



PRODAC®

Passionate about Fish

Betta Splendens



www.prodac.it

Betta Splendens

Betta splendens, commonly known as the Siamese fighting fish, is a Belontiid originating from Southeast Asia: Thailand, Malaysia, Cambodia, and Myanmar, where it inhabits slow or stagnant waters with muddy bottoms like flooded rice fields.

Although in the wild this species is somewhat smaller, males can reach up to 12 centimeters, while females are smaller, with less developed fins and significantly less colorful.

Currently, in aquarium shops, you can find all kinds of large-sized chromatic and morphological varieties.



Keeping this species in aquarium is very easy since it is a strong fish; you just need to observe the tank where they are housed for sale.



Thanks to their ability to breathe atmospheric air through the labyrinth organ (an accessory respiratory organ), *Betta splendens* can tolerate extremely low levels of dissolved oxygen in the aquarium water.

A 30-liter tank is sufficient for one male and a pair of females, with specific biochemical parameters: Temperature between 24 – 30° Celsius, total hardness (dGH) of 5° - 20°, pH ranging from 5.9 – 7.5, and ideally, absence of nitrogenous compounds. They prefer natural light, so the tank should ideally be positioned facing a window or similar light source. If artificial light is used, it's preferable to use low-intensity lighting.



The substrate of rather fine gravel will be suitable, with dense vegetation consisting of *Hygrophilas*, *Limnophilas*, *Alternantera*, *Barclaya*, and especially *Ceratopteris* and *Riccia*.



Feeding and behaviour

Regarding feeding, this species is omnivorous with carnivorous tendencies, so it is recommended feeding with natural food such as bloodworms, tubifex, etc. It can also accept dried food and will eat almost anything offered to it.



Regarding behaviour, *Betta splendens* is a peaceful and calm species in its interactions with other species, although the aggression of the male *Betta splendens* towards individuals of the same species is epic.

The social behaviour between two males is indeed very aggressive. It starts with a display of strength, such as gill flaring and tail slapping, followed immediately by charges and biting. When the weaker opponent becomes exhausted and gives up the fight, attempting to escape, the victor begins to chase. The fight always results in physical damage to at least one of the contenders and often (always in an aquarium setting) ends with the death of one of the two rivals.

As mentioned before, females are slightly smaller than males and have a more subdued coloration (both in wild and commercial varieties). They do not exhibit as aggressive social behavior as described for males and can be kept together in the same aquarium with multiple individuals.

***Female Betta
splendens wild
shape***



During their reproductive phase, the male *Betta splendens* establishes and defends a territory in the water column near the surface, centered around the bubble nest constructed by the male and anchored in an area of aquatic vegetation.

From this location, he waits for an opportunity to court one or more females, persuading them to deposit their eggs into his nest.

From this same location, the male *Betta* must defend his territory against other males of his species that approach dangerously to usurp the efforts of the resident male.

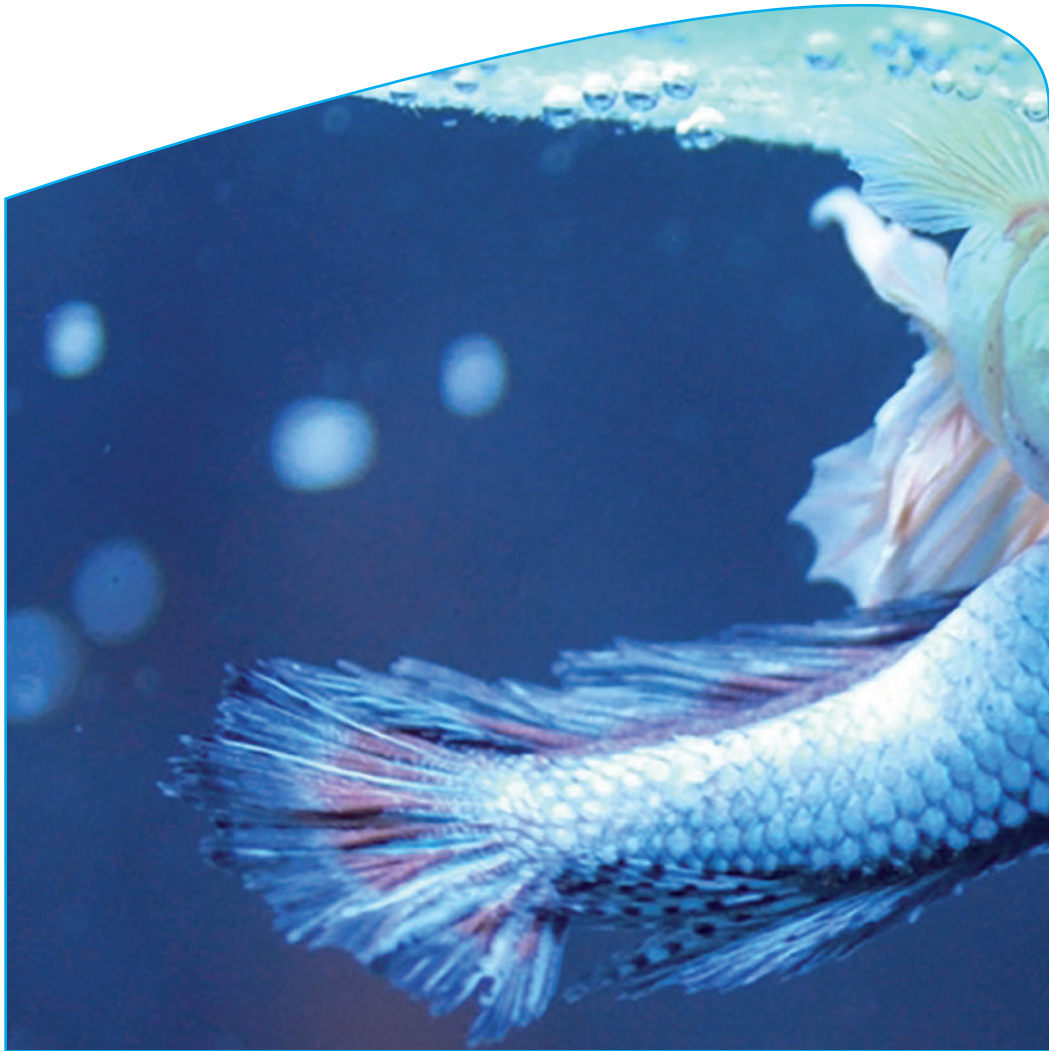
His ability to compete with other males will determine his reproductive success.

***Male Betta
splendens wild
shape***



Reproduction

Reproduction is quite straightforward and was first achieved in Europe in 1839. Use an aquarium ranging from 10 to 40 liters with a water level of about 15 centimeters. The filter should produce minimal water movement, and there should be abundant vegetation, especially floating and sessile plants, to serve as hiding places for the females. Finally, ensure a good cover that creates a layer of warm, humid air. The biochemical conditions should range between: Temperature 26 – 30°C, total hardness (dGH) of 8 – 10°, and pH of 6.9 – 7.1. First, introduce a pregnant female (distinguished by abdominal swelling and the appearance of a white spot near the urogenital area), and shortly after, introduce the male.



During spawning, the male wraps the female with his body and collects the eggs, typically around 40 eggs expelled in each mating act, placing them subsequently in the bubble nest. Following spawning, which usually amounts to a total of 200 – 300 eggs, the female is removed, and the male takes over the care of the eggs, ventilating them and removing any non-viable eggs.

Hatching occurs after 18 – 36 hours at 27 – 30°C, and the fry absorb the yolk sac over the next 2 – 5 days. Shortly after the fry begin to swim freely, the male is removed, and the water level is reduced to 5 centimeters.



The Fry

The feeding of the fry will consist of infusoria initially, followed by powdered fry food. Subsequently, they will be fed with cyclops and brine shrimp nauplii, and after 3 to 5 days, finely chopped tubifex can be introduced.

From hatching until the 3rd to 5th week, it's important to provide good aeration in the aquarium since the fry still lack the labyrinth organ (a small accessory organ for air breathing).

It's important to perform frequent partial water changes (every 3 – 5 days). Growth is quite rapid, and they reach maturity by 5 weeks.



Interestingly, a large portion of species within the Betta genus are actually mouthbrooders, contrary to the common perception of Betta fish.

This reproductive system is believed to have evolved from the more primitive nest-building behavior.

Floating nests made of plant debris and bubbles work well in stagnant waters, offering adaptive advantages by keeping eggs and fry together, safe, moist, and near the water's surface where oxygen concentration is highest.

However, in habitats with currents, maintaining a nest can be challenging.

The evolution of mouthbrooding likely began when males, due to handling eggs during nest maintenance, only needed to take one more step to fully incubate them in their mouths.

The advantages of mouthbrooding became evident: males and offspring could move if needed (for safety or better conditions), whereas nests and their contents cannot be relocated.

Furthermore, the offspring of this new reproductive mode have a greater chance of reaching a stage where they can become independent and fend for themselves. The maintenance of these fish in an aquarium can be summarized in a few general guidelines that we will discuss below.

It should be noted, however, that these species have not been bred for long and only by a minority of specialists, resulting in limited verifiable literary data. Therefore, it is important to rely on personal experience gained from maintaining these fish.

Lastly, we will develop profiles for the species that we have been able to maintain, aiming for greater specificity and better data for the specific care of these Betta fish.

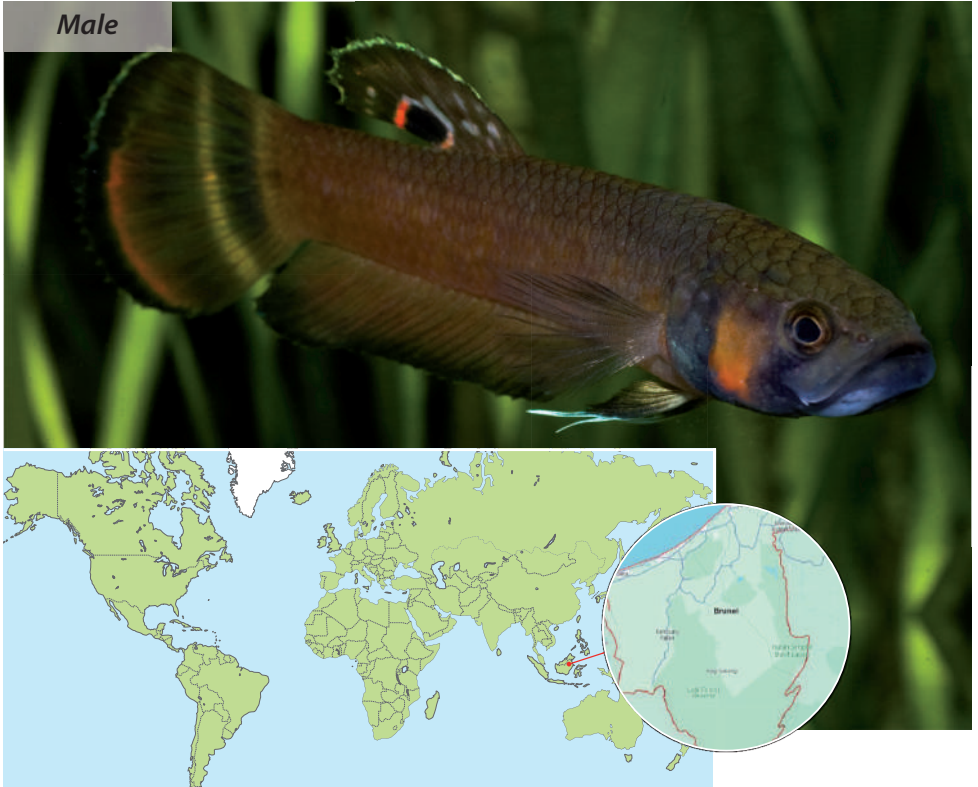
Long tail



Betta macrostoma,

(Regan 1910) or Beauty of Brunei

Male



This species is native to the Sultanate of Brunei. It was first imported to the United States in 1980 and arrived in Europe in 1984. Currently, its capture, possession, or maintenance in Brunei is prohibited. It reaches a maximum total length of 14 cm.

Males are territorial and quite aggressive towards their conspecifics, so they should be kept separate or in very large aquariums.

Otherwise, they are shy and spend most of their time hiding.

These fish are delicate and suitable only for experienced aquarists. They are sensitive to various biological infestations and also to medications. Suitable for a community aquarium with individuals of similar size, such as chocolate gouramis or peaceful cichlids.

Couple



A 120-liter capacity aquarium is required for a single pair (200 to 400 litres if you want to keep one male with multiple females). A good filtration system is necessary, with peat inside to consistently provide clear water and a strong current.

Position the filter outlet to create a gentle flow. A secure lid should be provided for the aquarium as they are good jumpers and can find any open gap.

Use low-intensity lighting for the aquarium. The substrate should be sand, and the decoration should include roots, rocks, and a high density of sessile and especially floating plants.

The physicochemical characteristics of the water should approximate the following values: temperature of 22-27°C, pH of 5.0-7.5, and temporary hardness (KH) of 0-1°. Daily water changes of one-fifth of the aquarium volume should be done, adding a water conditioner to the new water.

Betta foerschi,

(Vierke 1979) or Foersch's Mouthbrooder



This species is native to the Metaya River basin in southern Borneo (Kalimantan, Indonesia). It first appeared in the commercial trade thanks to Dr. Walter Foersch, who brought it back from an expedition in 1978. It reaches a maximum total length of seven centimeters.

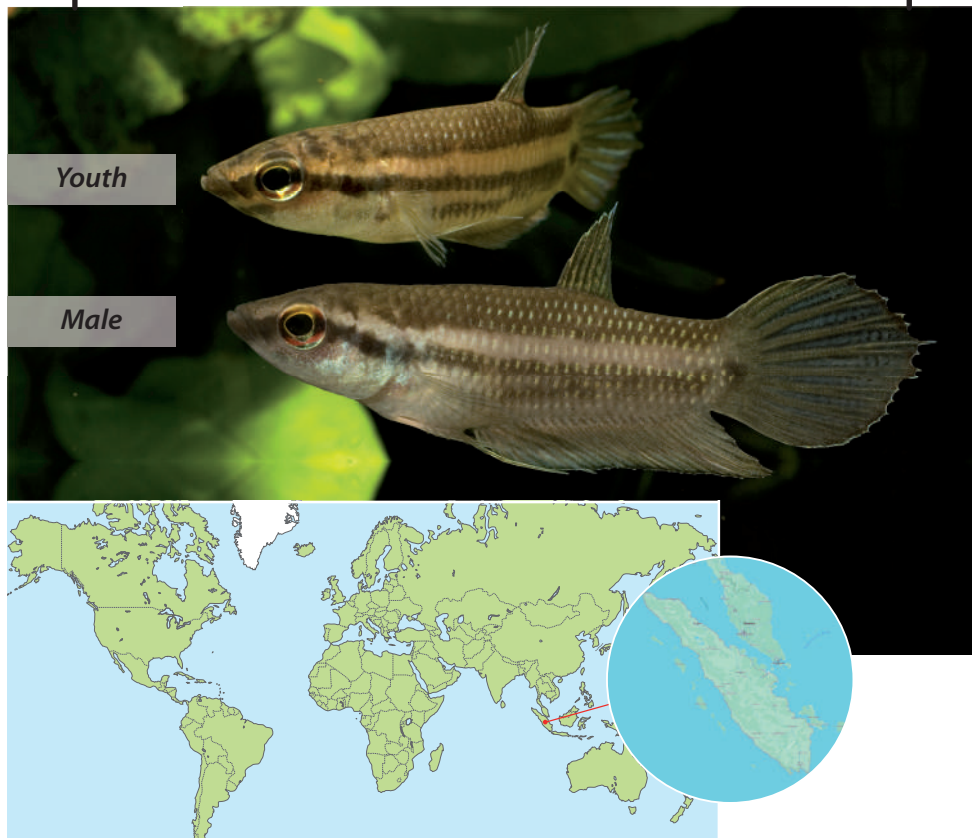
There are different varieties based on their population (Kubu, Mandor, Pudukuali, Tankiling, Pangkalanbun, and Tarantang), and some are considered distinct species, although they have not been formally described yet. Therefore, it's important not to crossbreed them to preserve their genetic identity as much as possible.

Sometimes, fish sold under the name *B. foerschi* are actually *Betta mandor*, described in 2006 by Tan & Ng.

This species is an excellent jumper and is shy, calm, and peaceful with other small species. It occupies all areas of the aquarium. It is sensitive to nitrogenous compounds and sudden environmental changes. This species is suitable only for experienced aquarists. The physicochemical characteristics of the water should approximate the following values: temperature of 22-28°C, pH of 5.5-6.8, and hardness (dGH) of 0-10°. Frequent partial water changes are necessary.

Betta fusca,

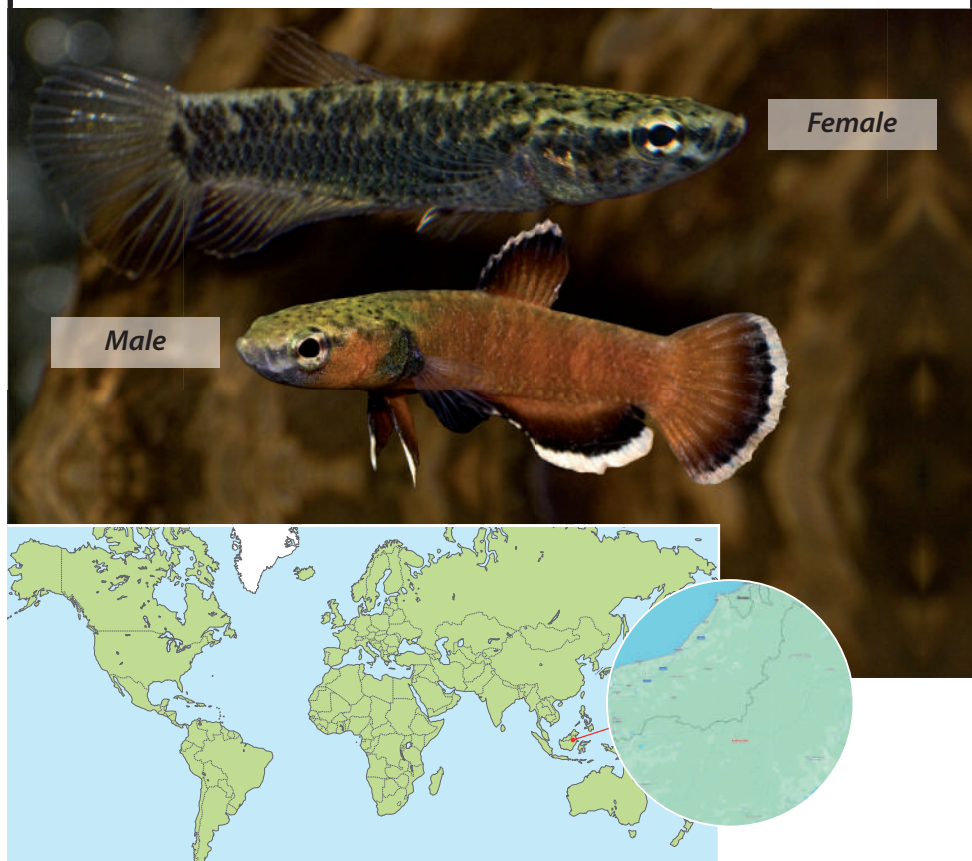
(Regan 1910) or Dark Mouthbrooder



Native to central Sumatra and the southern part of the Malay Peninsula, this species was first imported alive in 1971. It reaches a maximum total length of 12 cm, although it typically stays somewhat smaller (around 8 cm) in aquariums. It is a peaceful species suitable for a community aquarium with other peaceful species of similar size. However, it is recommended only for aquarists with some experience. Its activity area is primarily in the middle and lower parts of the aquarium. For housing a single pair, a 100-litre capacity aquarium is recommended (200 to 400 litres for a group), equipped with strong filtration to maintain clean water and a strong current throughout much of the aquarium. Use low-intensity lighting. Decorate with roots, rocks, and a good amount of marginal and floating plants. Half coconut shells or overturned pots should be added to offer shelter to the breeders. The physicochemical characteristics of the water should approximate the following values: temperature of 22-26°C, pH of 5.5-7.0, and hardness (dGH) of 0-18°.

Betta albimarginata,

(Kottelat & Ng 1994) or White-Edged Mouthbrooder



Native to the Sebuku River basin in Kalimantan Timur, Borneo (Indonesia), this species reaches a maximum length of 5 cm. It is distinguished from other Betta species by having white margins on all fins except the pectoral fins. This species is peaceful and calm, suitable for a community aquarium with other small species, although it is preferable to keep it in specific tanks. Ideally, it is better to maintain a group rather than a single pair, or alternatively, a male with several females. Its activity center is in the middle and lower parts of the aquarium. Suitable only for experienced aquarists.

The physicochemical characteristics of the water should approximate the following values: temperature of 22-28°C, pH of 5.5-7.6, and hardness (dGH) of 2-16°. Regular partial water changes should be performed.

Betta sp. aff. akarensis,

(Regan 1910) Big-Eyed Mouthbrooder



This species is widely distributed in northern and western Borneo (Malaysia, Indonesia, and Brunei). It was first imported alive in 1984. Due to its extensive distribution, there are color differences among different populations and local variants.

This species can reach a maximum total length of 16 cm. It is active in the lower part of the aquarium. With a somewhat shy, calm, and peaceful temperament, this fish should be kept in a group of conspecifics. It can also be kept in a community aquarium with peaceful, small species that have similar requirements.

The substrate should consist of peat and decomposing leaves. Decorate with roots, rocks, and dense planting of sessile and floating plants (such as Java moss and Sumatra fern).

The physicochemical characteristics of the water should approximate the following values: 21-28°C temperature, pH 5.0-7.6, hardness (dGH) 2-18°.

Domestic Forms

For over 300 years, *Betta splendens* has been selectively bred to produce various domestic forms through targeted reproductive selection.

A significant variety of morphologies (size, fin shapes, and coloration) and behaviors (varying levels of aggression) have been and continue to be selected.

These domestic forms dominate the global ornamental fish sector and were initially bred for male-male combat purposes. Unfortunately, the presence of wild-type forms is nearly non-existent in the trade or among hobbyists.

All these forms exhibit such a great distance from the wild form of *Betta splendens* that they could be considered genetically a different species from the original.

Nevertheless, domestic forms are occasionally crossed with wild specimens of *B. splendens*, resulting in some genetic introgression, if one can call it that.

Not only with this species, but in recent years, genetic traces of at least two other *Betta* species, *Betta mahachaiensis* and *Betta imbellis* (in the Koi and Giant forms), have also been detected.

*Long tail
bicolor*



Short tail



*Betta
mahachaiensis*



Main colouration patterns

Royal Blue, Turquoise-green, and Steel-blue Colours

These three colourations are closely related. If a male and female Royal Blue are paired, the offspring will be 50% Royal Blue, 25% Turquoise-green, and 25% Steel-blue.

This indicates that the Royal Blue form originally came from a cross between the Turquoise-green and Steel-blue forms. Steel-blue has this colouration because it lacks red pigment cells and instead appears more grayish in color.

Royal blue



Colourations Orange, Red, and Yellow

Orange colouration results from a combination of red pigment cells and yellow pigment cells, specifically from crossing the Red form with the Yellow form. However, it's important to note that the Red form is dominant over the Yellow form.

Orange



Koi Colouration

Koi Red



Koi blue



Also known as mosaic, candy, Galaxy, and marble. Bettas with this chromatic form exhibit a varied color pattern reminiscent of classic Japanese koi carp.

White Colouration

As the name suggests, this coloration is white with a shimmer ranging from opalescent to pinkish.

White



These color groups represent the base colours. From here, many forms with different body and fin colourations have been produced, making these variations the most common ones now.

Fin form and size

There are several main types of caudal fins, but from here, intermediate forms of these types can also be found:

Veiltail

It is the first type of domestic long-finned form that was achieved. It is equivalent to the veil forms of many aquarium-dwelling species: zebrafish, cories, serpae tetras, etc.

Veiltail muticolor



Veiltail Red



Halfmoon

It is a long-finned form in which the caudal fin, instead of falling like a bridal veil, opens up like a 180° fan, forming a symmetrical semicircular surface, resembling the letter D.

Crowntail

Differs from the Halfmoon form because it exhibits a reduction of connective tissue between the rays of the caudal fin, giving the appearance of a frayed tail.



Fighter

This form is the closest to the original wild *Betta splendens*. With short fins, it was the first domestic form created, and according to a recent scientific study, its level of aggression is nearly 150% higher than that of other forms.



Scissor tail

Also known as double tail. Males of this form have their caudal fin split into upper and lower halves. Likely appearing as a spontaneous mutation, this type of syndrome is relatively common in many other fish species, and individuals with this trait are typically not used for breeding or sale. In addition to the caudal fin, other fins have been modified similarly.

In specimens with long caudal fins (Veiltail and Halfmoon), the dorsal and anal fins generally have longer rays. There is a selection, however, that deserves special attention.

This is the Dumbo form, notable because the elongated fins are the pectoral fins.



Dumbo

This phenotype is characterized by the elongation of the pectoral fins. There are combinations of this phenotype with different types of fins like Dumbo Halfmoon, Dumbo Halfmoon Plakat, etc.



Body form and size

Giant



This form (giant) doubles the size of wild and domestic *B. splendens*.

It is a variety that also exhibits greater longevity, proportional to its size, meaning it doubles the lifespan of other morphs.

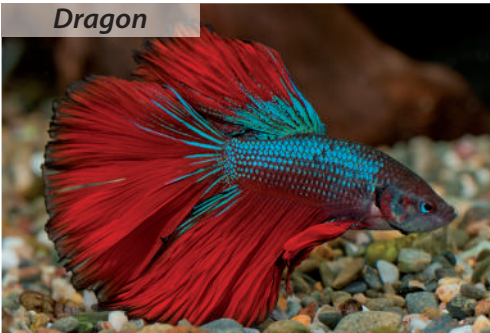
Plakat



This is a form with short fins and a body that is taller, especially just behind the head.

The jaw also has a larger size compared to other Betta forms.

Dragon



This form combines chromatic and morphological characteristics.

The coloration of a Dragon Betta is typically based on red, although black and orange are also accepted, usually with a short tail.

What fundamentally characterizes this form is the thickness and hardness of its scales, often accompanied by iridescent or metallic tones.

Veiltail bicolor



There are multiple combinations of the different basic domestic forms of *Betta splendens*. Within the hobby of aquarium keeping, enthusiasts of these fish create their own world, much like enthusiasts of other notable species such as Discus (*Symphysodon* spp.), Angelfish (*Pterophyllum* spp.), Goldfish (*Carassius auratus*), or Koi Carp (*Cyprinus carpio*), albeit to varying degrees. We hope to have introduced generalist aquarists to this fascinating world of domestic Bettas.

Follow us:



PRO.D.AC. INTERNATIONAL S.r.l.

Via P. Nicolini, 22

35013 CITTADELLA (PD)

www.prodac.it

info@prodac.it

All rights reserved - Copyright (2024) PRO.D.AC. INTERNATIONAL S.r.l. (P.I. - VAT No. IT00728310285).

COD.: 14.601



8 018189 902031