



BULBS, TUBERS AND WATER

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1. Foreword

In this seminar paper, we're going to talk about bulbs and tubers. We're also going to take a look at how much water they need, how they grow, what they need for growing and when and where to plant them.

2. Bulbs and tubers

General information

Many of our favorite flowering plants grow from bulbs—or tubers, rhizomes, or corms—rather than from seeds. Perennial plants that fall into these categories include tulips and daffodils (bulbs), peonies and dahlias (tubers), irises (rhizomes), and gladioli (corms).



Slika 1: Dahlias.

Bulbs and tubers store their nutrition underground and share an aversion to soggy ground (they are susceptible to rotting). Many gardeners treat them as accent plants because of their velvety, brilliantly colored flowers.

All bulbs and bulbous plants provide fabulous garden colour and are among the easiest plants to grow and look after. They are all swollen parts of roots or stems which, when planted, grow into a new plant.

There are two main planting times for bulbs which are summer and spring.

Before planting bulbs begins, it's always best to improve the soil first, by mixing an organic-rich compost with the soil, such as soil conditioner and enrich with plant food.

Planted bulbs look great in containers and dwarf varieties can even be grown in hanging baskets. They can also be planted in small pots, which can then be sunk in the ground or go for more ornate pots, that when in full flower is a great way of filling gaps in beds, borders and or adding colour to patios.

Different Types Of Flower Bulbs

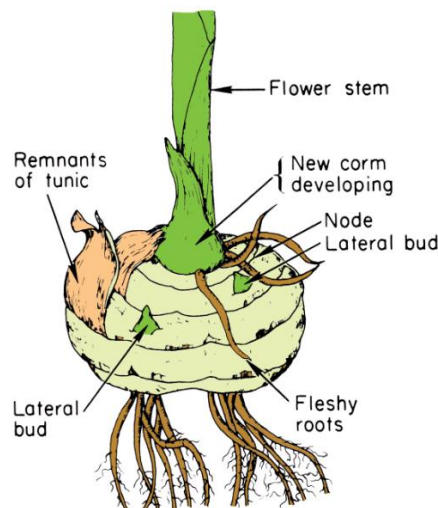
True Bulbs

There are two types of bulbs that come under true bulbs:

- Tunicate they have a tunic or papery skin covering
- Imbricate that does not have a skin covering

Corms

These are very similar in appearance to true bulbs, but when cut in two, you will see it is solid and does not have rings.



Slika 2: Structure of corms.

Tubers

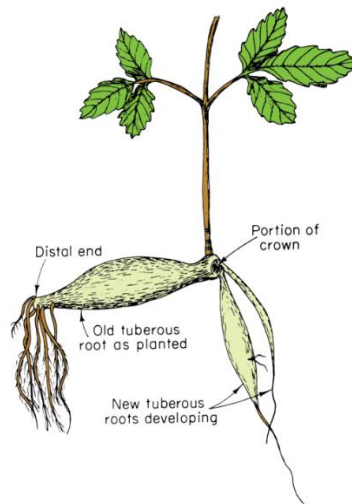
These are very common as potatoes start off life as a tuber, and you can recognize them as they have lots of growth nodes also known as eyes.



Slika 3: Dahlia tubers.

Tuberous Roots

These are modified, enlarged, specialized roots that store food, and are used up during the growing season, which is then replaced by new.



Slika 4: Tuberous roots.

Rhizomes

Very different looking from the other bulb types, as they are stems that grow sideways rather than up, which run along the surface of the soil or just below it.



Slika 5: Rhizomes.

How to take care of bulbs and tubers

Bulbs can be planted in containers or borders, and look particularly effective when naturalized in grass. There are bulbs, corms and tubers to suit all sites and soils.

Different species will require different growing conditions. As a rule, most will need a well-drained soil that won't sit waterlogged in winter which may cause them to rot.



Slika 6: Well-drained soil.

Always plant bulbs with the pointed growing tip facing upwards. If it isn't clear which is the top then try planting bulbs on their side. Some tuberous plants such as Begonias will be flatter than bulbs and don't have an obvious growing point. Position them just below the compost surface with the indented side facing upwards.



Slika 7: Begonias – planting.

Depth of planting

Bulb planting depths vary depending on their size and species; but as a rule of thumb, most bulbs can be planted at a depth of approximately 3 times their own height. Some tubers, such as Begonias, are best started off indoors or in a frost free greenhouse before transplanting outdoors. Full growing instructions can be found on individual product pages.



Slika 8: Planting depth of bulbs.

3. Plants with bulbs and tubers

Tulipa – Tulip; fam.: Liliaceae

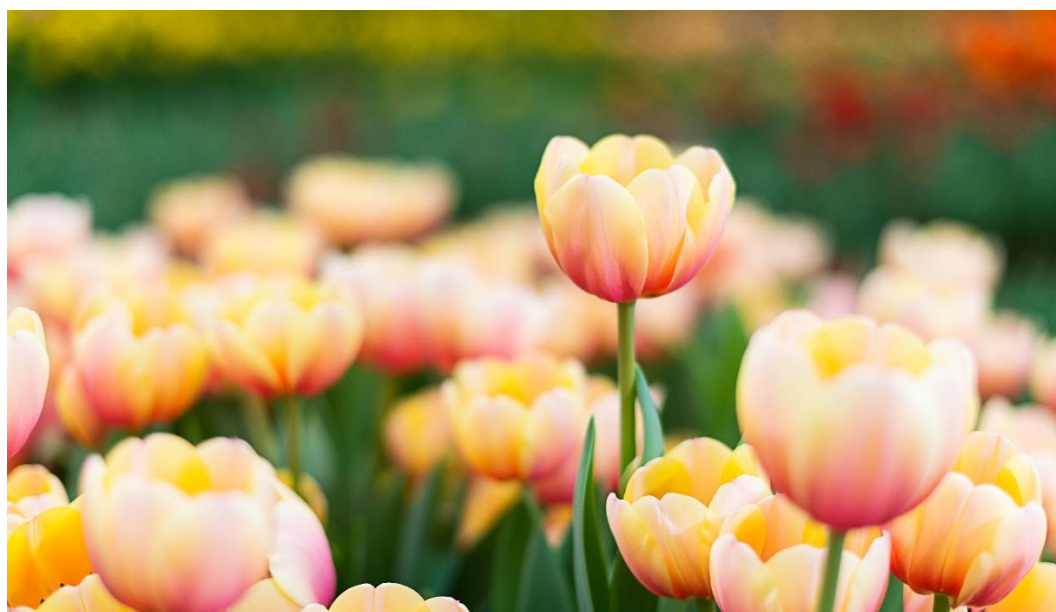
Tulips are one of the easiest flowers you can choose to grow. And since tulips are so brilliantly colored and bloom so early in the spring, that minimal work is well worth the while for the cheerful heralding of spring you get.

The flowers are usually large (depending on the species, tulip plants can be between 10 and 70 cm high), showy and brightly colored, generally red, pink, yellow, or white (usually in warm colors). They often have a different colored blotch at the base of the tepals (petals and sepals, collectively), internally. In structure, the flower is generally cup or star shaped. Tulip stems have few leaves. Larger species tend to have multiple leaves. Plants typically have two to six leaves, some species up to 12.

Tulips can be propagated through bulb offsets, seeds or micro propagation.

Water requirements

One easy mistake that can jeopardize your bulbs, however, is improper watering. Tulip plant watering is all about minimalism. Tulips require very little water and can easily rot or sprout fungus if they're left in standing water. When you plant your bulbs, put them in very well drained, preferably dry or sandy soil. After you've planted your bulbs, water them once thoroughly. The bulbs need water to wake up and start growing. After this, leave them alone. Tulip watering needs are basically nonexistent beyond the occasional rain. If you have an irrigation system in your garden, make sure to keep it well away from your tulips.



Slika 9: Tulips.

Agapanthus – agapanthus; fam.: Liliaceae

Agapanthus is a genus of herbaceous perennials that mostly bloom in summer. The leaves are basal, curved, and linear, growing up to 60 cm long. They are rather leathery and arranged in two opposite rows. The plant has a mostly underground stem called a rhizome that is used as a storage organ. The roots, which grow out of the rhizome, are white, thick and fleshy.

The Agapanthus needs at least 6 hours of sunlight per day, except in the desert Southwest and other areas with ultra-hot summers. Whether you'll be planting divisions you've just created or a brand-new Agapanthus from the nursery, careful soil preparation sets the plant up for success.

The plants are easy to propagate by division if you have a mature plant, or you can plant agapanthus seed pods.

Water requirements

Agapanthus needs well-draining soil. Too much moisture around the roots almost guarantees rot. But, there is a fine balance between too much water and not enough. Water when the top few inches of soil is dry, typically once a week is adequate.



Slika 10: Agapanthus.

Crocus vernus – Crocus; fam.: Iridaceae

Crocus vernus is a species in Family Iridaceae, native to the Alps, the Pyrenees, and the Balkans.

Crocus flowers appear from March to April in a wide range of colors, from white to yellow and shades of purple, with solid and striped varieties. The bulbs grow best in well-drained, sandy loam but tolerate many soil types. They prefer a sunny location but will tolerate partial shade. The flowers will not open in full shade.

Crocus bulbs must be dug up for division when they have gone dormant after the first frost in the fall.

Water requirements

Crocuses are not usually picky about soil type, but prefer medium, well-draining soil. Water deeply right after planting the crocus corms. This will give the corm the moisture it needs to start growing roots and will help settle the soil in the planting hole. Crocuses develop deep roots systems, which means they do not need water year-round. They usually bloom during rainy seasons and require no supplemental water. For those times during the bloom period that the soil dries around the plant and no rain is in sight, water to a depth of about 2cm.



Slika 11: *Crocus vernus*.

Dahlia – dahlia; fam.: Compositae

The dahlia is an easy to grow bulb flower. It is a very vigorous flower that will not fail you. Dahlias are known for their wide variety of colours: pink, yellow, white, red, orange... only blue is absent from the dahlia's colour palette. There are 42 species of dahlia, with hybrids commonly grown as garden plants.

Dahlias are perennial plants with tuberous roots, though they are grown as annuals in some regions with cold winters. While some have herbaceous stems, others have stems which lignify in the absence of secondary tissue and resprout following winter dormancy, allowing further seasons of growth.

The stems are leafy, ranging in height from as low as 30 cm to more than 1.8–2.4 m. The majority of species do not produce scented flowers. Like most plants that do not attract insects through scent, they are brightly colored, displaying most hues, with the exception of blue.

Water requirements

When considering dahlia watering, needs can vary greatly depending upon the growing conditions. Once the tuber has started to grow, consistent dahlia plant irrigation is required in order to promote lush growth and prolific bloom period. For many, this means watering dahlia plants one to three times each week. When watering dahlia plants, always make sure to avoid wetting the plant foliage. This will help to decrease the likelihood of disease.



Slika 12: Dahlias.

Gladiolus – gladiolus; fam.: Iridaceae

Gladiolus is a classic perennial known for its tall flower spikes and large, colorful blooms. A great cutting flower, gladioli look spectacular in summer bouquets.

There are over 250 different species of gladiolus plants, all of which originate in Central Africa, South Africa, and Eurasia. The flowers can grow in a variety of shapes that range in size from about two and a half inches to more than five. The flowers will only grow on one side of the stem, and they tend to have the largest flower at the base. The flowers on the bottom of the plant will typically open first, and it is not uncommon for hummingbirds to enjoy this flower.

Well-drained soil is going to be best for this plant; in fact, sandy soil is preferred by some gardeners. They tend to grow best in full sun.

Water requirements

Gladiolus plants like moist soil, which means that they should get at least an inch of water a week. To help maintain moisture in the soil, you can place two to three inches of mulch at the base of the plant.



Slika 13: Gladiolus.

Hyacinthus orientalis – hyacinthus; fam.: Liliaceae

Hyacinths are spring-flowering bulbs with long, narrow leaves that are folded lengthwise. Hyacinths are highly fragrant flowers that bloom in dense clusters.

Hyacinth is the common name for approximately 30 perennial flowering plants of the genus *Hyacinthus* (order Liliales, family Liliaceae) of the Mediterranean region and Africa. The common Hyacinth (*Hyacinthus Orientalis*), whose flowers open fully and look like little starfishes, should not be confused with the common grape Hyacinth flowers.

Hyacinths are highly fragrant, bell-shaped flowers with reflexed petals. The waxy, densely-packed florets come in shades of white, peach, orange, salmon, yellow, pink, red, purple, lavender and blue.

The 7-8 leaves of the hyacinth are fleshy, glossy green and strap shaped. The Hyacinth bulb is a light purple or cream in color and are covered with dry, papery, skin-like layers.

Water requirements

Water hyacinths right after planting their bulbs, which typically occurs in the fall. You do not need to water your hyacinth again until late winter or early spring when they begin actively growing. Water hyacinths in late winter, spring and early summer while they are actively growing. Water only when rain is scarce and the soil feels dry. Reduce watering in the summer after the foliage dies back. Water sparingly during this time and through fall, watering only when rain is lacking.



Slika 14: *Hyacinthus orientalis*.

Iris – iris; fam.: Iridaceae

Iris is a genus of 260–300 species of flowering plants with showy flowers. Irises are hardy plants (able to survive outside during winter) that are easy to grow. They attract butterflies and hummingbirds. Irises are a favorite cut flower.

Irises have three large petals on the outside called "falls". They have three inner petals called "standards". Irises that are called bearded are because of soft hairs growing in the center. Irises that are called combed have a ridge of hairs in the center.

Plant irises in late summer to early fall, when nighttime temperatures remain between 40 and 50 degrees Fahrenheit or above. This gives them plenty of time to get established before the coming winter. Taller irises may need staking or they will fall over. For winter protection, cover the rhizomes with 1cm of sand topped with a light layer of evergreen boughs

Water requirements

Do not overwater irises; too much moisture in the soil can cause the rhizomes (roots) to rot. Water consistently and deeply, especially during summer drought.



Slika 15: Iris.

Narcissus – daffodil; fam.: Amaryllidaceae

Narcissus is very distinctive, with its long, narrow tubular stem, its central crown and its three petals and perianth, or petal-shaped sepals. The Narcissus flower is usually yellow or white and sometimes the cup can be a different colour from the crown.

The genus of Narcissus has many different species and varieties, as well as many hybrids that have been cultivated. The most popular Narcissus plants widely available are the Paper Whites, Daffodils and Jonquils.

Narcissus plants do not need much care and attention. However, when they have finished flowering they should be dead-headed in order to encourage good seed production within the bulb. The bulbs need to be planted between August and November, although August is the best time. They should be placed at a depth that is equal to the height of the bulb multiplied by three.

Water requirements

Water the bulbs well at planting time — one to two good soakings. In mild-winter climates with rainy winters, plant the bulbs just before the rainy season begins, and hold off watering before the rains start. Moisture prompts the bulbs to send out roots, which could lead to fungal infection while the soil is still warm. Once the weather cools, the fungus is no longer active in the soil.



Slika 16: Narcissus.

Conclusion

Bulb is a term given to plants that have fleshy underground storage structures, but only some of the plants commonly called bulbs are actually true bulbs. Tubers are also bulbs by this definition, but they are not true bulbs. A true bulb and a tuber are different in appearance and in how they grow. However, they serve the same function, which is to store food and energy that helps plants survive during the winter or dry months.

Their water requirements vary from one sort to another. Some need water through all year around and for some the rain can be enough for their growth.



Slika 17: Gardening.

Sources

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