Changing shapes of the crookneck squash

By Teresa Olczyyk, UF IFAS Miami-Dade County Extension office, Homestead, FL

As an extension agent working with commercial vegetable growers I am dealing with many issues and questions from growers and the public and from time to time, questions from the research community.

One of these questions showed up in my e-mail a few weeks ago posted by Cecilia Nascimento Nunes, from the UF IFAS Food Science and Human Nutrition Department. The question was related to her previous work on postharvest quality of the yellow summer crookneck squash. While compiling her data dealing with two yellow summer crookneck squash cultivars: ‘Medallion’ and ‘Horn of Plenty’, harvested from a commercial field in Homestead, she noticed that pictures taken during the experiment show some disparity. She had fruits from the exact same harvest, from both cultivars, where some had a typical crookneck shape and others looked more like a straightneck types. Her question to me was: Is it possible that the same plant may produce both crook and straight neck shapes of fruit? The attached pictures (Fig.1 and 2) were showing a whole variety of shapes for both cultivars from seriously crookneck to almost perfectly straight neck shapes.
‘Medallion’

Courtesy of Cecilia N. Nunes
University of Florida – IFAS
Food Science and Human Nutrition Department

(Figure 1)
When I called one of our local squash growers, he said that fruits of crookneck varieties are more difficult to pack than straightneck varieties and the necks may be easily broken during harvest. Other than that, none of his buyers ever paid attention to or questioned him about variations in shapes of crookneck types. The boxes are always visibly marked
as crookneck types and sometimes there may be a difference in price between these two types of summer squash.

Searching the internet, trying to answer her question I noticed that most of the extension fact sheets and vegetable production guides from several Land Grant Universities have a very similar description of fruit shapes stating that yellow summer squash may be divided into two groups: **Straightneck** types -- yellow bottle shaped with straight necks and **Crookneck** types -- yellow bottle shaped with curved necks.

What about these crookneck types of fruit with almost perfect straight necks? Things were getting more complicated by the minute. How about going to the source and getting the answer from the breeders? Well, this is not so simple. Here is for example information describing the cultivar ‘Horn of Plenty F1’ from Hollar Seeds: “Horn of Plenty F1 is a yellow **crookneck hybrid**. This is actually a semi-crook with excellent yield, color and shape; Shape of fruit: **straight neck**, and again repeated in their Technical Sheet: **straight neck**, superior quality”. (www.hollarseeds.com/SummerSquash/hornofplenty.htm).

I was really confused after reading this. How about you? Why it is called a ‘crookneck’ if the neck is not crooked at all?

Abbott and Cobb, breeder and vendor of ‘Medallion’ describe this cultivar as: “hybrid semi-crookneck; bright yellow skin with strong necks”. There is then a third type of yellow summer squash: **a Semi-Crookneck**.

The one possible solution to resolve this issue and provide an answer to the original question was talking to the friendly seed company representative, Mr. Richard See from SeedWay. Richard has many years in the seed business and for years has been involved in planting and evaluating thousands of early and advanced breeding lines of different vegetables for several seed companies. His answer was really simple: drawing three pictures of different shapes and types of summer squash (Fig.3, Fig.4, and Fig.5).
Traditional older southern types of crookneck squash had seriously crooked neck, and were more difficult to harvest and pack without the injury to the fruit. Since the early nineties squash breeders worked on developing cultivars with shorter and thicker necks, to reduce or eliminate these problems.

According to Richard, the simplest and easiest way to identify if we are dealing with a crook, semi-crook or a straight neck type of summer squash is to look at the shape of the “belly” and length and proportions of the “neck”. If the neck is thick and long and blends
with a belly forming a zucchini type shape or one slightly tapered shape, we are dealing with a straight neck type of summer squash. If the neck is shorter and thinner (maybe up to 1/3 the length of the fruit), crooked or slightly crooked or even almost straight in shape but the belly of the fruit has a ‘light bulb’ shape, this is in most cases a crook or semi-crook neck type of squash (Fig.6 and Fig.7).

(Figure 6)

(Figure 7.)

Sometimes the environmental factors like differences in temperature during the production season and pollination, fertilization and irrigation practices may influence changes in shape of the fruit from the specific field.
Suddenly the mystery was solved and Cecilia’s question answered. Yes, there are many shapes of a crookneck summer squash from the same cultivar, the same field and the same harvest.