regionous 10 (6.0 %) and unknown 60 (34.0 %). The majority of these plants is perennial herbaceous and semiwoody plants.

In general, identified native plants have been grown various in natural habitats and altidutes include slopy and rocky places, steppe, the clearings or forests areas, meadows and edges of stream. Majority of these plants have been undertaken very important functions in their natural habitat like ground cover. These ground cover plants are ideal and can be used for landscape plantation design for various aims (Table 3).

***For rock gardens*:** Some native plants like *Arabis aubrietioides*, *Aubrieta pinardii*, *A. anamasica*, *A. canascens* subsp. *canescens*, *Bolanthus minuartioides*, *B. thymoides*, *Helichrysum chasmolycicum*, *Inula anatolica*, *Nepeta plinux*, *Omphalodes ripleyana*, *Pterocephalus pinardii*, *Sedum* spp., *Rosularia libanotica* and *Thymus* spp. could be used.

***For eroded or slopy places***: Some native plants like *Alyssum alyssoides, Arabis aubrietioides,* some perennial *Astragalus* spp. and *Acantholimon* spp., *Aubrieta* spp., *Bolanthus* spp., *Coronilla varia* subsp. *varia, Cynodon dactylon,* perennial *Dianthus* spp., *Draba bruniifolia, Genista burdurensis, Erodium pelargoniiflorum, Hedysarum hedysaroides, Herniaria psidica, Lagotis stolonifera, Lamium cymbalariifolium,* perennial *Marrubium* spp., perennial *Minuartia* spp., perennial *Onobrychis* spp., *Paronchia* spp., *Pterocephalus pinardii, Ranunculus demissus, Rosularia libanotica, Sedum* spp., *Scutellaria orientalis,* perennial *Silene* spp., *Telephium imperati, Teucrium montanum, T. polium, T. chamaedrys,* perennial *Thymus* spp., *Thlaspi papillosum, Trifolium barbulatum, Trigonilla cretica, Vinca herbacea, V. major, Vincetoxicum canascens* subsp. *pedunculata* and *Viola odorata* could be advised.

***For shadowy places****:* Some native plants like *Inula anatolica, Physalis alkekengi, Ranunculus repens, Thymus* spp., *Teucrium chamaedrys, Origanum saccatum,O. minutiflorum, O. vulgare, Tussilago farfara* and *Vinca herbacea, V. major, Primula* spp., *Hedera helix* could be advised.

***For moistly and marshy areas***: Some native plants like *Globularia trichosantha, Gypsophila curvifolia, Ipomoea stolonifera,* perennial *Lotus* spp., *Medicago lupulina, Origanum vulgare, Parnassia palustris, Primula* spp., *Potentilla* spp., *Ranunculus repens, Trifolium* spp., *Tussilago farfara, Veronica bornmuellerii, Veronica jacquinii* and *Vinca herbacea* could be used.

***For their decorative, aestehetic caharacteristics and beautiful flowers***: Some of native plants like *Lamium cymbalariifolium, Lotononis genistoides, Gypsophila arrostii, Hedera helix, Ipomoea purpurea, Convolvulus* spp., *Moltkia aurea, Paronchia* spp., *Pelargonium endlicherianum, Physalis alkekengi, Salvia tomentosa, Saponaria pumilio, Scutellaria orientalis, Thymus* spp., *Trifolium barbulatum, Veronica* spp., *Vicia* spp., *Viola odorata* and *Ziziphora clinopodioides* could be advised.

## 4. Results

Lakes Region has a very rich center in plant diversity and a very hight endemism ration. According to the systematic list, majority of idendified natural plants might be used as a good ground cover plants for different aims and conditions (Table 3). Potential ground cover plants should be researched usage for landscape aims in urban and rural ecosystem with other studies. Therefore, the plants should be done cultivating and adapting studies in urban ecosystem. Finally, cultivation of potential natural plants will be contribute plant diversity for landscape plant design and became widespread of endemic or endangered plants. In addition, the plants will be better adaptation to local conditions and decrease to usage of egzotic plants in urban green spaces. In this context, usage of true native plants to landscape aims will be given an opportunity for the best ideal landscape arrangements.

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**Table 1. Abbreviations/symbols and their means used in Table 3**

| | |
|---|---|
| Population size in the locality | **1:** too large |
| | **2:** abundantly |
| | **3:** enough |
| | **4:** seldom |
| | **5:** rarely |
| Distribution to geographical region of plants | **Med.:** Mediterranean element |
| | **Ir-Tur.:** Irano-Turanian element |
| | **Euro-Sib.:** Euro-Siberian element |
| | **MR:** More Regionous |
| | **Uk:** Unknown |
| Endemism status of plant | **E:** Endemic taxon |
| | **NE:** Not Endemic taxon |
| Evergreen or decidious status of plant | **E:** Evergreen |
| | **HE:** Half Evergreen |
| | **D:** Deciduous |
| Life time status of plant | P: Perennial |
| | **B:** Biannual |
| | **A:** Annual |
| Leaf color of plant | **G:** Green |
| | **DG:** Dark Green |
| | **Y:** Yellow |
| | **Gr:** Grey |
| | **B:** Blue |
| | **R:** Red or Reddish |
| Flower color of plant | **G:** Green |
| | **Y:** Yellow |
| | **Gr:** Grey |
| | **B:** Blue |
| | **R:** Red |
| | **W:** White |
| | **C:** Crem |
| | **P:** Pink |
| | **Pu:** Purple |
| | **O:** Orange |
| | **Va:** Variable (More than two colors) |
| | **Uk:** Unknow |
| Growing parts of plant | **S:** Stolonous |
| | **Rh:** Rhizomatous |
| | **R:** Root |
| | **Se:** Seed |
| | **T:** Tuber |

**Table 2. The taxon numbers and percent ratios of idendified plants according to the families.**

| | Name of Family | Taxon Number | Percentage Ratio |
|---|---|---|---|
| 1 | Araliaceae | 1 | 0,01 |
| 2 | Asclepiadaceae | 1 | 0,01 |
| 3 | Asteraceae/Compositae | 20 | 0,11 |
| 4 | Boraginaceae | 3 | 0,02 |
| 5 | Brassicaceae/Cruciferae | 8 | 0,05 |
| 6 | Campanulaceae | 2 | 0,01 |
| 7 | Caryophyllaceae | 25 | 0,14 |
| 8 | Convolvulaceae | 4 | 0,02 |
| 9 | Crassulaceae | 5 | 0,03 |
| 10 | Dipsacaceae | 1 | 0,01 |
| 11 | Fabaceae/ Leguminosae | 44 | 0,25 |
| 12 | Geraniaceae | 5 | 0,03 |
| 13 | Globulariaceae | 1 | 0,01 |
| 14 | Illecebraceae | 4 | 0,02 |
| 15 | Lamiaceae/ Labiatae | 23 | 0,13 |
| 16 | Malvaceae | 1 | 0,01 |
| 17 | Parnassiaceae | 1 | 0,01 |
| 18 | Plantaginaceae | 1 | 0,01 |
| 19 | Plumbaginaceae | 1 | 0,01 |
| 20 | Poaceae/ Gramineae | 2 | 0,01 |
| 21 | Primulaceae | 3 | 0,02 |
| 22 | Ranunculaceae | 5 | 0,03 |
| 23 | Rosaceae | 3 | 0,02 |
| 24 | Scrophulariaceae | 6 | 0,03 |
| 25 | Solanaceae | 1 | 0,01 |
| 26 | Violaceae | 2 | 0,01 |
| 27 | Zygophyllaceae | 1 | 0,01 |
| 28 | Apocynaceae | 1 | 0,01 |
| | **Total** | **175** | **1,00** |

**Table 3. Botanical and ecological characteristics of some native ground cover plants of Lakes Region**

| Number | Names of Plants | Collection Number | Locations | Habitats | Altitudes (m) of Gathering Localities | Families | Population Size in Locations | Life forms | Geographical Distribition of Plants | Status of Endemism | Status of Evergreen | Status of Life Period | Plants Height (cm) | | Leaf Color | Flower Color | Avarage covering degree (cm) | Status growing | Other Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Min | Max. | | | | | |
| 1 | *Achillea clypeolata* Sm. | 7088 | Upper parts of Dedegül Mountains (Isparta) | Alpinic steppe | 2000-2400 | Asteraceae | 2 | Ch | Euro.-Sib. | NE | D | P | 12 | 50 | Gr | Y | 40 | Se | Resistant of drought |
| 2 | *Achillea lycaonica* Boiss. & Heldr. | 7619 | Between Burdur and Tefenni Road | Rocky and slopy places | 800-1000 | Asteraceae | 2 | Ch | Ir.-Tur. | E | D | P | 20 | 40 | G | Y | 45 | Se | |
| 3 | *Achillea nobilis* L. subsp. *sipylea* (O.Schwarz) Bassler | 7463 | Barla Mountain (Isparta) | Clearings in forest | 1400-1600 | Asteraceae | 4 | Ch | Med. | E | D | P | 10 | 40 | Gr | Y-W | 40 | Se | Dense leafy |
| | | 6915 | Yaka (Aksu) Stream | Under forest areas | 1400 | | 5 | | | | | | | | | | | | |
| 4 | *Achillea phrygia* Boiss.& Bal. | 6751 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Very sloping areas | 1500-1800 | Asteraceae | 4 | Ch | Ir.-Tur. | E | D | P | 10 | 30 | Gr | Y-W | 40 | Se | Dense leafy, a good ground covering on rocky and slopy places |
| | | 7178 | Dedegül mountain and Kızıldağ National Park areas (Isparta) | Humid areas and clearings in forest | 1500-1800 | | | | | | | | | | | | | | |
| 5 | *Achillea teretifolia* Willd. | 7269 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | Asteraceae | 3 | Ch | Ir.-Tur. | E | D | P | 10 | 30 | Gr | W | 50 | Se | A good ground covering on rocky and slopy places |
| 6 | *Achillea willelmsii* C. Koch | 6750 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Very sloping areas | 1500-1800 | Asteraceae | 1 | Ch | Ir.-Tur. | NE | D | P | 10 | 30 | Gr | W | 50 | Se | A good ground covering on rocky and slopy places |

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| 7 | *Alyssum alyssoides* (L.) L. | | Periphery of Gölcük Lake and Halıkent (Isparta) | Macquis and rocky places | 1000-1100 | Brassicaceae | 1 | T | MR | NE | D | A | 5 | 25 | G | W | 15 | Se | |
| 8 | *Alyssum niveum* Dudley | 7767 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Rocky places | 2100-2400 | Brassicaceae | 5 | T | Ir.-Tur. | E | D | P | 5 | 15 | Gr | W | 15 | Se | A good ground covering on rocky and slopy places |
| 9 | *Arabis aubrietioides* Boiss. | | Periphery of Gölcük Lake and Karanlık Stream Locality (Isparta) | Clearing areas | 1435 | Brassicaceae | 5 | T | Uk | E | D | P | 7 | 15 | D G | P | 30 | R | A good ground covering on rocky and slopy places |
| 10 | *Astragalus cinereus* Willd. | 7760 | Kirazlıdere Locality (Isparta) | Macquis | 1200 | Fabaceae | 2 | Ch | Ir.-Tur. | E | E | P | 7 | 20 | G | Y-Pu | 30 | R | Semishrub |
| 11 | *Astragalus barbarea* Bornm. | 7059 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Afforestation areas | 1550-1600 | Fabaceae | 5 | Ch | Ir.-Tur. | E | E | P | 15 | 20 | G | W | 20 | R | A little known plant and semishrub |
| 12 | *Astragalus campylosema* Boiss. subsp. *atropurpureus* (Boiss.) Chamberlain | 7510 | In the campus of S.D.University | Afforestation areas | 1300 | Fabaceae | 5 | Ch | Uk | E | E | P | 10 | 25 | D G-R | Y-R-V-P | 20 | R | Semishrub |
| 13 | *Astragalus christianus* L. | 7547 | Erenyaka Cemetery (Akseki) | Cemetery | 650 | Fabaceae | 2 | Ch | Uk | NE | E | P | 20 | 40 | Gr | W-Y | 20 | R | Semishrub |
| 14 | *Astragalus cinereus* Willd. | | Kirazlıdere locality(Isparta) | Macquis | 1200 | Fabaceae | 2 | H | Ir.-Tur. | E | D | P | 20 | 40 | G | Y | 30 | R | Semishrub |
| 15 | *Astragalus gymnolobus* Fischer | 6794 | Çamdağı locality (Isparta) | Blackpine forests | 1800 | Fabaceae | 2 | Ch | Ir.-Tur. | E | E | P | 5 | 30 | G | W-Y-P | 70 | R | Spiny and semishrub |
| | | 7054 | Pürenova locality (Gölcük Lake) | Cedar afforestation areas | 1550-1600 | | | | | | | | | | | | | | |
| 16 | *Astragalus lycius* Boiss. | 7529 | Sütçüler (Isparta) | Blackpine forest | 1300-1500 | Fabaceae | 4 | Ch | Uk | E | E | P | 20 | 35 | G | P | 30 | R | Semishrub |
| 17 | *Astragalus microcephalus* Willd. | 7276 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | Fabaceae | 2 | Ch | Ir.-Tur. | NE | E | P | 20 | 40 | G | Y | 50 | R | Spiny and shrub |
| 18 | *Astragalus oxytropifolius* Boiss. | 6640 | The Campus of S.D.University | Macquis | 1250 | Fabaceae | 4 | H | Ir.-Tur. | E | D | P | 15 | 30 | Gr | P-Pu | 30 | R | Semishrub |

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| 19 | *Astragalus panduratus* Bunge | 7058 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Rocky and slopy places | 1550-1600 | Fabaceae | 4 | H | Ir.-Tur. | E | D | P | 10 | 40 | Gr | Y | 30 | R | |
| | | 7247 | Periphery of Gölcük Lake (Isparta) | Eroded areas | 1100-1400 | | 2 | Ch | | | | | | | | | | | |
| 20 | *Astragalus pinetorum* Boiss. | 7065 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Afforestation areas | 1550-1600 | Fabaceae | 2 | H | Ir.-Tur. | E | D | P | 10 | 30 | G | Y | 20 | R | |
| 21 | *Astragalus prusianus* Boiss. | 7234 | in the Campus of S.D.University (Isparta) | Macquis | 1100-1300 | Fabaceae | 4 | Ch | Med. | E | E | P | 20 | 30 | G | Y | 40 | R | Spiny and shrub |
| | | 6688 | Bahtiyar Village (Yalvaç-Isparta) | Steppe | 1100 | | 1 | | | | | | | | | | | | |
| | | 7781 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Blackpine forest and clearings | 1700-1900 | | 2 | | | | | | | | | | | | |
| 22 | *Astragalus sorgerae* Hub.-Mor. & Chamb. | 7401 | Dedegül mountains and and Periphery of Pınargözü (Yenişarbademli) | Blackpine forest and clearings | 1600 | Fabaceae | 3 | H | Ir.-Tur. | E | D | P | 10 | 20 | G | Y | 20 | R | |
| 23 | *Astragalus sparsipilis* Hub.-Mor. & Chamb. | 7473 | Upland of Aksu and Dedegül Mountains (Isparta) | Blackpine forest and clearings | 2300 | Fabaceae | 5 | H | Ir.-Tur. | E | D | P | 8 | 15 | G | V | 20 | R | |
| 24 | *Astragalus vulnerariae* DC. | 6639 | in the Campus of S.D.University (Isparta) | Macquis | 1250 | Fabaceae | 3 | Ch | Uk | E | D | P | 10 | 30 | G | Va | 30 | R | |
| | | 6874 | Between Beyşehir and Konya roads, Fountain of E. Güngör | Ground floor in Forest | 1560 | | 2 | | | | | | | | | | | | |
| 25 | *Astragalus zederbaueri* Stadlmann | 7208 | Periphery of Gölcük lake and old nursery garden locality (Isparta) | Rocky and slopy places | 1200 | Fabaceae | 2 | Ch | Ir.-Tur. | E | D | P | 10 | 20 | Gr | W-Y | 40 | R | Aesthetic and a good ground cover plant |

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| 26 | *Acantholimon acerosum* (Willd.) Boiss. var. *brachystachyum* Boiss. | 7242 | Ayazma and Sidre locality (Isparta) | Macquis | 1200-1400 | Plumbaginaceae | 4 | Ch | Ir.-Tur. | E | E | P | 10 | 30 | G | W | 80 | R | Spiny, semishrub and compact plant |
| 27 | *Aubrieta pinardii* Boiss. | 7708 | Tota Plateau (Sütçüler) | Rocky places | 800 | Brassicaceae | 2 | Ch | Ir.-Tur. | E | D | P | 5 | 15 | Gr | Pu | 15 | Se | A good ground cover plant on rock places |
| | | | Periphery of Gölcük lake (Isparta) | Cultivated lands | 1100-1500 | | 2 | | | | | | | | | | | | |
| | | 7185 | Dedegül mountain and Kızıldağ National Park areas (Isparta) | Rocky places | 1800 | | 4 | | | | | | | | | | | | |
| | | 7336 | Between Yalvaç and Akşehir roads | Rocky places | 2200-2700 | | 4 | | | | | | | | | | | | |
| 28 | *Aubrieta anamasica* Peşmen & Güner | 6666 | Upper of military region in Burdur | Macquis | 800 | Brassicaceae | 3 | Ch | Uk | E | D | P | 5 | 15 | Gr | Pu | 15 | Se | |
| 29 | *Aubrieta canascens* (Boiss.) Borm. subsp. *canescens* | 6959 | Between Isparta and -Dedegül Mountain roads | Rocky places | 1800 | Brassicaceae | 2 | Ch | Uk | E | D | P | 5 | 15 | Gr | Pu | 15 | Se | |
| | | 7177 | Pine forests in Kızıldağ Natural Park | Moistly and opened areas | 1500-1800 | | 4 | | | | | | | | | | | | |
| 30 | *Bolanthus cherlerioides* (Bornm) Bark. | 7548 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Cultivated lands | 1650-1900 | Caryophyllaceae | 2 | Ch | Med. | E | E | P | 5 | 15 | G | W-P-Pu | 20 | R | Needle leafy and a good covering on volconic places |
| | | 7264 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Steppe | 1650-1900 | | 2 | | | | | | | | | | | | |
| | | 7957 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Alpinic steppe and sloping places | 1800-2300 | | 4 | | | | | | | | | | | | |
| 31 | *Bolanthus frenkenioides* (Boiss).Bark. var. *frenkenioides* | 7926 | Altınyayla – Kızılalan localities (Burdur)- Belbaşı site | Alpinic steppe | 1575 | Caryophyllaceae | 5 | Ch | Med. | E | E | P | 5 | 15 | G | P | 20 | Se-R | Good growing on meadowy places |

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| | | 9161 | Sidre and Karatepe hills (Isparta) | Clearings in forest | 1200 | | 5 | | | | | | | | | | | | |
| 32 | *Bolanthus minuartioides* (Jaub.&Spach.) Hub.- Mor. | 7899 | Between Isparta and Burdur roads (Yakaören and Gelincik villages ) | Clearings in forest | 1200-1400 | Caryophyllaceae | 3 | Ch | Med. | E | E | P | 5 | 15 | G | W | 30 | Se-R | It is mass form, a good ground covering on alpinic meadows places |
| | | 7903 | Gölhisar and Karaatlı viilage locality (Burdur) | Steppe | 1240 | | 4 | | | | | | | | | | 25 | | |
| | | 7905 | Salda Lake and Yeşilova(Burdur) | Volcanic rocky | 1210 | | 4 | | | | | | | | | | 25 | | |
| | | 7906 | Between Yeşilova(Burdur) and Karamanlı roads | Rocky places | 1040 | | 4 | | | | | | | | | | 20 | | |
| | | 7917 | Between Dirmil and Yeşilova roads | Volcanic rocky and clearing in forest | 1180 | | 4 | | | | | | | | | | 20 | | |
| | | 7956 | Crossroad of Eğirdir-Barla | Clearings in forest | 1200 | | 3 | | | | | | | | | | 20 | | |
| | | 8195 | Afyon-Sandıklı locality, Başaş small town and Ürküt plateau | Sloping areas | 1210 | | 3 | | | | | | | | | | 25 | | |
| | | 9024 | Between Akseki and Cevizli roads | Vineyard areas | 1000 | | 4 | | | | | | | | | | 20 | | |
| | | 7717 | Juniper forests in Atabey MYO garden (Isparta) | Steppe and limy areas | 1200 | | 4 | | | | | | | | | | 20 | | |
| | | 9159 | Karatepe and Sidre hills (Isparta) | Clearings in forest | 1700 | | 4 | | | | | | | | | | 20 | | |
| 33 | *Bolanthus thymoides* Hub.& Mor. | 7927 | Altınyayla and Kızılalan locality (Burdur) | Alpinic steppe | 1575 | Caryophyllaceae | 4 | Ch | Med. | E | E | P | 5 | 15 | G | W | 20 | Se-R | |
| | | 9162 | Karatepe and Sidre hills (Isparta) | Clearings in forest | 1200 | | | | | | | | | | | | | | |
| 34 | *Bufonia calyculata* Boiss. & Bal. | 7587 | Çandır-Yazılı Kanyon Nature Park and Sütçüler (Isparta) | Rocky places | 450-600 | Caryophyllaceae | 2 | Ch | Uk | E | D | P | 15 | 25 | G | W | 20 | Se-R | Flowers are very small |

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| 35 | *Campanula iconia* Phitos | 6778 | Between Gelendost and Akşehir roads | Steppe | 1600-2000 | Campanulaceae | 5 | H | Ir.-Tur. | E | D | B | 15 | 20 | G | Uk | 20 | Se | Flowers are very beatiful, growing on moistly and rocky places |
| 36 | *Campanula cymbalaria* Sm. | 6766 | Periphery of Gölcük Lake (Isparta) | Moistly rocky places | 1000-1200 | Campanulaceae | 1 | H | Med. | NE | D | P | 10 | 20 | G | B | 30 | Se | |
| 37 | *Centaurea bornmuelleri* Hauskn. ex. Bornm. | 7460 | Barla Mountain (Isparta) | | 1400-1600 | Asteraceae | 2 | H | Ir.-Tur. | E | D | P | 30 | 50 | Gr | Pu | 30 | Se | |
| 38 | *Centaurea calolepis* Boiss. | 7097 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Asteraceae | 4 | H | Med. | E | D | P | 20 | 40 | Gr | Pu | 30 | Se | |
| 39 | *Centaurea drabifolia* Sm. subsp. *detonsa* (Bornm.) Wagenitz | 7668 | Aksu and Dedegül Mountain, top of Kapiz stream (Isparta) | Rocky places | 2000 | Asteraceae | 4 | H | Uk | E | D | P | 20 | 25 | Gr | Y | 30 | Se | |
| 40 | *Centaurea drabifolia* Sm. subsp. *cappadocica* (DC.) Wagenitz. | 7147 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Asteraceae | 4 | H | Uk | E | D | P | 20 | 25 | Gr | Y | 30 | Se | |
| | | 7322 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky steppe | 2200-2700 | | 4 | | | | | | | | | | | | |
| | | 7456 | Dedegül mountain and Pınargözü site (Isparta) | Blackpine forest and clearings | 1600 | | 2 | | | | | | | | | | | | |
| 41 | *Centaurea germanicopalitana* Bornm. | 7146 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Asteraceae | 4 | H | Ir.-Tur. | E | D | P | 10 | 15 | Gr | Pu | 20 | Se | |
| | | 7323 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky steppe | 2200-2700 | | 4 | | | | | | | | | | | | |
| 42 | *Centaurea kotschyi* (Boiss.& Heldr.) Hayek | 7324 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Alpinic steppe | 2200-2700 | Asteraceae | 4 | H | Ir.-Tur. | E | D | P | 5 | 40 | Gr | Y | 25 | Se | |

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| 43 | *Centaurea kotschyi* (Boiss.& Heldr.) Hayek var. *kotschyi* | 6702 | Between Konya and Hadim roads (Çiçek village) | Cultivated lands | 1375 | Asteraceae | 4 | H | Ir.-Tur. | E | D | P | 5 | 40 | Gr | Y | 25 | Se | |
| 44 | *Centaurea triumfettii* All. | 7787 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Blackpine forest and clearings | 1700-1900 | Asteraceae | 4 | H | MR | NE | D | P | 5 | 30 | Gr | Va | 30 | Se | |
| 45 | *Cerastium anomalum* Waldst.& Kit. | | Periphery of Gölcük Lake (Isparta) | Road edges | 1100 | Caryophyllaceae | 3 | T | Uk | NE | | P | 5 | 30 | Gr | W | 15 | Se | |
| 46 | *Cerastium banaticum* (Roch.) Heuffel | 6749 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Eroded areas | 1500-1800 | Caryophyllaceae | 3 | H | Uk | NE | D | P | 5 | 25 | Gr | W | 40 | Se-S | Flowers are very beatiful, the flowering is continuing long period, a good ground cover plant |
| | | 7267 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | | | | | | | | | | | | | | |
| | | | Periphery of Gölcük Lake (Isparta) | Road edges | 1100m | | | | | | | | | | | | | | |
| 47 | *Chamaecytisus eriocarpus* (Boiss.) Rothm. | 6754 | Periphery of Gölcük Lake (Isparta) | Blackpine forest and clearings | 1700 | Fabaceae | 3 | Ch | Med. | NE | D | P | 25 | 50 | Gr | Y | 40 | Se | Shrub |
| 48 | *Clematis vitalba* L. | 9144 | Termossos Güllük Montains National Park | Clearings in macquis | 1200 | Ranunculaceae | 2 | Ch | Uk | NE | D | P | 300 | 500 | G | W-Y | 100-300 | Se-R | Climbing plant |
| 49 | *Clematis flammula* L. | | Between Konya and Isparta roads | Clearings in macquis | 900 | Ranunculaceae | 3 | Ch | Med. | NE | D | P | 300 | 500 | G | W-Y | 100-300 | Se-R | |
| 50 | *Clematis cirrhosa* L. | | Between Antalya and Akseki (Erenyaka village) | Cultivated areas | 700 | Ranunculaceae | 3 | Ch | Med. | NE | D | P | 300 | 500 | G | W-Y | 100-300 | Se-R | |
| 51 | *Convolvulus arvensis* | | Between Antalya and Akseki (Erenyaka village) | Cultivated areas | 1200 | Convolvulaceae | 1 | H | MR | NE | D | P | 60 | 80 | G | W | 30-50 | Se-R | |
| 52 | *Coronilla emerus* L. subsp. *emeroides* (Boiss. & Sprun.) Uhrova | 7241 | Ayazma park and Sidre hill site (Isparta) | Clearings in macquis | 1200-1400 | Fabaceae | 2 | Ph | Uk | NE | D | P | 25 | 35 | G | Y | 30 | Se | Shrub |

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| 53 | *Coronilla varia* L. subsp. *varia* | 7674 | Aksu and Dedegül mountains, top of Kapiz stream (Isparta) | Rocky places | 2000 | Fabaceae | 2 | Ph | Uk | NE | D | P | 15 | 40 | G | Va | 100 | Se | A good ground covering on slopy places |
| | | 7467 | Between Şarkikaraağaç and Yalvaç roads (Bahtiyar Village) | Steppe | 1300 | | | | | | | | | | | | | | |
| 54 | *Cyclamen mirabile* Hildebr. | 6803 | Akseki, (Antalya) , Erenyaka village and Sokmak site | Quercus macquis | 800 | Primulaceae | 2 | G | Med. | E | D | P | 3 | 6 | D G | P-R | 20 | T | Growing at shadowy, on limestone and metamorphic rocks places |
| 55 | *Cynodon dactylon* (L.) Pers. | | Periphery of Gölcük Lake (Isparta) | Clearing areas | 1405 | Poaceae | 1 | G | Uk | NE | E | P | 25 | 35 | G | W | 30-50 | R | Dry stony hill slopes, rhizomes spreading, a good ground cover plant |
| 56 | *Dactylıs glomerata* L. subsp. *glomerata* | | Periphery of Gölcük Lake and Pilav hill (Isparta) | Blackpine forest and clearings | 1410 | Poaceae | 1 | Ch | Euro.-Sib. | NE | E | P | 15 | 100 | G | W | 25 | R | Rhizomes spreading, a good ground cover plant |
| 57 | *Dianthus anatolicus* Boiss. | 7109 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Caryophyllaceae | 3 | Ch | Uk | E | NE | P | 8 | 40 | G | W | 20 | R-Se | Rocky places |
| 58 | *Dianthus carmelitarum* Reut. ex Boiss. | | Periphery of Gölcük Lake (Isparta) | Road edges | 1100 | Caryophyllaceae | 3 | Ch | Euro.-Sib. | E | NE | P | 15 | 40 | G | P | 20 | R-Se | Rocky places |
| 59 | *Dianthus eldivenus* Czecz. | 7108 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Caryophyllaceae | 4 | Ch | Uk | E | NE | P | 8 | 35 | G | W | 20 | R-Se | Rocky places |
| 60 | *Dıanthus floribundus* Boiss. | | Periphery of Gölcük Lake and Pilav hill (Isparta) | Road edges | 1410 | Caryophyllaceae | 3 | Ch | Ir.-Tur. | NE | NE | P | 20 | 35 | G | W-P | 20 | R-Se | Stony and slopy places |
| 61 | *Dianthus orientalis* Adams in Weber & Mohr. | 6752 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Sloping areas | 1500-1800 | Caryophyllaceae | 2 | Ch | Ir.-Tur. | NE | NE | P | 15 | 40 | G | P | 20 | R-Se | Rockyand and slopy places, an extensive creeping woody base |
| | | | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Alpinic steppe | 1700-2000 | | | | | | | | | | | | | | |

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| 62 | *Dianthus zonatus* Fenzl. var. *zonatus* | | Periphery of Gölcük Lake and Halıkent (Isparta) | Clearings in macquis and rocky places | 1000-1100 | Caryophyllaceae | 2 | Ch | Uk | E | NE | P | 7 | 30 | G | P | 20 | R-Se | |
| 63 | *Dorystoechos hastata* Boiss. & Heldr. | 9142 | Termossos Güllük Mountain Natural Park | Rocky areas in macchie | 1200 | Lamiaceae | 3 | Ph | Med. | E | E | P | 30 | 70 | G | W | 80 | Se-R | Shrub, aromatic plant, growing on rocky places |
| 64 | *Draba bruniifolia* Stev. subsp. *heterocoma* (Fenzl) Coode & Cullen var. *nana* (Stapf) Schulz | 7117 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Brassicaceae | 4 | Ch | Uk | E | NE | P | 1 | 10 | G | Y | 20-30 | Se | Rocky and slopy places |
| | | 7332 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky steppe | 2200-2700 | | 2 | | | | | | | | | | | | |
| 65 | *Erodium pelargoniiflorum* Boiss. & Heldr. | 7782 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Blackpine forest and clearings | 1700-1900 | Geraniaceae | 2 | G | Uk | E | NE | P | 12 | 30 | Gr | W | 30 | Se | Shadowy and limestone rocks places |
| 66 | *Genista burdurensis* P. Gibbs | 7786 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Blackpine forest and clearings | 1700-1900 | Leguminosae | 3 | Ch | Ir.-Tur. | E | NE | P | 15 | 20 | G | Y | 30 | Se | Horizontal growing |
| 67 | *Geranium colombinum* L. | 7839 | Aksu-Pınargözü picnic areas in Dedegöl Mountain (Isparta) | Alpinic steppe | 2200-2400 | Geraniaceae | 2 | T | Uk | NE | NE | A | 10 | 40 | Gr | P-Pu | 30 | Se | A good ground cover plant on rocky and slopy places |
| 68 | *Geranium lasiopus* Boiss. & Heldr. | 7637 | Barla mountain (Isparta) | Underside blackpine forest and cultivated fields | 1750-2000 | Geraniaceae | 4 | H | Ir.-Tur. | E | NE | P | 10 | 15 | Gr | Pu | 30 | Se | A good ground cover plant on rocky and slopy places |
| 69 | *Geranium glaberrimum* Boiss. & Heldr. | 7114 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Geraniaceae | 2 | H | Med. | E | NE | P | 10 | 30 | Gr | R-Pu | 30 | Se | Growing in crevices of limestone rocks places |
| 70 | *Globularia trichosantha* Fisch. & Mey. | 7230 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1100-1300 | Globulariaceae | 2 | H | Ir.-Tur. | NE | NE | P | 5 | | G | B | 60 | Se-S | A good ground cover plant. Flowering is contiuning long periyod and cluster. |
| 71 | *Gypsophila arrostii* Guss. var. *nebulosa* (Boiss. & Heldr.) Bark. | 7568 | Between Ilgın and Beyşehir road | Afforestation areas | 1000 | Caryophyllaceae | 4 | H | Ir.-Tur. | E | NE | P | 30 | 60 | G | P-W | 100 | R-Se | Flowering are contiuning long periyod. |

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| | | 7849 | Between Konya and Seydişehir road. (20 km from Konya) | Dry stone places | 1300 | | 2 | | | | | | | | | | | |
| | | 6638 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1250 | | 4 | | | | | | | | | | | |
| 72 | *Gypsophila curvifolia* Fenzl. | 7335 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky and slopy places | 2200-2700 | Caryophyllaceae | 2 | H | Uk | E | NE | P | 10 | 40 | G | P-W | 50 | Se | |
| 73 | *Gypsophila perfoliata* L. | 7558 | Between Ilgın and Beyşehir road ( 33 km from Ilgın) | Cultivated lands | 1000-1500 | Caryophyllaceae | 4 | H | Uk | NE | NE | P | 20 | 120 | G | W-P | 100 | Se-R | |
| 74 | *Hedera helix* L. | | Periphery of Gölcük Lake, between Isparta and Gölcük Lake roads (Isparta) | Edges of stream | 1350 | Araliaceae | 2 | Ch | Uk | NE | E | P | up to 3000 | | D G | Y | 100 | Se-S | The creeping, climbing and a good ground cover plant. It has woody stems. |
| 75 | *Hedysarum hedysaroides* (L.) Schinz & Thell. | 7236 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1100-1300 | Fabaceae | 4 | Ch | Uk | NE | NE | P | 12 | 30 | G | Va | 75 | R | Stems erect or ascending, arising from a woody rootstock |
| 76 | *Helichrysum chasmolycicum* P.H. Davis | 7838 | Aksu-Pınargözü picnic areas and Dedegül Mountain (Isparta) | Alpinic steppe | 2200-2400 | Asteraceae | 4 | Ch | Med. | E | E | P | 20 | 50 | G | Y | 75 | Se | A good ground cover on rocky places and densely grey-felted. Flowering is contiuning long periyod and showy |
| 77 | *Helichrysum compactum* Boiss. | 7363 | Dedegöl Mountain and Pınargözü picnic areas (Isparta) | Clearings in rocky | 2600-2800 | Asteraceae | 4 | Ch | Med. | E | E | P | 10 | 24 | G | Y | 75 | Se | A good ground cover on rocky places and white felted. Flowering is contiuning long periyod and showy |
| 78 | *Helichrysum heywoodianum* P.H. Davis | 7337 | Dedegöl Mountain and Pınargözü picnic areas (Isparta) | Rocky places | 2600-2800 | Asteraceae | 4 | Ch | Med. | E | E | P | 10 | 24 | G | Y | 75 | Se | A good ground covering on rocky places and dense glandular. Flowering is contiuning long |

periyod and showy

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| 79 | *Helichrysum plicatum* DC. subsp. *plicatum* | 7555 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Cultivated lands | 1650-1900 | Asteraceae | 2 | Ch | Med. | NE | E | P | 4 | 40 | G | Y | 75 | Se | Strongly glandular, woody branching horizantal caudices. Flowers are long periyod and showy |
| 80 | *Herniaria psidica* Brummitt | 7617 | Between Burdur and Tefenni roads. (15 km from Burdur) | Rocky places and abandoned fields | 800-1000 | Illecebreceae | 4 | H | Uk | E | E | P | 15 | 20 | G | Gr-Y | 30 | Se | A good ground covering on slopy places |
| 81 | *Inula anatolica* Boiss. | 7286 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | Asteraceae | 4 | H | MR | E | E | P | 10 | 20 | Gr | Y | 30 | Se | Flowers are a small, the flowering is contiuning long period during summer. Color of leaf is grey. It is growing on rocky places |
| 82 | *Ipomoea stolonifera* (Cyr.) J.F. Gmelin | | Periphery of Eğirdir Lake (Isparta) | Edges of stream | 900-1000 | Convolvulaceae | 1 | Ch | Med. | NE | D | P | 60 | 75 | G | W-C | 30-50 | Se-S | A good ground cover on edges of stream |
| 83 | *Ipomoea sagitata* Poiret | | Periphery of Eğirdir Lake (Isparta) | Edges of stream | 900-1000 | Convolvulaceae | 1 | Ch | Med. | NE | D | P | 65 | 75 | G | W-C | 30-50 | Se-S | A good ground cover on edges of stream |
| 84 | *Ipomoea purpurea* (L.) Roth | | Periphery of Atabey (Isparta) | Cultivated lands | 900-1000 | Convolvulaceae | 1 | Ch | Med. | NE | D | P | 65 | 75 | G | W-C | 30-50 | Se-S | A good ground cover and creeping plant. Cultivated plant |
| 85 | *Lagotis stolonifera* (C. Koch) Maxim | | Dedegül Mountain (Isparta) | Meadows places | 1800 | Scrophulariaceae | 4 | G | Ir.-Tur. | NE | E | P | 2 | 15 | G | B | 30 | Se-S | A good ground cover plant |
| 86 | *Lamium cymbalariifolium* Boiss. | 7652 | Barla Mountain (Isparta) | Blackpine forest and clearings | 1750-2000 | Lamiaceae | 2 | H | Med. | E | NE | P | 15 | 30 | G | B | 30 | Se | The flowers are very showy |

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| 87 | *Lathyrus tukhtensis* Czecz. | 7790 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Blackpine forest and clearings | 1700-1900 | Fabaceae | 2 | H | Uk | E | NE | P | 15 | 30 | G | B | 30 | Se | The flowers are very showy |
| 88 | *Lotononis genistoides* (Fenzl) Benth. | 6642 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1250 | Fabaceae | 2 | H | Ir.-Tur. | NE | NE | P | 15 | 30 | G | Y | 50 | Se-R | A good ground cover plant, prostrate, adpressed- hairy herbs |
| | | 7229 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1100-1300 | | | | | | | | | | | | | | A good ground cover plant, prostrate, adpressed- hairy herbs |
| 89 | *Lotus corniculatus* L. var. *alpinus* Ser. | 7684 | Aksu-Pınargözü picnic areas (Isparta) | Edges of stream and forest clearings | 1700 | Fabaceae | 2 | H | MR | NE | E | P | 0 | 20 | G | Y | 30 | Se-R | A good ground cover plant |
| 90 | *Lotus corniculatus* L. var. *tenuifolius* L. | 7245 | Periphery of Gölcük Lake | Steppe areas | 1100-1400 | Fabaceae | 2 | H | MR | NE | E | P | 0 | 20 | G | Y | 30 | Se-R | A good ground cover plant |
| 91 | *Lotus palustris* Willd. | 7272 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | Fabaceae | 2 | H | Uk | NE | E | P | 15 | 30 | G | Y | 30 | Se-R | A good ground cover plant on marshy places |
| | | 7154 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | | 4 | | | | | | | | | | | | |
| 92 | *Malva neglecta* Wallr. | | in the Campus of S.D.University (Isparta) | Cultivated lands | 1000-1300 | Malvaceae | 2 | H | MR | NE | E | P | 12 | 18 | G | W | 40 | Se | Rapid growing and a good ground cover plant |
| 93 | *Marrubium bourgaei* Boiss. subsp. *bourgaei* | 6753 | Periphery of Gölcük Lake (Isparta) | Eroded areas | 1300-1700 | Lamiaceae | 2 | H | Med. | E | E | P | 20 | 30 | Gr | W | 40 | Se | |
| 94 | *Marrubium globosum* Montbret & Aucher ex Bentham subsp. *micranthum* (Boiss. & Heldr. ) P.H. Davis | 8324- | Karatepe and Sidre hills (Isparta) | Clearings in forest | 1200 | Lamiaceae | 3 | H | Med. | E | E | P | 20 | 30 | Gr | W | 40 | Se | |
| | | 8362 | Sütçüler Sarıçiçek plateau (Isparta) | Clearings in forest | 2300 | | | | | | | | | | | | | | |

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| 95 | *Medıcago lupulina* L. | | Periphery of Gölcük Lake and Halıkent (Isparta) | Clearings in macquis | 1000-1100 | Fabaceae | 2 | H | Uk | NE | E | P | 15 | 60 | G | B | 30-60 | Se | Rapid growing and a good ground cover plant |
| 96 | *Medıcago sativa* L. subsp. *sativa* | | Periphery of Gölcük Lake (Isparta) | Picnic areas | 1403 | Fabaceae | 2 | H | MR | NE | E | P | 15 | 60 | G | B | 30-60 | Se | Rapidly and horizontal growing, a good ground cover plant |
| 97 | *Medicago* x *varia* Martyn. | | Periphery of Gölcük lake and old nursery garden locality (Isparta) | Clearing areas | 1440 | Fabaceae | 2 | H | Uk | NE | E | P | 15 | 75 | G | B | 30-80 | Se | Rapidly growing, a good ground cover plant |
| 98 | *Minuartia umbellulifera* (Boiss.) McNeill subsp. *umbellulifera* var. *umbellulifera* | 7066 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Clearings in rocky and forest | 1550-1600 | Caryophyllaceae | 2 | H | Uk | E | NE | P | 10 | 30 | G | W-Y | 30 | Se | Leaf is sharp and spiny |
| 99 | *Moltkia aurea* Boiss. | 7237 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1100-1300 | Boraginaceae | 2 | H | Ir.-Tur. | E | NE | P | 10 | 30 | G | Y | 30 | Se | Flowering is contiuning long periyod and imposing |
| | | 7263 | Between Isparta and Yalvaç roads (30 km from away Yalvaç) | Steppe | 1500-1700 | | | | | | | | | | | | | | |
| 100 | *Moltkia coerulea* (Willd.) Lehm. | | in the Campus of S.D.University (Isparta) | Clearing areas | 1100-1300 | Boraginaceae | 2 | H | Ir.-Tur. | NE | NE | P | 10 | 30 | G | B | 30 | Se | Flowering is contiuning long periyod and showy |
| 101 | *Nepeta plinux* P.H. Davis | 7104 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Lamiaceae | 2 | H | Med. | E | NE | P | 20 | 50 | Gr | W | 30-40 | Se | Growing on alpinic rocky places |
| 102 | *Omphalodes ripleyana* Davis | 8341 | Barla Mountain (Isparta) | Blackpine forest and clearings | 1800 | Boraginaceae | 4 | H | Med. | E | NE | P | 10 | 30 | G | B | 30-50 | Se | Flowering is contiuning long periyod and showy, growing on rocky places |
| | | 7763 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas | Rocky places | 2100-2400 | | 3 | | | | | | | | | | | | |

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| 103 | *Onobrychis caput-galli* (L.) Lam. | 7534 | Dere boğazı Locality (Isparta) | Rocky places | 1000-1100 | Fabaceae | 2 | H | Med. | NE | E | P | 5 | 40 | G | B-P | 30-60 | Se | Rapidly growing and contribute to nitrogen to soil, a good ground cover plant. |
| 104 | *Onobrychis pisidica* Boiss. | | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Afforestation areas | 1465 | Fabaceae | 3 | H | Ir.-Tur. | E | E | P | 30 | 60 | G | P | 30-60 | Se | Rapidly growing and contribute to nitrogen to soil, a good ground cover plant. |
| 105 | *Ononis sessilifolia* Bornm. | 7773 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas(Isparta) | Rocky places | 2100-2400 | Fabaceae | 5 | Ph | Ir.-Tur. | E | NE | P | 3 | 5 | G | Y | 20 | Se | Horizontal growing, semishrub |
| 106 | *Origanum minutiflorum* O. Schwarz & P.H. Davis | 8321 | Sütçüler - Müezzinler village | Clearings in forest and rocky areas | 800 | Lamiaceae | 2 | H | Med. | E | E | P | 15 | 40 | Gr | W | 40-60 | Se | |
| 107 | *Origanum vulgare* L. | | Barla Mountain (Isparta) | Clearings in forest and rocky areas | 1200 | Lamiaceae | 3 | H | Euro.-Sib. | NE | E | P | 15 | 70 | G | B | 40-60 | Se-S | Rapidly growing, a good ground cover plant |
| 108 | *Parnassia palustris* L. | 7292 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Clearings in forest and meadows areas | 1800-2300 | Parnassiaceae | 2 | H | Euro.-Sib. | NE | NE | P | 5 | 20 | G | W | 15 | Se-R | Flowers are showy. Leafs are rosette form. |
| | | 7683 | Aksu-Pınargözü picnic areas (Isparta) | Edges of stream and clearings in forests | 1700 | | | | | | | | | | | | | | |
| 109 | *Paronchia davisii* Chaudhri | 7107 | Top places of Dedegül Mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Illecebreceae | 2 | H | Med. | E | E | P | 3 | 8 | Gr | W | 30 | Se | Flowering is contiuning a long periyod and showy. Bracts cover leaves and similar to flower. A good ground cover plant |
| | | 7238 | in the Campus of S.D.University (Isparta) | Clearings in macquis | 1100-1300 | | | | | | | | | | | | | | |
| | | 7256 | Periphery of Gölcük Lake and Pürenova site (Isparta) | Alpinic steppe | 1600-1800 | | | | | | | | | | | | | | |

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| 110 | *Paronchia mughlaei* Chaudhri | 6878 | Between Konya and Beyşehir roads. (15 km from Beyşehir) | Cultivated lands | 1300 | Illecebreceae | 5 | H | Med. | E | E | P | 3 | 8 | Gr | W | 30 | Se | Flowering is contiuning a long periyod and showy. Bracts cover leaves and similar to flower. A good ground cover plant |
| | | 7772 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Rocky places | 2100-2400 | | 4 | | | | | | | | | | | | |
| 111 | *Paronchia chionaea* Boiss. | | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky places | 2600-2800 | Illecebreceae | 3 | H | Med. | E | E | P | 3 | 8 | Gr | W | 30 | Se | Flowers are long periyod and showy. Brachtes cover on leaf and similar to flower. A good ground cover plant |
| 112 | *Pelargonium endlicherianum* Fenzl | 6701 | Between Hadim and Çiçek village roads (Konya) | Cultivated lands | 1375 | Geraniaceae | 2 | G | MR | NE | NE | P | 10 | 30 | G | Pu | 30 | Se-R | Flowers are very beatiful. A good ground cover plant. |
| 113 | *Physalis alkekengi* L. | 8913 | Kovada çayı Arboretum Locality (Sütçüler) | Blackpine forest and clearings | 250 | Solanaceae | 3 | G | Uk | NE | NE | P | 10 | 30 | G | W | 50 | Se-R | Fruits are red and showy. |
| | | 8990 | Kirazlıdere site (Isparta) | Edges of forests | 1100 | | | | | | | | | | | | | | |
| | | 7606 | Between Isparta and Sütçüler roads (closeness to Ayvalı pınar) | Edges of forests | 1200 | | | | | | | | | | | | | | |
| 114 | *Plantago holosteum* Scop. | 7183 | Dedegül Mountains, Kızıldağ National Park (in black pine forests) | Meadows | 1700 | Plantaginaceae | 2 | H | Med. | NE | NE | P | 4 | 30 | G | W | 20-30 | Se | |
| 115 | *Potentilla reptans* L. | | Dedegül mountains | Meadows | 1200-1500 | Rosaceae | 2 | H | MR | NE | E | P | 10 | 30 | Gr | Y | 50 | Se-S | Flowers are very beatiful. Good growing on meadowy places |

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| 116 | *Potentilla kotschyana* Fenzl | 7131 | Top places of Dedegül mountain and periphery of Karagöl | Alpinic steppe | 2400-2800 | Rosaceae | 2 | H | Med. | NE | E | P | 10 | 40 | Gr | Y | 40 | Se | |
| 117 | *Primula veris* L. | | Aksu-Pınargözü picnic areas (Isparta) | Clearings in forest | 1500 | Primulaceae | 3 | H | Euro.-Sib. | NE | E | P | 10 | 40 | G | Y | 30-60 | Se | Flowering is contiuning long periyod and showy |
| 118 | *Primula elatior* (L.) Hill | | Periphery of Gölcük Lake (Isparta) | Clearings in forest | 1300 | Primulaceae | 3 | H | Euro.-Sib. | NE | E | P | 10 | 40 | G | Y | 30-60 | Se | Flowering is contiuning long periyod and showy |
| 119 | *Pterocephalus pinardii* Boiss. | 7765 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Rocky places | 2100-2400 | Dipsacaceae | 4 | H | Med. | E | NE | P | 1 | 5 | Gr | Va | 40 | Se | Flowering is contiuning long periyod and showy on alpinic rocky places. |
| 120 | *Ranunculus demissus* DC. var. *major* Boiss. | 7798 | Davraz mountain (Isparta) | Alpinic steppe | 2200 | Ranunculaceae | 4 | H | Uk | E | NE | P | 5 | 15 | G | Y | 20 | Se | Rapidly growing. |
| 121 | *Ranunculus repens* L. | | Kovada çayı Arboretum Locality (Sütçüler) | Meadows and swamp places | 1200 | Ranunculaceae | 2 | H | Uk | NE | E | P | 15 | 40 | G | Y | 20-50 | Se-S | Rapidly growing. |
| 122 | *Rosularia libanotica* (Lab.) Muirhead. | 7678 | Aksu and Dedegül Mountains, top of Kapiz stream (Isparta) | Rocky places | 2000 | Crassulaceae | 3 | H | Med. | NE | NE | P | 5 | 15 | G | W-P | 20 | Se | Flowers are showy. Leaves are succulent and forming rosette. A good ground covering on rocky places |
| 123 | *Salvia cadmica* Boiss. | 7195 | Dedegül Mountains, Kızıldağ National Park (in black pine forests) | Blackpine forest and clearings | 1500-1700 | Lamiaceae | 3 | H | Uk | E | NE | P | 10 | 35 | G | W | 50 | Se | |
| | | 7327 | Sultan Mountains, and between Akşehir (Konya) and Yalvaç | Rocky steppe | 2200-2700 | | | | | | | | | | | | | | |
| | | 8448 | Between Konya and Akşehir roads | Steppe | 1400 | | | | | | | | | | | | | | |

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| 124 | *Salvia tomentosa* Miller | 8357 | Sarıçiçek yaylası (Isparta) | Clearings in forest | 1200 | Lamiaceae | 2 | H | Med. | NE | E | P | 15 | 40 | Gr | B | 60 | Se | Rapidly growing, it looks showy, a good ground cover plants. Leafs are large form. |
| 125 | *Saponaria chlorifolia Kunza.* | 7273 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Quercus macquis | 1800-2300 | Caryophyllaceae | 2 | T | Uk | E | NE | A | 10 | 30 | Gr | P | 20 | Se | |
| | | 7660 | Barla Mountain (Isparta) | Rocky places | 1800-2000 | | | | | | | | | | | | | | |
| 126 | *Saponaria officinalis* L. | 7936 | Between Yeşilova(Burdur) and Denizli roads (Saldabeli site) | Rocky and slopy places | 1150 | Caryophyllaceae | 3 | H | Uk | NE | NE | P | 20 | 40 | Gr | Pu | 20-60 | Se-R | Flowers are showy. |
| | | | Kirazlıdere locality (Isparta) | | | | | | | | | | | | | | | | |
| 127 | *Saponaria pinetorum* Hedge | 7061 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Clearing areas | 1550-1600 | Caryophyllaceae | 2 | H | Med. | E | NE | P | 20 | 40 | Gr | Pu | 20-60 | Se | |
| 128 | *Saponaria pumilio* Boiss. | 7837 | Aksu-Pınargözü picnic areas (Isparta) | Alpinic steppe | 2200-2400 | Caryophyllaceae | 4 | Ch | Uk | NE | E | P | 5 | 20 | Gr | Pu-R | 40-60 | Se | Plants are mass formed. A good ground cover on alpinic meadows places |
| 129 | *Sarcopoterium spinosum* (L.) Spach. | 9045 | Termosus Natural Park (Antalya) | Macquis | 800 | Rosaceae | 2 | Ch | Med. | NE | E | P | 15 | 40 | G | W | 60 | Se | Spiny and cussion formed |
| 130 | *Scutellaria orientalis* L. | 8333- | Hacıaliler village (Devebeli site) | Clearing areas | 1400 | Lamiaceae | 2 | Ch | Ir.-Tur. | NE | E | P | 10 | 30 | Gr | Y | 30-60 | Se | A good, showy ground cover plants. |
| | | 9197 | Tota mountain (Sütçüler) | Rocky places | 1800 | | | | | | | | | | | | | | |
| | | 8456 | Between Konya and Akşehir roads | Steppe | 1400 | | | | | | | | | | | | | | |
| 131 | *Sedum acre* L. | | Periphery of Gölcük lake and old nursery garden locality (Isparta) | Rocky places in forest areas | 1200 | Crassulaceae | 2 | Ch | Uk | NE | NE | P | 5 | 12 | G | W | 20 | Se-R | Succulent plants. Resistant to drought. |

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| 132 | *Sedum album* L. | | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Rocky places in forest areas | 1550-1600 | Crassulaceae | 2 | Ch | Uk | NE | NE | P | 5 | 12 | G | W | 20 | Se-R | Succulent plants. Resistant to drought. |
| 133 | *Sedum hispanicum* L. var. *planifolium* Chamberlain | 7672 | Aksu and Dedegül mountaisn, top of Kapiz stream (Isparta) | Rocky places | 2000 | Crassulaceae | 5 | Ch | Ir.-Tur. | E | NE | P | 5 | 15 | G | W | 20 | Se-S | Succulent plants. Resistant to drought. |
| 134 | *Sedum lydium* Boiss. | 7331 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Rocky steppe | 2200-2700 | Crassulaceae | 2 | Ch | Med. | E | NE | P | 5 | 15 | G | W-R | 20 | Se | Succulent plants. Resistant to drought. |
| 135 | *Silene ruscifolia* (Hub.- Mor. & Reese) Hub.-Mor. | 6985 | Bahtiyar village (Yalvaç- Isparta) | Steppe | 800 | Caryophyllaceae | 5 | Ch | Ir.-Tur. | E | NE | P | 5 | 15 | G | W | 20-60 | Se | A good ground cover plants on volcanic and slopy places. |
| 136 | *Silene spergulifolia* (Desf. ) Bieb. | 6748 | Sultan Mountains - Between Akşehir (Konya) and Yalvaç (Isparta) | Eroded slopy areas | 1500-1800 | Caryophyllaceae | 1 | Ch | Ir.-Tur. | NE | E | P | 5 | 20 | Gr | C-G | 20-60 | Se | |
| 137 | *Silene cappodocica* Boiss. & Heldr. | 7700 | Beween Konya and Akseki road (Alacabel locality) | Rocky places | 1550 | Caryophyllaceae | 1 | Ch | Ir.-Tur. | NE | E | P | 5 | 20 | Gr | C-G | 20-60 | Se | |
| 138 | *Stachys lavandulifolia* Vahl var. *lavandulifolia* | 8319 | Between Isparta and Kesme road | Alpinic steppe | 1900 | Lamiaceae | 2 | H | Ir.-Tur. | NE | NE | P | 10 | 30 | Gr | B-Pu | 20-60 | Se | |
| 139 | *Telephium imperati* L. subsp. *orientale* (Boiss.) Nyman | 9158 | Karatepe and Sidre hills (Isparta) | Clearings in forest | 1300-1500 | Caryophyllaceae | 2 | H | Uk | NE | NE | P | 10 | 30 | G | W | 30-40 | Se | A good ground cover plant and rapidly growing, very much seed. |
| | | 7963 | Between Konya and Beyşehir road (20 km from Ilgın) | Steppe and slopy places | 1200 | | 2 | | | | | | | | | | | | |
| 140 | *Teucrium montanum* L. | 7098 | Top places of Dedegül Mountains and periphery of Karagöl | Alpinic steppe | 2400-2800 | Lamiaceae | 2 | H | Uk | NE | E | P | 5 | 10 | G | Y | 20-40 | Se | Horizontal growing, semishrub |
| | | 7190 | Dedegül Mountains, Kızıldağ National Park and Yaka | Blackpine forest and clearings | 1500-1700 | | | | | | | | | | | | | | |
| | | 7340 | Aksu-Pınargözü picnic areas (Isparta) | Rocky places | 2600-2800 | | | | | | | | | | | | | | |

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| 141 | *Teucrium chamaedrys* L. | 9176 | Karatepe and Sidre hills (Isparta) | Blackpine forest and clearings | 1200 | Lamiaceae | 2 | H | Med. | E | NE | P | 5 | 50 | G | O | 20-40 | Se-R | Having smell, showy and decorative semishrub ground cover plant. Flowering is contiuning long period. To resistant of the drought and mowing |
| | | 8375 | Sarıçiçek plateau (Isparta) | Blackpine forest and clearings | 1200-1400 | | | | | | | | | | | | | | |
| | | 8998 | Kirazlıdere locality (Isparta) | Clearings in forest | 1000-1200 | | | | | | | | | | | | | | |
| 142 | *Teucrium polium* L. | 8346 | Barla Mountain (Isparta) | Blackpine forest and clearings | 1500 | Lamiaceae | 1 | H | Uk | NE | E | P | 10 | 40 | Gr | W | 20-40 | Se- | Having smell, showy and decorative herbaceous ground cover plant. |
| | | 8929 | Kovada çayı Arboretum Locality (Eğirdir) | Blackpine forest and clearings | 250 | | | | | | | | | | | | | | |
| 143 | *Teucrium scordium* L. subsp. *scordioides* (Schreber) Maire & Petitmengin | 9132 | Between Afyon and Sandıklı road (Paşaköy and Şerban town) | Clearings in forest | 1200 | Lamiaceae | 2 | H | Euro.-Sib. | NE | E | P | 5 | 50 | Gr | B-P-Pu | 20-40 | Se-S | Having smell, showy and decorative herbaceous ground cover plant. |
| 144 | *Thlaspi papillosum* Boiss. | 7766 | Tota Plateau (Sütçüler) and Soğuksu forest recreation areas (Isparta) | Rocky places | 2100-2400 | Brassicaceae | 5 | H | Uk | E | E | P | 4 | 10 | G | W-Y | 30-50 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 145 | *Thymus samius* Ronniger & Rech. fil. | 7796 | Between Pazar and Ayvalıpınar village road (Aksu) | Blackpine forest and clearings | 1300-1500 | Lamiaceae | 4 | Ch | Med. | E | E | P | 5 | 15 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| | | 8359- | Sarıçiçek plateau (Isparta) | Blackpine forest and clearings | 1400-1800 - | | | | | | | | | | | | | | |
| | | 8449- | Between Konya and Beyşehir road | Steppe | 1400 | | | | | | | | | | | | | | |
| | | 9004- | Kirazlıdere locality (Isparta) | Edges of forests - | 1300- | | | | | | | | | | | | | | |

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| 146 | *Thymus zygioides* Griseb. var. *lycaonicus* (Celak) Ronniger | 8348 | Sarıçiçek plateau (Isparta) | Edges of stream | 1350 | Lamiaceae | 4 | Ch | Med. | E | E | P | 5 | 15 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 147 | *Thymus zygioides* Griseb. var. *zygioides* | 7193 | Dedegül Mountain, Kızıldağ National Park and Yaka (Isparta) | Blackpine forest and clearing | 1500-1700 | Lamiaceae | 2 | Ch | Med. | NE | E | P | 5 | 10 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 148 | *Thymus cilicicus* Boiss. & Bal. | 7676 | Aksu and Dedegül Mountain, top of Kapiz stream | Rocky places | 2000 | Lamiaceae | 4 | Ch | Med. | E | E | P | 5 | 15 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 149 | *Thymus leucostomus* Hausskn & Velen subsp. *leucostomus* | 8322 | Hacıaliler village (Isparta) | Cultivated lands- | 1350 | Lamiaceae | 3 | Ch | Ir.-Tur. | E | E | P | 5 | 15 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| | | 8353 | Sarıçiçek plateau (Isparta) | Edges of stream | 1350 | | | | | | | | | | | | | | |
| 150 | *Thymus longicaulis* C. Presl subsp. *longicaulis* var. *subisophyllus* (Borbas) Jalas | 8446 | Between Konya and Akşehir road (on Isparta road) | Steppe | 1400 | Lamiaceae | 3 | Ch | Uk | E | E | P | 5 | 15 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 151 | *Thymus sibthorpii* Bentham | 7143 | Top places of Dedegül Mountains and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Lamiaceae | 2 | Ch | Euro.-Sib. | NE | E | P | 10 | 40 | G | Pu | 40-60 | Se | Having smell, showy and decorative herbaceous ground cover plant. |
| 152 | *Tussilago farfara* L. | | Dedegül Mountains (Isparta) | Eroded slopy areas | 2000 | Asteraceae | 2 | G | Euro.-Sib. | NE | E | P | 5 | 15 | Gr | Y | 20-40 | Se-R | Leaves are large form. Rapid growing. A good ground cover plant at shadows places. |
| 153 | *Trifolium affine* C. Presl. | 7243 | -Isparta Ayazma üzeri. Sidre mevkii, | Clearings in macquis | 1200-1400 | Fabaceae | 3 | T | Uk | NE | NE | A | 5 | 30 | G | W-P | 10 | Se | |

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| | | | Periphery of Gölcük Lake and Halıkent (Isparta) | Clearings in macquis | 1200-1400 | | 2 | | | | | | | | | | | | |
| 154 | *Trifolium barbulatum* (Freyn. & Sint.) Zoh. | | Periphery of Gölcük Lake (Isparta) | Cultivated lands | 1080 | Fabaceae | 4 | T | Uk | E | NE | A | 20 | 60 | G | Y | 10 | Se | |
| 155 | *Trifolium campestre* Schreb. | 7244 | Ayazma and Sidre hill locality (Isparta) | Clearings in macquis | 1200-1400 | Fabaceae | 2 | T | Uk | NE | NE | A | 10 | 30 | G | Pu | 10 | Se | |
| | | | Periphery of Gölcük Lake and Halıkent (Isparta) | Clearings in macquis | 1200-1400 | | | | | | | | | | | | | | |
| 156 | *Trifolium hirtum* All. | | Periphery of Gölcük Lake and Halıkent (Isparta) | Clearings in macquis | 1400 | Fabaceae | 2 | T | Med. | NE | NE | A | 10 | 30 | G | Pu | 10 | Se | |
| 157 | *Trifolium repens* L. | | Atabey cultivated fields (Isparta) | Moistly cultivated areas | 950-1200 | Fabaceae | 2 | Ch | Uk | NE | E | P | 10 | 30 | G | Va | 20-70 | Se-S | Rapidly growing and a good ground cover plant. |
| | | | Dedegül Mountains (Isparta) | Edges of stream | 1200-1800 | | | | | | | | | | | | | | |
| 158 | *Trifolium hybridum* L. var. *anatolicum* (Boiss.) Boiss. | | Dedegül Mountains (Isparta) | Meadows | 1500-1800 | Fabaceae | 3 | Ch | Uk | NE | E | P | 5 | 50 | G | Va | 20-70 | Se- | Rapidly growing and a good ground cover plant. |
| 159 | *Trifolium fragiferum* L. | | Sultan Mountains (Isparta) | volcanica moistly slopy areas | 1350 | Fabaceae | 3 | Ch | Uk | NE | E | P | 5 | 30 | G | Va | 30-40 | Se-R | Rapidly growing and a good ground cover plants. But it is toxic plant |
| 160 | *Trifolium pratense* L. var. *pratense* | | Aksu-Pınargözü picnic areas (Isparta) | Meadows | 1500-1700 | Fabaceae | 3 | Ch | Uk | NE | E | P | 5 | 40 | G | Va | 30-40 | Se | Rapidly growing and a good ground cover plant. |
| 161 | *Trigonilla cretica* (L.) Boiss. | 6660 | Upwards of Military (Burdur) | Clearings in macquis | 800 | Fabaceae | 5 | Ch | Med. | E | NE | P | 10 | 25 | G | Y | 20 | Se | A good ground cover plant on eroded places. |
| 162 | *Tribolus terrestris* L. | | in the Campus of S.D.University (Isparta) | Cultivated lands | 1000 | Zygophyllaceae | 1 | T | Uk | NE | NE | A | 15 | 80 | G | Y | 80 | Se | Rapidly growing. Fruits are spiny. |

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| 163 | *Veronica bornmuellerii* Hausskn. | | Periphery of Gölcük Lake (Isparta) | Edges of stream | 1185 | Scrophulariaceae | 2 | Ch | Ir.-Tur. | NE | NE | P | 10 | 25 | Gr | B | 20-40 | Se | A good ground cover plant on meadows places. |
| 164 | *Veronica campylopoda* Boiss. | | Periphery of Gölcük Lake (Isparta) | Edges of stream | 1185 | Scrophulariaceae | 3 | T | Ir.-Tur. | NE | NE | A | 5 | 20 | Gr | B | 20-40 | Se | |
| 165 | *Veronica jacquinii* Baumg. | 7085 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 1700-1900 | Scrophulariaceae | 3 | Ch | Euro.-Sib. | NE | NE | P | 15 | 50 | Gr | B | 20-40 | Se | A good ground cover plant on meadows places. |
| | | 6948 | Dedegül Mountain, Kızıldağ Natural Park and Yaka (Isparta) | Blackpine forest and clearings | 1500 | | | | | | | | | | | | | | |
| 166 | *Veronica peduncularis* Bieb. | 6941 | Dedegül Mountains, Kızıldağ National Park and Yaka (Isparta) | Blackpine forest and clearings | 1500 | Scrophulariaceae | 5 | Ch | Euro.-Sib. | NE | NE | P | 6 | 30 | Gr | B | 20-40 | Se-R | A good ground cover plant |
| 167 | *Veronica serpyllifolia* L. | 7121 | Top places of Dedegül Mountain and periphery of Karagöl (Isparta) | Alpinic steppe | 2400-2800 | Scrophulariaceae | 2 | Ch | Uk | NE | NE | P | 3 | 10 | Gr | Va | 20-50 | Se-R | A good ground cover plant on meadows places. |
| 168 | *Vicia cracca* L. subsp. *cracca* | | Periphery of Gölcük Lake and Pilav hill (Isparta) | Moistly meadows | 1415 | Fabaceae | 2 | Ch | Euro.-Sib. | NE | NE | P | 40 | 120 | G | B | 100 | Se | Climbing and a good ground cover plant. |
| 169 | *Vicia freyniana* Bornm. | 7215 | Periphery of Gölcük lake and old nursery garden locality (Isparta) | Plain areas | 1200 -1410 | Fabaceae | 2 | Ch | Med. | E | E | P | 40 | 120 | G | B | 100 | Se | Climbing and a good ground cover plant. |
| | | 7850 | Between Isparta and Şarkikaraağaç road (Fele village locality) | Cultivated lands | 1300 | | 2 | | | | | | | | | | | | |
| | | 7257 | Periphery of Gölcük Lake and Pürenova locality | Alpinic steppe | 1600-1800 | | 4 | | | | | | | | | | | | |
| 170 | *Vicia sativa* L. subsp. *nigra* (L.) Ehrh. | 7055 | Periphery of Gölcük Lake and Pürenova locality (Isparta) | Blackpine forest and clearings | 1550-1600 | Fabaceae | 2 | Ch | Uk | NE | NE | P | 20 | 80 | D G | Va | 100 | Se | Climbing and a good ground cover plant. |

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| 171 | *Vincetoxicum canascens* (Willd) Derme subsp. *pedunculata* Browicz | 8912 | Kovada çayı Arboretum Locality (Sütçüler) | Blackpine forest and clearings | 250 | Asclepiadaceae | 3 | Ch | Med. | E | E | P | 20 | 80 | G | Y | 70-100 | Se | Horizontal growing. A good ground cover plant. But it is toxic plant. |
| | | 6759 | Periphery of Gölcük Lake (Isparta) | Blackpine forest and clearings | 1000 | | | | | | | | | | | | | | |
| 172 | *Viola gracilis* Sibth. & Sm. | 7141 | Top places of Dedegül Mountains and periphery of Karagöl | Alpinic steppe | 2400-2800 | Violaceae | 4 | Ch | Uk | NE | E | P | 5 | 25 | G | Y-Pu | 20 | Se | A good ground cover plant |
| 173 | *Viola odorata* L. | 8402 | Aksu-Pınargözü picnic areas (Yaka stream) (Isparta) | Rocky places | 2400-2800 | Violaceae | 4 | Ch | Uk | NE | E | P | 3 | 12 | G | Pu | 30 | Se-S | A good ground cover herboceous plant for shady places |
| 174 | *Vinca herbacea* Waldst. & Kit | | Dedegül Mountains | Pınargözü Locality | 1600 | Apocynaceae | 4 | Ch | Uk | NE | E | P | 10 | 40 | G | B | 20-40 | Se-S-R | Horizontal growing. A good ground cover plant |
| 175 | *Ziziphora clinopodioides* Lam. | 9131 | Between Afyon and Sandıklı road (Paşaköy-Şerban town) | Clearings in forest | 1200 | Lamiaceae | 2 | Ch | Uk | NE | E | P | 5 | 30 | G | B-Pu | 20-40 | Se | Having smell and a good ground cover plant. |