Onion Farming in Ghana

SUPPIAH SINNADURAI AND JOHN F. ABU

Onions (*Allium cepa* L.) and shallots have been put to almost identical use in Ghana and one can hardly talk about onions without mentioning shallots as well. Though the origin of shallots has been traced by Sinnadurai (6), that of onions is not quite well known. The local names given to onions (European shallots) suggest that onions were not known in Ghana before Europeans came to the country. For example, the English translation of the Ga and Akan names for onions, “blofo sabolai” and “abrofo gyenee” respectively, are European shallots. The Hausas call onions as ‘albassa’ which has no meaning in relation to Europeans or white men. Shallots are virtually unknown in Hausa Land (most of Northern and Upper regions).

Apart from their usual uses as a flavourer in foods, appetizer and mouth refresher, onions and shallots are of medicinal importance in Ghana and other West African countries. When feverish the juice is rubbed on the body or taken in with palm oil (*Elaeis guineensis*) and hot pepper (*Capsicum frutescens*). The green leaves from harvested bulbs are rolled into balls and used in the same way as the bulbs, in the off season, in the Northern and Upper regions. In some parts of Ghana they are used as an antidote for snakebite. The scent of onions and shallots is said to repel snakes and they are planted near houses (4).

**HISTORY**

The onion commonly found in the markets of Ghana comes from the Upper Volta or the Upper Region of Ghana. The variety (cannot be called a cultivar because no selections have been made and the variety is therefore a heterogenous one), is called ‘Bawku’ since the town of Bawku is close to the border of Upper Volta and is a prominent trading centre in Northern Ghana. According to Adomako (1) onion was introduced into Ghana around 1930. It was first grown at Bugri, near Bawku in the Kusasi District of the Upper Region, and from there it spread to other parts of the Northern and Upper regions. It is now popular in the big urban towns in Ghana where the crop is grown more as green onion than for bulbs. The Kusasi District and the areas surrounding it still remain the most important for the cultivation of the variety. It may be assumed from Irvine (4) and Dalziel (3) that growing of onion was not common in Ghana in the 1930s for both of them have not mentioned onion as being a crop grown in Ghana. However, they did mention the shallot. Irvine and Dalziel have written about the cultivation of onions in Northern Nigeria and some of the ‘white-skinned,’ ‘purple-skinned’ and ‘red-skinned’ onions mentioned by Irvine (4) could be the ‘Bawku’ onion as there was, and still is, considerable trade in onions between the Hausas of Ghana and those in northern Nigeria.

**CHARACTERISTICS OF THE ‘BAWKU’ ONION**

The ‘Bawku’ onion is easily distinguished from other cultivars being grown in Ghana. It is compact in appearance with deep green leaves and very firm bulbs when mature. The bulbs vary in size, shape and colour. The largest bulb may have a diameter of about 8 cm, and the colours range from white through all shades of pink and purple to red. It is very pungent and is preferred to the foreign cultivars. Six years of research at Legon has shown that it is the only variety that flowers and produces seed under local field conditions. Seed to bulb to seed can be obtained in one growing season indicating that the variety is an annual. In the major growing areas of onion farming, over 95% of the plants flower during the growing season.

**CROPPING**

In the Northern and Upper regions of Ghana the normal growing season is from December to April during which period the
mean temperature of about 94°F (34°C) in December gradually rises to 102°F (39°C) in March and then decreases. The mean night temperature during this period is about 66°F (19°C) in December and January, and gradually increases to 79°F (26°C) in April. The day-length during this period is about 11 hr 45 min in December, increasing to about 12 hr 15 min in April. The crop is grown in lowlands or near dams and river valleys with irrigation. It is not possible to grow a crop of onions profitably during the same period in southern Ghana because of the warm day and night temperatures and the short day-length. The best growing season for the south is from June to October.

The mean day temperature during this period is about 85°F (30°C) in June with the temperature going down a few degrees in the months of July and August and then increasing up to about 88°F (31°C) in October. The mean night temperature during this period is between 72 to 73°F (22 to 23°C), and the day-length is 12 hr 25 min in June, and gradually decreases to 11 hr 55 min in late October. During this period onions can be profitably grown in the Northern and Upper regions on upland farms but is not done as the land is used for field crops like millet, groundnut, yam and bambara nut.

Seeds are sown in small nursery beds and the seedlings transplanted when they are about six weeks old. The nursery beds are normally 3 ft x 10 ft. A farmer may have many such nursery beds depending on the size of his farm. Seeds are sown on different dates so that the seedlings will not all be ready for transplanting at the same time. Planting in the field is in raised beds with no definite length and breadth. Manual labour is used in preparing the beds. Some beds are as wide as 8 ft and about 60 ft or more long while others may be as small as 4 ft x 10 ft. Beds are about 12 to 18 in high and are fertilized with a heavy dose of cattle manure. Commercial fertilizers like 10-10-10 and 15-15-15 mixtures are now being used on a small scale in addition to cattle manure. A handful of the fertilizer mixture is spread over an area of about 35 sq ft and incorporated into the soil. Well-rotted cattle manure is also ground and applied in a similar manner at least four times during the growing period of the crop. The large amount of cattle manure applied helps to keep the soil moist always.

Water is allowed to flow in the drains between the beds during each irrigation and the water transferred onto the bed by hand, using a calabash. This is a tedious process and it sometimes takes about four hours for a single male to irrigate one of the large beds. The farmer stands barefooted in the drains and does the irrigation. Sometimes he may have to put a foot on the bed and water the plants that are farther away.

Seedlings are spaced at about 4 to 5 in apart. Due to the cool night temperature the seedlings are established in about three days. Bulbing begins almost immediately. Sometimes bulbing is observed in the nursery if the seedlings are about six weeks old. Flower buds appear between 60 to 90 days from the time of sowing the seed, depending on the time of the year. Sinnadurai (5) observed that the variety was not consistent in its flowering habits in that in one instance it took 80 days to flower and in another it took 90 days though the temperature variations between the two seasons of growth did not vary appreciably. The high percentage of flowering in the 'Bawku' onion has the serious disadvantage of reducing bulb yield and quality. Farmers nip off the flower buds to increase the bulb diameter and thereby increase the yield. Plants in a part of the bed are left to flower to obtain seed. The immature flower stalks are sold in the market as a vegetable. The wounds left by nipping can cause infection in the field and in storage. With careful selection the percentage of flowering can be reduced over a period of time.

The yield is very much dependent on the climate during the growing season and thus is very unpredictable. Very often the yield does not exceed 2,000 lb but when the weather is cool during the night and warm during the day, higher yields can be obtained with fertilizers. The low yield may also be an inherent character since no selections were made for bulb size and colour. Bettson (2) conducted experiments to compare the 'Bawku' variety with foreign cultivars and reported that foreign cultivars performed significantly better than the 'Bawku' in the Bawku District and recommended some foreign cultivars to farmers. Since most