

AZARIUS SEED PACK

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Ephedra sinica (Ephedraceae)

The Ephedra plant belongs to the gnetum family (gnetaceae). It is an erect, broom-like shrub, 60 cm (2 ft) high. The leafless stems are pale green when young and olive brown with age. Male and female flowers are found on separate plants. The seeds are a smooth brown color and paired.

Ephedra is common on slopes and hills, mostly below 1500 m (4,500 ft) elevation. It is native to Mohave and Colorado deserts, east to Utah, Arizona and New Mexico.

Cultivation and Propagation

The Ephedra is robust and doesn't need much attention. Plant the seeds around 20°C (68°F). Grow indoors or in a warm and dry climate, free of frost. It thrives in ordinary loamy soil and does very well in a loose rocky soil with full sun and a little water. It is most often propagated by division of the clumps in spring, and seeds sown in a light sandy soil in early spring. It makes an excellent ground cover on rocky slopes.

Harvesting

The tops of the branches may be picked and dried at any time as long as the plant is not denuded or the branches cut back past the viable buds.

Hawaiian Baby Woodrose (*Argyrea nervosa*)

The Hawaiian Baby Woodrose belongs to the Morning glory family (Convolvulaceae). It is a large perennial climbing vine with heart-shaped leaves, backed with silvery hairs. The flowers are 5-8 cm (2 to 3") long and rose colored. Pods dry to a smooth, dark brown, filbert-sized capsule containing 1 to 4 furry brown seeds. The plant is native to Asia; naturalized and cultivated in Hawaii.

Cultivation and Propagation

The seed may be sprouted by making a small nick in the seed coat away from the germ eye.

Soak the seed until it swells. Plant 1cm (0.5") deep in loose rich soil. Do not use bottom heat. After the cotyledons appear, water sparingly, letting the soil surface dry out to a depth of 1cm (0.5"). Overwatering causes stem and root rot. The plant grows slowly until it develops a half-dozen leaves; after this it grows quickly. In its first year this plant grows into a small bush 30 to 60 cm (1 to 2 ft) tall. During this time it may be grown in a large pot and kept indoors in winter. The next spring it will grow into a very large vine and should produce flowers and seeds. In this second year it should be planted out, or grown in a tub. In cold winter areas the roots should be lifted and stored or the tub kept in a cool place until spring. Alkaloid content of the seeds can be altered by experimenting with the soil chemistry and the use of hormones.

Harvesting

The seed pods should be harvested when thoroughly dry. They should be stored in a cool, dry place. Their potency may begin to decrease after 6-9 months.

Morning glory (*Ipomoea violacea*)

The morning glory is a perennial twining vine, growing from 3 to 6 m (10 to 20 ft) high, with heartshaped leaves to 12 cm (5") long. The flowers are funnel-shaped, purplish blue with a white tube.

Native to tropical America, there are many varieties with illustrious names like: heavenly blue, pearly gates, flying saucers, wedding bells, blue star and summer skies.

Cultivation and propagation

Although this species is a perennial it is usually cultivated as an annual. Morning glories thrive in a strong, well-drained soil in a sunny site with plenty of water, but they will do well almost anywhere.

The seeds have a hard seed coat and should be nicked or soaked 2 hours in warm water before sowing. If the seeds are nicked or soaked, the vines will generally flower 6 weeks after sowing. The seeds should be planted 1/2 -1cm (1/4-1/2") deep and not less than 15 cm (6") apart. This species tends to run vine unless the roots are cramped. This may be done by standing the vines in pots and allowing them to become slightly pot bound before setting them out. Although morning glories like a lot of water, if the roots are kept damp constantly, the vines will produce few flowers and they will set very little seed. Various methods have been devised to increase the alkaloid content of the seeds by altering the soil chemistry and using hormones.

Harvesting

The seeds may be gathered as the pods become brown and dry. Immature seeds are bitterer than ripe ones. It has been reported that immature seeds contain more alkaloids, but this has not been confirmed.

Reed Canary grass (*Phalaris arundinacea*)

Reed grass or Reed Canary grass (*Phalaris Arundinacea*) is a perennial plant growing to a height of 1.5m with a spread of 0.5 m. The leaves are long, flat, 2cm wide and reed-like, the flowers are pale green or purplish, occurring in terminal panicles and appearing in summer. A native of Europe and North America, it prefers moist, wet soils in marshes or at the edges of ponds and river banks, and is frost resistant but drought tender. Propagation is by seed or division. Plants are self sterile and need at least two plants grown from different seed to pollinate. The pharmacology of *Phalaris arundinacea* varies greatly. It contains many indole alkaloids such as DMT, MMT, 5-MeO-DMT and gramine. Gramine is quite toxic and may be responsible for most of the toxic effects possible from *Phalaris* ingestion. All *phalaris* species can be induced to produce more alkaloids by stressing them. Stress can be in the form of clipping, shading or lack of water and should be applied for one to two weeks before taking samples.

Cultivation

Sow the seeds of the *Phalaris arundinacea* (indoors) in early spring just below the surface in moist soil. As for germination: the colder the better (a grown *Phalaris arundinacea* dislikes extreme heat as well). Just like all wild grasses, the seed will germinate irregularly, so do not be disappointed if not all seeds are germinating at once. Move the young grass outside to a spot with a more sandy soil where it can get full sun. After about a month your grass starts developing firm rhizomes that will produce new sprouts as well, seeking for daylight.

The *Phalaris arundinacea* can grow up to a height around and about 2 meters. The straight stems with the 2 cm wide and flat leaves of this plant look a lot like normal grass species, only recognizable by its hairless 'little tongue'. The plant grows near moist, fertile soil next to rivers, aside ditches and in swamp forests. The *Phalaris arundinacea* flowers in June and July with plumes that vary from light green till purple.

Opium poppy (*Papaver somniferum*)

The opium poppy (*Papaver somniferum*) is the source of opium and its chemical derivatives morphine and heroine. In the United States and Europe, poppy seeds are perfectly legal. This is because poppy seeds do not actually contain any of the alkaloids that are present in the fully-grown poppy plant, like morphine, codeine, papaverine, and thebaine. Opium poppy seeds are also the same seeds used on poppy seed bagels. The opium poppy grows to a height of around 1 meter. It is a hardy annual, sprouting in autumn or spring, flowering in summer and shedding its seeds again in autumn. Its flowers range in color from white to purple and any shade of red or pink in between. It is native to South-East Europe and Western Asia, but has spread throughout Europe and Asia, where it grows in cultivation and in a wild state, often as a weed. It has been introduced to most of the rest of the world, including North and South America.

Growing from Seed

Papaver somniferum is quite an easy plant to grow. Ideally it should be planted in a fertilized garden bed with good drainage, but it will also grow in pots if given enough room for its roots. Seeds can be sown any time between September and April. If winter frosts are the norm in your area, don't sow them until the very end of winter, or the beginning of spring, as seedlings from autumn or winter plantings may be killed by subsequent frosts. Scatter the seeds and cover with a very fine layer of earth. Water well until germination, keeping the earth moist. The seeds will germinate in about a week. Water very sparingly at first to prevent rot. When they develop their small, lettuce-like leaves, begin watering freely again, and apply fertilizer every few waterings. Do not worry if they fall over, this is normal.

Poppies need space to grow, ideally about 30cm apart, but they will thrive on less if well fertilized.

Thin the plants out so they have at least 15 cm between each plant. Either simply remove all of the smallest plants, or if you wish to conserve your seedlings, carefully transplant them.

The Flower Bud

Soon, the flower bud will appear. The tip of the stalk will be bent over with the weight of the bud. It will straighten and grow. In Laos, the buds are removed, and four, six or eight buds grow to replace it. Keep watering and fertilizing well, until flowering begins. As soon as the petals appear, stop watering, and do not water unless the plants are wilting. Poppies will flower for a fortnight or more.

Then, their petals will drop, and slowly, their pods will begin to swell and ripen. They will begin to turn yellow, until eventually they are dry and yellow like straw.

Collecting Seeds

Poppies produce seeds prolifically, over 1000 seeds in each pod. To collect seeds for a further crop, wait until the pods are dry like straw, and simply remove the pods and shake out the seeds onto paper, or break the pods open and shake the seeds free. Poppy seeds can be sown immediately, or kept almost indefinitely in the fridge.

San Pedro (*T. pachanoi*)

The San Pedro is a large columnar cactus that can grow up to 6 meters in height and contains mescaline. The San Pedro cactus has also been found to have other psychoactive alkaloids. The mescaline concentrations are the highest in the skin, which can be peeled. When this skin is dried and grinded, a powder is yielded that can be consumed. More traditional native preparation of the San Pedro cactus is somewhat different. Slices of the stem are boiled for a few hours. The liquid made by this process has been drunk in Peru for over 3000 years.

Instructions:

For cultivating San Pedros make sure you collect the following necessities:

- Grow container with lid
- Potting Soil (50%)
- Coarse Sand (20%)
- Gravel (20%)
- Perlite (10%)
- Seeds of San Pedro (*Trichocereus pachanoi*)

First Setup

The first step in growing your own San Pedro is to make small drainage holes in the container where you will be growing in. This is necessary because overwatering can cause rotting of the roots of your cacti.

The next step is to mix together the soil with the sand, perlite and gravel. First divide the gravel in half and put one half on the bottom of the growing container so its just covered. It's a good idea to first sterilize the mixture, as there might live some bacteria that will eat the mixture's useful minerals too. To do this use an oven at 150-180 °C for about an hour (make sure you use an oven proof dish and not the growin container, this will melt) or you can use the microwave at a low setting for about 30 minutes.

Now when mixed together you can make it moist. A good way to determine if the soil is moist enough is to squeeze it in your hand. If there is no water emerging from the soil yet it is perfect, if it is a bit too moist, just add some more soil so don't put it all together at once. Once it's perfect you can fill the container with this mixture.

Seeding

We are now ready to start the seeding. The seeds should be put on the soil and can be pressed very gently into the ground with a pencil. Make sure they are not too deep, about 1.5 – 2 times their height is ideal. Now spray a couple times with water over the soil and close the lid on the box.

Temperature

The best temperature for the germination of San Pedro seeds is a temperature between 20 to 30 °C, ideally around 23 °C. To acquire such a temperature you could place it next to a heater or use an electric blanket to keep them warm. Always be careful when placing the growbox directly on a heater because it may dry out and your seeds will not germinate. Some people use a heating element for an aquarium or terrarium to acquire the perfect temperature. Of course this is not necessary but it will improve and speed up the process of germination.

Humidity

While germinating the San Pedro seeds, it's best to keep the humidity high. In this period the soil should also be kept moist. After a while the cacti are mature enough to get used to a very dry environment. To let the young cacti adapt from their humid environment to dry conditions, we start to make holes in the lid of the container to slowly bring down the humidity in the growbox. After a few weeks you can completely remove the lid, but still keep the soil moist for about two months.

Lighting

While your San Pedro seeds are germinating it is important to not put the container in contact with full sunlight. Use fluorescent tube lighting or compact fluorescent lighting (CLS) for 16-18 hours a day. When the cacti are a bit stronger and older (2-3 months) you can slowly let them get used to the indirect sunlight. If they are around 1 year old they can be placed in direct sunlight. After this we can start treating the cacti like adult species and give them less and less water. Make sure that the soil completely dries out before watering the cacti, to simulate dry growing conditions. If the cacti are about one year old (or 1-2 cm in diameter) you can start thinking about repotting them. Always keep in mind that a bigger pot is not always best. Try to get a pot that has about 4 times the diameter of the cactus. Changing pots will give you the opportunity to give the cactus more nutrients in the new soil.

Taking care of your San Pedros

Cacti are used to dry conditions and therefore should never be given too much water. The best time to water the San Pedro cactus is in spring and you can keep watering them until autumn. Especially when kept outdoors you should never water them too much in winter because the cold combined with the water will damage the San Pedro cactus. It is best to give them only a little water in the winter to prevent it from completely drying out.

San Pedro cacti are growing actively in the period from spring to fall. In this period they need the most water and nutrients. For nutrients it's best to use

special cacti nutrients and always be very careful not to give them too much. Good cacti nutrition is always low in nitrogen and high in potassium and phosphorus. These are indicated by numbers at the label of the bottle in a NPK value. A good NPK value for cacti would be 4-7-7 or even 2-7-7.

A good way to water is to “bottom” water them. Just put your San Pedro with pot in the sink with a small amount of water for a short while. The “bottom” watering method will assure strong roots because the roots have to reach out for the water. Although this is a good way to water them, you should occasionally water them also from above.

It is very important to know that the San Pedro cactus is best kept in winter at a temperature of 5-10 °C (it can also be kept at room temperature, but preferably colder). Also make sure it will get enough light.

We hope you will enjoy growing your own San Pedro Cactus, it is one of the fastest growing cacti in the world. It could grow up to half a meter a year under ideal conditions. If you want to know more about cacti (cultivation) there are some interesting books available in several (online) shops :

- San Pedro and related Trichocereus Species, by Trout
- Cultivation and propagation of cacti, by Trout