



Snails (*Achatinoidea*)



Snails (*Achatinoidea*)-<https://www.google.com/imgres?imgurl=http://www.snail-world.com/wp-content/uploads/snail-front.jpg>

General Information on the Snails

According to A-Z Animals and Animal Facts, there are nearly 1000 different species of snail that are spread throughout the world's. Snails belong to the class of Gastropoda, a classification that includes land, freshwater and sea snails as well as slugs. Snails' ancestors are one of the earliest known types of animals in the world. It is an exotic species favored by the equatorial Climate. There is fossil evidence of primitive gastropods dating back to the late Cambrian period; this means nearly 500 million years ago. Snails move at an incredible slow speed. An average adult moves at a speed of 1 millimeter per second. While moving, snails leave behind a trail of slime, a lubricant they produce to allow them to easily move across any type of terrain without injuring its body. Land Snails aren't able to hear at all but they have eyes and olfactory organs. They use their sense of smell to help them find food.

Gastropods belong to the *phylum Mollusca* (or Mollusks) a classification of **invertebrate animals** with soft unsegmented body, sometimes covered with an **exoskeleton** or shell. Snails and slugs are both Gastropods, therefore they are closely related, regardless the fact that slugs lack a protective shell. Snail shell is made of calcium carbonate and keeps growing as long as the snail grows. They keep adding more calcium carbonate to the edge of the shell until the snail reaches adult size. Snails are **hermaphrodites**, meaning that they have the reproductive organs of both sexes on them, therefore they are able to produce both sperm and eggs. When they are mating, they will both conceive and lay eggs.

The average life span of a snail is approximately 10 to 15 years in captivity. Though, it is believed that some species can live up to 25 years. In the wild however, lifespan varies from species to species, but range from 2-3 in some cases from 5 to 7 for other kinds of land snails.

Farmed Snail species

The practice of rearing snails for food is known as Heliciculture. This is a practice common in some parts of Africa. The most commonly farmed snail species are the

Giant African land snail or East African land snail (*Achatina fulica*), (Figure 3) a large air-breathing snail that is commonly reared in Africa. It carries along a characteristic narrow, conical shell that is often reddish and brown in colour and could weigh up to 32 grams (Cooling 2005).

Achatina fulica, lays 100 to 400 elliptical eggs that each measure about 5 mm long. Each snail may lay several batches of eggs each year, usually in the wet season. They may lay eggs in holes in the ground like *H. pomatia*, or lay eggs on the surface of a rocky soil, in organic matter, or at the base of plants. In 10 to 30 days, the eggs hatch releasing snails about 4 mm long. These snails grow up to 10 mm per month. After 6 months, the *Achatina fulica* is about 35 mm long and may already be sexually mature. Sexual maturity takes 6 to 16 months, depending on weather and the availability of calcium. This snail lives 5 or 6 years, sometimes as many as 9 years.



Achatina fulica, (http://www.wealthresult.com/wp-content/uploads/2013/08/Achatina_fulica_Nigeria.jpg)

Achatina achatina are the largest land snails in the world and are a widely sought after species, due to their size, distinct markings and lack of availability. They are more difficult to breed than other African snails (James Rushton, 2012). *Achatina fulica*, the giant east African snail, is canned and sliced and sold to consumers as escargot.

The *Achatina achatina*, an **African giant snail**, also known as the **giant Ghana** or **tiger land snail**, is a species of very large, air-breathing land snail, a terrestrial pulmonate gastropod mollusk in the family Achatinidae. The shells of these snails often grow to a length of 18 centimetres (7.1 in) with a diameter of 9 centimeters (3.5 in). Certain examples have been surveyed in the wild at 30×15 cm, making them the largest extant land snail species known. The species is usually called 'nyamangoro' and 'slow boys'. It is a delicacy especially to natives of the South West, Centre and South regions of Cameroon. The snails are either eaten cooked and spiced or with a favorite dish called "eru".

The Giant Ghana Snail, or Giant Tiger Land Snail is one of the few species that truly lives up to its name. With a shell that commonly grows to a length of 7 inches (18 centimeters) and a diameter of 3.5 inches (9 centimeters), but has been observed to grow as large as 12x6 inches (30x15 centimeters), the giant Ghana snail is the world's largest land snail. They are found within the dense forest floors in the forest zone of Ghana and also in the humid riparian forest floors. They are believed to have a 3-year breeding cycle which is longer than other snails. This, coupled with deforestation and snail-picking for consumption has caused the numbers to dramatically fall over the last 10-15 years. In parts of West Africa, specifically Ghana, snails are served as a delicacy. e)



Achatina Achatina Snails of Cameroon Acha <http://www.ecv.com/product/2642268.html>

The *Archachanitina Marginata* or the West African land snail, is also an air-breathing tropical snail that can grow to up to 20cm long and has a relatively long life span of 10 years (Bequaert, 1950). It is considered the second best snail to eat second to the *Achatina achatina*. However, this particular snail species is reportedly an intermediate vector of the Rat lungworm, a parasitic known to cause eosinophilic meningoencephalitis in humans.



A Ghanaian Lady selling Giant Snails, <https://www.google.com/Africangiantsnails>



Archachanitina Marginata Snails <https://www.wealthresult.com/agriculture/how-to-start-snail-farming-in-nigeria>

Basic Steps in Snails Farming

Snail farming is common in some African countries (such as Cameroon and Kenya). Snails are considered as a healthy and tasty source of nutrition. As their global demand is increasing day by day, it is very important to consider it as an alternative livelihood. The profit margin is extremely high in commercial snail farming. The demand for snails both in domestic and export market is more important than supplies. The modern upgraded technology is available for snail farming and one can generate more profit in a year. Snail farming business is a practicable venture and still fully unexplored in African countries.

There are some key considerations to be made when setting up a snail farm these include;

1. In starting snail farm, it is advisable to get your snails from the forest rather than buying from the market. This is because the ones in the market must have been exposed to sunlight and have dehydrated. Snails drink a lot of water, if they are exposed to sunlight; it stresses them out and reduces their fertility.
2. While building a snail house, one of the major things one should bear in mind few constraints: (i) Threats from termites, (ii) Threats from snakes (iii) Threat from rats. During construction, all these things must be considered. The recent construction of snail pen is done in such a way that every pen is covered by a strong wire-wedged cover that snakes, rats, cannot destroy even termites cannot penetrate. Snails like dark and cold places but always make sure that the humidity does not drop to levels that are harmful to the snails.
3. Snails can feed on the following; LEAVES: cocoyam leaves, pawpaw leaves, okra leaves, cassava leaves, eggplant leaves, cabbage leaves, lettuce leaves etc.

FRUITS: pawpaw, banana, eggplant, pears tomatoes oil palm fruits, cucumber etc. always sort (separate the big ones from the small ones) when they start growing. The rate of reproduction in snails is very high it can become pest when their breeding is uncontrolled. The most suitable soil for snail survival must possess these components; (i) Must be balanced, (ii) Must not be water-logged, (iii) Must not also be too dry, (iv) Must not be acidic



Construction of a Modern Snailery, <http://www.agricgist.com/2016/07/how-to-start-snail-farming-step-by-step.html>

Conclusion

Despite the fact that Snails are a delicacy, its activity could also become a source of income generation to the rural communities across the world to fight against the growing poverty that has taken root in those areas. Snails farming remains a virgin business in many parts of the world. It is therefore an opportunity to encourage Snails farming and design vulgarization materials so that the activity takes off in the continent.

Snails are part of a good portion of the diet in Africa, despite not being always affordable and available all year around. Their high protein, low fat and cholesterol content make them a nutritional favorite. Snails contain almost all the amino acids needed by the body and most of its by-products are used for cosmetics and medicines (Iwuoha, 2013). As the African population is increasingly interesting in healthier living and low-cholesterol diets, snails will become a popular alternative to all the fatty and non-healthy meats that have taken in hostages our markets nowadays. They are much cheaper than red meat with greater health benefits on top! Snails have, for a long time, been a popular and recurring item on the menus of hotels, restaurants and bars where they often feature as boiled, fried and spiced kebabs. They are also a great addition to soups and stews which are a significant part of most African dishes. The demand for Snails consumption can be local with the sale of matured snails in local market or supply to local food retailers, hotels, restaurants, stores, super markets and institution. There is also very good export market for snails (France, US, Japan, Korea).

References

1. A-Z Animals and Animal Facts, <http://a-z-animals.com/animals/snail/>
2. **Bequaert, J.C (1950)** Studies of the Achatininae
3. **G.A. Pavlova (1 May 2001)**. "Effects of serotonin, dopamine and ergometrine on locomotion in the pulmonate mollusc *Helix lucorum*" (PDF). *Journal of Experimental Biology*. 204 (9): 1625–1633. PMID 11398751.
4. <https://www.ncbi.nlm.nih.gov/pubmed/11398751>
5. "Fun Fast Animal facts". g-kexoticfarms.com.
6. **Mumladze L., Tarkhnishvili D, Pokryszko B. 2008**. A new species of the genus *Helix* from southwestern Georgia. *Journal of Conchology* 39: 483-485
7. **Christie Sahley; Alan Gelperin; Jerry W. Rudy (January 1, 1982)**. "One-Trial Associative Learning Modifies Food Odor Preferences of a Terrestrial Mollusc". *Proceedings of the National Academy of Sciences*. National Academy of Sciences. 78 (1): 640–642. doi:10.1073/pnas.78.1.640. PMC 319110. PMID 16592960.
8. James A. Danoff-Burg. "Invasion Biology Introduced Species Summary Project – Columbia University". Columbia.edu. Retrieved 2013-11-02.
9. John-Paul Iwuoha, Snail Farming – "How to farm these slow creatures for fast profits in Africa" *Agribusiness and Food, Business ideas*, Feb 2013.,