

# CARNIVOROUS CREATIONS



## Planting, Care, Variety, and Garden information

### Carnivorous Creations™

Now you can create your own authentic miniature bog garden with DuneCraft's "Carnivorous Creations" Deluxe Edition Carnivorous Plant Seed and Growing Dome kit. All necessary ingredients are included to allow you to establish a diversified collection of the most popular Carnivorous plants that include sparkling Sundews, dreaded Pitcher Plants, and the fearsome Venus Fly Trap.

We have provided you with a spacious terrarium to maintain the proper atmosphere for seedlings and young plants, the right planting mixture for sprouting seeds, a generous bag of Blue Swamp Rocks for an attractive décor. And of course, comprehensive instructions to guide you through the process of actually germinating and raising plants to fulfill their objective of delighting and entertaining you as they devour bugs.

We are pleased to be your guide and only ask that you keep and refer to these instructions throughout the growing process for you and your seeds. Let's get started!

### Included With Your Carnivorous Creations™:

Planting Terrarium

Bag of Peat-Based Planting Mixture

Color Seed Pack - Contains 2 Seed Packs:

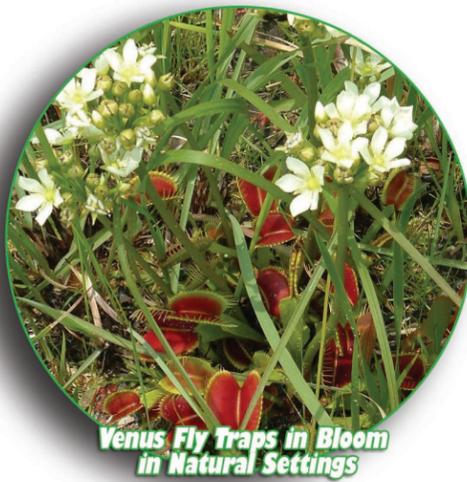
Seed Pack 1 - Fly Trap seeds to be sewn directly.

Seed Pack 2 - Zip-Lock bag with premixed seed and germination mixture for stratification.

Bag of Blue Swamp Rocks™

3 Carnivorous Plant Close-up Color Decals

Instructions and Information Manual



Venus Fly Traps in Bloom in Natural Settings

### How Do Carnivorous Plants Work?

Let's begin with a little information about Carnivorous Plants in general. There are over 650 species that are native to all Continents except Antarctica. North America was once home to vast numbers of carnivorous plants in what are sometimes called "wetland habitats." Unfortunately, native pine forest bogs in which the plants are commonly found are being converted to other uses and carnivorous plant populations are decreasing at an alarming rate. American species are some of the most spectacular in form and color and we are pleased to provide you with commercially raised seed.

Carnivorous Plants live in humid and poor nutrient habitats and have developed their carnivorous habit to supplement their diet with mineral loaded insects. All Carnivorous Plants have highly modified leaves that form traps that lure and then capture prey. Pitcher plants form tube traps that produce an attractive secretion on the slippery rim of the trap. Insects are enticed to stroll around the rim and if they are not careful, will fall into the narrow tube or vessel. The inside surface of the tube is very waxy and the victim is usually unable to crawl back up to freedom. The odor from decaying bugs attracts more prey as they fertilize the entire plant.

Sundews produce leaves with tentacles that produce a very sticky glue-like substance. They glisten in sunlight providing Sundews with the distinction of being called "The Jewels of the Plant World." Insects are attracted to the tentacles and quickly become stuck. Adjoining tentacles bend and attach to the body of the unlucky bug. Digestive enzymes eventually absorb the nutrients from the insect, thus nourishing the plant.

The famous Venus Fly Trap, a native of coastal North and South Carolina, forms a hinged trap that typically has three little triggers on the inside of each half. When an insect touches one of the triggers, the plant gets ready to spring into action. When the same or another one is touched, the trap quickly slams shut. If the insect manages to escape, the trap will reopen the following day to try again. The cilia, or little fingers on the outer surface, lock together to form the prison doors. Digestive enzymes secreted by glands within the trap decompose the soft parts of the insect's body. Depending on the size of the meal, the trap will open again in a week or two to capture another meal. Only the soft parts of the victim's body are consumed, the skeleton shell is removed by rain or wind activity.



Dionaea muscipula



S. purpurea-venosa



D. Filiformis-Tracyi

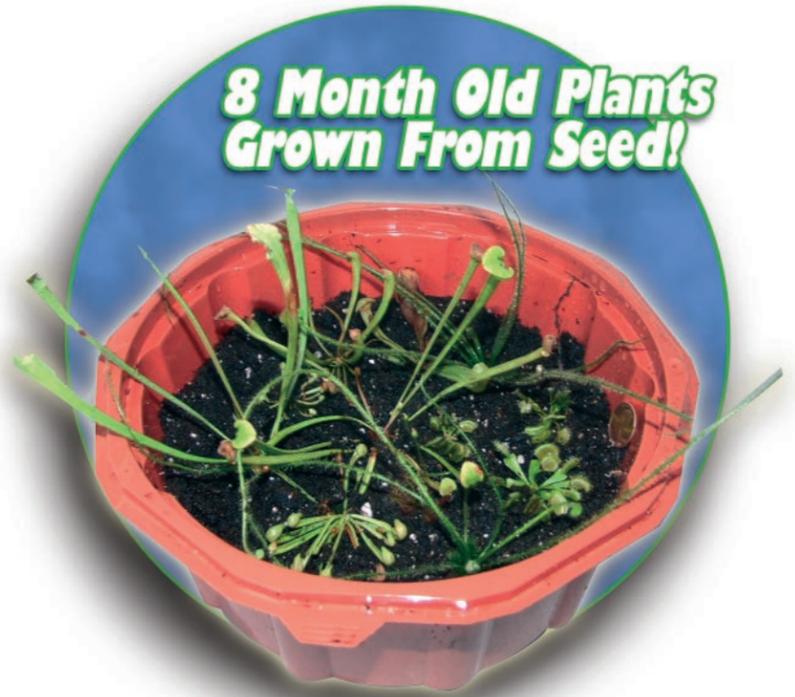
### Setting up and Preparing your Terrarium

You can establish and grow plants from seed any time of the year. You will have slower growth of emerging seedlings during the winter months unless artificial lighting is provided. We recommend that seed be placed in the refrigerator (not freezer) until it is sown. Germination rates do decrease over time when seed is maintained at room temperature. If you have decided to get started now, follow the step by step plan and you're on your way toward being a successful Carnivorous Plant Grower!

- Unpack all contents and place the premixed seed stratification pack (2) that requires "Stratification" in the refrigerator. It can be properly prepared later.
- Put the color carnivorous decals on the base of the terrarium. They are sized to fit the flat panels around the base.
- Massage the bag of planting mixture in order to remove any clumps that may have formed during shipping;
- Add 3 cups of distilled, purified, or rain water and thoroughly mix with the peat moss based mixture until it is uniformly moist. The mix should be a medium chocolate brown color.
- Press and gently smooth out the soil mixture so it is even so there are no clumps or deep pits on the surface.
- Spread Swamp Rocks™ to create streams throughout your carnivorous bog.
- The correct soil medium moisture level can easily be checked by lightly pressing your thumb against the surface. It will bounce back with the right water level. If water fills the depression, there is too much and you will need to remove and squeeze the medium to extract the extra water.

### Seed Packages and Sowing Requirements

There is one color seed pack that contains 2 separate seed packs with your kit. The seeds in the direct fill pack (1) are from species that produce seed in the spring and they naturally grow during the summer months. The seeds in the stratification pack (2) ripen in the fall and then over winter on the ground in their natural habitat. They require a similar cold seasonal treatment before they will germinate. This treatment is called "Stratification" and requires moisture and a chilled period that unlocks the seed for germination. You can easily duplicate this "wintering effect" by following the Special Stratifying Instructions.



8 Month Old Plants Grown From Seed!

### Seed Sowing Process

We will assume that you are only sowing the seeds that do not require stratification and that they will be sown later. To avoid over sowing in the same area of the terrarium, we suggest you reserve a quarter of the area adjacent to the side tab and use a few Swamp Rocks as the border. Any area is fine to use, just remember where it is or simply mark it with a toothpick! The seeds in the spring seed package are extremely small. The black teardrop shaped seeds are Venus Fly Trap seeds. Sundew seeds are nearly microscopic and are naturally distributed by wind. Be careful and fully open the package directly over the area that you have selected to use. Before discarding, make sure that you have sown the entire seed supply. Do not cover the seeds!

- Ever so gently sprinkle or spray 3/4 cup of water on top of the seeds.
- Place the lid on your terrarium. Line up the tabs on your dome and planting base so they form a "V" and snap dome onto planting base.
- Place in a warm, bright area that is not in direct sunlight; an eastern or southern exposure is best. A western exposure may provide too much light and heat and a northern exposure will not provide enough warmth and light.
- Germination will commence in 3 to 6 weeks with ideal light and temperature.
- Some condensation should form on the dome, if not, use a mister and spray water on the seeds and on the inside of the dome.

### Stratifying Your Seeds and Preparing Them for Planting

The seeds that required stratification are contained within the germination mixture (2) to make this task very easy for you.

- Carefully cut open the heat seal on the bag and do not destroy the ziplock ability of the bag. Slowly add 1 teaspoon of water.
- Close and reseal the bag and gently press the germination mixture, seeds, and water together.
- Once everything in the bag is uniformly mixed, place in your refrigerator (not freezer) for six weeks.
- After six weeks, remove them from the refrigerator and gently nudge the mixture and seeds out of the bag, spreading them on the surface. Use a spoon to spread them out evenly. Seeds should be exposed or will be after watering them in. Use as little water as needed, less than 1/4 cup should be more than adequate. Replace the dome cover and put them back in the selected location.

## General Care For Seedling Carnivorous Plants

### Germination Period (0 to 3 Months)

Most carnivorous plants are slow growers from seed and do require frequent monitoring with consistent maintenance. It is very important to keep them "just moist" during the pre and post germination period. Non-trapping cotyledon leaves (very small/short) are first produced after germination. Then, immature and not really useful working leaves with traps are formed. The seedlings are all very small and will do fine in low light level locations provided they are not kept wet. They naturally grow in dense grasses which provide a shady environment for them. At 3 months, the Venus' Fly Trap should be at least 1/4" in diameter. Your Pitcher Plants 1 to 2" tall and the Sundews will be very visible.

### Tender Plant Stage (3 to 6 Months)

The 3 to 6 month period is the crucial period for your seedlings. They will be in the process of developing a multiple root system. You can assist them by misting them weekly, with a weak solution of plant food (fertilizer). The recommended dosage is 1/10 full strength applied as a side spray mist to minimize contact with the soil medium. A common brand used by growers is Miracid, (30-10-10) or its equivalent, but any houseplant fertilizer with the right dilution will work. The amount and how long the seedlings receive light should be increased to approximate the natural mid to late summer growing conditions. You can duplicate this condition by using a basic shop type fluorescent light unit (warm or cool white lamps) placed over and within 3 to 6" of the dome. A fourteen hour photoperiod (light on time) will be quite adequate and loved by your seedlings. Day and night temperatures can be increased to the 70 deg. F. night and 85-90 deg. F. day range to duplicate natural habitat conditions. Humidity must be maintained at 50% plus for best results. The seedlings will show great progress during this stage of growth. The Sundews are especially fast growers and will be very impressive.

### Trap Development Stage (6 to 12 Months and Beyond)

The seedlings have well established roots and have developed fully functional traps. They are now beyond the difficult and critical point of their growth and can take some abuse. They still need regular care. They will be able to capture bugs. A few of the taller Pitcher Plants and the Thread Leaf Sundew might be touching the top of the Dome and will need to be transplanted. Fly Traps will have 1/4 inch long traps that actually will close on an insect. The uncovered Terrarium can be placed under partial shade outdoors to trap prey during humid days provided temperatures are within a comfortable range.



Field of White-Topped Pitcher Plants - *S. leucophylla*

## Basic Growing Rules to Follow

- If you do not plan to use the seeds for a while, store them in the refrigerator, as opposed to a freezer.
- Carnivores live in high rainfall areas and like pure water. You won't need much; a gallon will last a long time. Obtain purified, distilled, or use collected rain water if you are unsure if your tap water is pure enough.
- The top few inches of sandy based peat soils in natural habitats dry out quickly. Water is frequently held well below the surface level. That's why we don't keep the plants totally wet or waterlogged. Young carnivorous plants like to be kept just slightly moist. Once the plants are over 6 months old, you can slightly increase the saturation level of the growing medium.
- Your plants will flourish in the provided terrarium, with or without food. If you do not feed them captured insects, continue with diluted fertilizers. Never feed raw meat to plants. Eventual bacterial growth will decay the trapping leaf.
- While your Carnivorous Plants will thrive in bright indirect light, they will wilt in the heat of direct sunlight.
- Periodic removal of the dome to air out the plants and to help prevent fungus growth can be done every few weeks in locations with reasonable humidity levels.
- The plants like to be kept cooler in the winter, 60 degrees, and warmer 75-85 degrees, in the summer.
- The biggest danger to your seedlings will be gray mold. It will look like a damp, gray fluff and typically strikes in cooler conditions. You can remove the mold by spraying the soil with a 1:50 mixture of hydrogen peroxide and water. If mold starts to appear, reduce the moisture and water the plants with a mixture of one capful of hydrogen peroxide to seven ounces of water. This will kill the mold but not the plant.
- If you decide to transplant your carnivorous plants, it is important to use the correct soil. A simple to provide equal mixture of milled sphagnum peat moss with washed sand (construction, horticultural, or play sand) works well. Never use beach sand as the salt content will render the medium harmful to your plants.
- Insect pests such as aphids and mealy bugs do attack mature pitchers. Diluted soap or oil sprays can safely be used.

## Over-wintering Your Mature Carnivorous Plants

The seeds in your kit are perennials that can live for many years with the proper care. A few of the Sundews in your terrarium will naturally lose all of their leaves and form a protective winter bud that will reopen in the spring. Most of the other species will need a resting or dormancy period after their second growing season. Growth will stop as days become shorter and colder. Old pitchers will wither and brown and Venus' Fly Traps will become much smaller and sluggish. Remove all dead leaves and reduce how often you water them. Simply remove the greenhouse top, cut off all dead foliage, cover and place in a refrigerator for two months. You can also place them outdoors or in an unheated garage for two months if you live in an area with a cold, but not extreme winter. The plants cannot be allowed to freeze.

- It's okay to let your pitcher plants dry out more during this dormancy period. Periodically just add enough water to keep the medium moist.
- After two months, water the plants, replace the lid, and place in a window with a southern or eastern exposure. New growth should resume shortly thereafter.

## Species Seed in Your Carnivorous Creations Kit

A selection of the best species from two Genera is included in your all American carnivorous seed packages.

Please be aware that except for the Sundews which usually obtain full size within 2 years, the Venus Fly Traps and Pitcher Plants may take from 3 to 5 years before they reach flowering and are near full size. Species names with some brief information on each are provided for your edification.

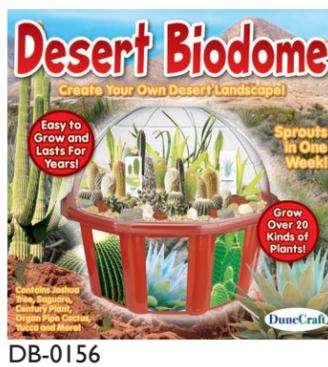
- Venus Fly Trap (*Dionaea muscipula*): A native of N & S Carolina. Trap size up to 1-1/2" on older plants. Produces a cluster of white flowers in May/June
- Pink Sundew (*Drosera capillaris*): Very common in coastal bogs from Texas to Virginia. Rosette to 1-1/2" diameter. Fast grower with pink flowers
- Dewthreads Sundew (*Drosera filiformis-tracyi*): Common in bogs between Mississippi and Florida. A very fast growing and tall (18") plant that is especially good at catching gnats and other small bugs. Lavender Flowers and abundant seed in the spring
- Oblong-leaved Sundew (*Drosera intermedia*): Coastal bogs from Texas to Maine and Great Lakes region. Semi-erect plant to 8" in wet conditions within 2 years. Small white flowers produced in late summer
- Pale Pitcher Plant (*Sarracenia alata*): Found in isolated pine forests between Texas and Alabama. 30 to 36" tall when fully grown. Pretty Pale yellow flowers in early spring
- Yellow Trumpet Pitcher Plant (*Sarracenia flava*). Once common in Alabama to S. Virginia in savanna bogs. To 42" tall in shade, but usually 30" in sunny areas. One of the fastest growing Pitcher Plants from seed. Smelly Yellow flowers in early spring
- White-Topped Pitcher Plant (*Sarracenia leucophylla*). Possibly the most spectacular pitcher plant with its majestic and large pitchers. Greatly decreasing in numbers due to habitat destruction in Gulf Coast bogs between Mississippi and the Florida Panhandle. Often 36" tall. Produces spring and then a late summer flush of pitchers. Red flowers on a tall scape in early spring
- Hooded Pitcher Plant (*Sarracenia minor*). Unique looking 12" tall pitchers in late spring. Pretty yellow flowers in late spring. Native to coastal and inland pine forests between Central Florida and Lower N. Carolina.
- Parrot Pitcher Plant (*Sarracenia psittacina*). Small rosetted plant typically less than 8" in diameter, larger in very wet habitats that maintains pitchers throughout the year. Coastal Louisiana to inland Georgia pine/seep bogs. Dark red flowers in late spring
- Purple Pitcher Plant (*Sarracenia purpurea-venosa*). We offer which is considered the southern form of this species which is found from Delaware south to Mississippi. It does not have a lid, but captures water to drown insects. Typically up to 10" in diameter. One of two pitchers that keeps its pitchers year round. Red to pink spring flowers
- Sweet Pitcher Plant (*Sarracenia rubra-wherryi*). One of the varieties in the rubra complex. This form is native to eastern Mississippi and lower Alabama. Pitchers vary in size from 10 to 16". Red flowers in late spring

## Plant Growth Factor Comparison

The following 3 Photographs are for you to use to gauge the size of your plants to average growth under good conditions. The top row consists of *S. purpurea-venosa*, *D. filiformis-tracyi* and *S. leucophylla*. There are 2 Venus Fly Traps in each photo. All sizes are approximations for the stated ages and will vary considerably with individual plants based on the time of year and conditions under which they are maintained.



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