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AMORPHOPHALLUS KONJAC AND ITS HEALING PROPERTIES

Fayzullayev Jahongir Shavkat o'g'li
3rd Year Student of the Faculty of Industrial Pharmacy,
Tashkent Pharmaceutical Institute
Email:jahongirfayz.farm@gmail.com

Annotation
This article is devoted to amorphophallus and its worldwide distribution, as well as its characteristics.

Keywords: inflorescence, amorphophallus, female flower, pollination.

Introduction

Amorphophallus titanic has the largest inflorescence in the world, which can reach a height of 2.5 m and a width of 1.5 m. In second place is Amorphophallus gigas, which is taller but has a slightly smaller flower.
Many botanists believe that the flower of amorphophallus titanic has the most unpleasant smell among all plants - a mixture of rotten eggs and fish. The peculiarity of this tropical flower is that it smells only when it is touched.

Spreading

Amorphophallus is a typical plain plant that grows in tropical and subtropical zones, from West Africa to the Pacific Islands: tropical and southern Africa, Madagascar, China, Japan, Taiwan, India, Bangladesh, Nepal, Sri Lanka, Andaman Islands, Laos, Cambodia, Myanmar, Nicobar Islands, Thailand, Vietnam, Borneo, Java, Moluccas, Philippines, Malaysia, Sulawesi, Sumatra, New Guinea, Lesser Sunda Islands, Fiji, Samoa, and in Australia: Northern Territory, Queensland.
Most species of amorphophallus are endemic. They grow mainly in disturbed areas, such as secondary forests, but also on rocks (on limestone soil) and in wasty places.

Biological Description

These plants come in different sizes - from small to giant. They grow from underground tubers the size of a grapefruit and weighing about 5 kg, some from rhizomes or stolons. These plants have a dormant period, some of them are evergreen herbs.

Leaves

From the upper part of the tuber grows a single leaf (occasionally two or three), which can reach several meters in width. The leaf lasts one growing season, each year it grows slightly higher and becomes more dissected than in the previous year. Petioles are long, smooth, occasionally rough, sometimes very thick, sometimes with very noticeable spots and speckles. The vagina is very short. The leaf blade is tripartite. The primary segments are pinnatisected, doubly pinnatisected, or dichotomously dissected; secondary and tertiary subdivisions are pinnatisected and pinnatipartite. Terminal leaflets oblong-oval to linear, pointed, descending. The primary lateral veins of the final leaflets are pinnate, merging into a common marginal vein. Higher-order veins create a reticulate pattern.

Inflorescences and Flowers

The inflorescence of amorphophallus develops after the next dormant period until the appearance of a new leaf and is always single. Flowering lasts about 2 weeks and stops even before the appearance of new roots. During this time, the size of the Amorphophallus tuber is significantly reduced due to the high consumption of nutrients necessary for the formation of an inflorescence. Pedicel very short to long, petiole-like. The inflorescence consists of an elongated or oval cob and a "spread". The spathe may or may not be drooping, barely folded and oval, or differentiated into a tube and pastin, sometimes with a constriction between them; the tube can be bell-shaped to cylindrical, smooth or longitudinally corrugated inside, covered at the base with dense scales or irregularities like hairs that serve as traps for insects, or smooth; the plate of the bedspread is from vertical to open, smooth, ribbed or wavy in various ways, decorated with frills along the edge.

The cob is shorter or much longer than the bedspread. Plants are monoecious. The female zone is shorter, equal or longer than the male zone. The male zone is cylindrical, ellipsoid, conical or obverse-conical, usually adjacent to the female, sometimes separated by a sterile zone, which may be smooth or consist of prismatic, hemispherical or bristle-like sterile flowers. At the end of the cob there is usually a sterile appendage, sometimes absent or reduced to the size of a stump, vertical, sometimes horizontal, occasionally hanging down, very variable in shape, usually more or less conical or cylindrical, occasionally more or less spherical, sometimes stalked or narrowed at the base, usually smooth or composed of staminate structures at the base or completely covered with staminodes, sometimes wrinkled, occasionally pubescent, sometimes strongly and unevenly flattened.

Flowers monoecious, without perianth. Male flower: 1-6 stamens, free or fused at the flowers located at the base of the cob, or all of them, short; threads are missing or not; the binder is quite thick; thecae are obviate or oblong, located opposite each other, burst with apical (occasionally lateral) pores or a transverse incision. Pollen in pollinia, mostly ellipsoid to oblong-ellipsoid, sometimes spherical or hemispherical, medium to large (53 μm); exine striated, striated-reticulate, with tubercles or spines.

Female Flower

Gynoecium usually cramped, sometimes more or less spaced; ovary from hemispherical to ovoid or obovate, one-four-locular; in the nest, one anatropic ovule; funiculus very short to prominent vertical; placenta from axial to basal; style absent, short to very long, conical to cylindrical; stigma of various shapes, or spherical, or 2-4-lobed, star-shaped or occasionally punctate, sometimes large and brightly colored.

Pollination

As soon as the cob opens, pollination should occur on the same day. The inflorescence often emits the smell of decaying flesh to attract insects, however, there are some species of Amorphophallus that give off a pleasant smell. Caught in clever traps, insects are inside the cob in order to save the pollen they brought for female flowers. The female flowers remain open for only one day, while the male flowers remain closed. They open the next day, when the female flowers are no longer receptive, to avoid self-pollination. The male flowers drop their pollen on the insects they catch, after which the insects are released, and can pollinate another flower. Amorphophalluses are used as food by some Lepidoptera larvae.

Practical Use

Amorphophallus tubers are widely used in traditional Japanese cuisine to make soups or add to stews. They are also used to make noodle flour and a gelatin-like substance, which is then used to make special. In medicine, amorphophallus tubers are used as a raw material for the manufacture of diabetic products.

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