Getting the Best from your Jambar F1

By Daniel Musyoka

O

nion is a key vegetable crop in the region, being one of the most widely consumed vegetables it both very marketable and profitable. In East Africa onions are successfully grown on both large and small scale farms. As with any crop, proper management of the crop from seeding to harvest is essential for farming success. We share some of these crop management tips with you. Try them out as you grow our short-day red onion Jambar F1!

Climatic Requirements

Onions can be grown in a wide range of climatic conditions, they are quite hardy and can tolerate temperatures as low as -6°C. However, good bulb formation requires temperatures from 15.5°C with an optimum temperature range of 21-27°C, coupled with the correct day-length. Short day onions such as Jambar F1 have 11.5 - 12.5 hours day-length threshold for bulb formation.

Rain and humidity are important factors during the seedling stage, bulbing and harvesting. Cool wet conditions at the seedling stage result in increased fungal diseases.

Soil Requirements

- Onions do best in well-drained soils that are at least 650 mm deep, shallow soil may be utilized, but with adaptations in management practices.
- Ensure a pH range of 6.0 - 6.8; lower pH levels can result in problems with regard micronutrient uptake.
- Though onions can be produced on a wide range of soil types, avoid heavy soils as these may lead to problems such as bad aeration, crustling and a blemished product of lower quality.

Seedbed Preparation

- On well drained soils, prepare a fine and even seedbed.
- It is advisable to use seeding trays to ensure that little or no seed is lost during this process.
- Commercial plant raisers can help farmers raise healthy seedlings for use.

Fertilization

Fertilizer applications should be determined by a soil analysis. Most onion roots are in a 15cm radius from the stem and therefore are shallow feeders. If the soil pH is less than 6 or the available calcium is less than 2300kg per hectare, apply and incorporate agricultural lime at the rate of 2500kg per hectare about 8-12 weeks prior to planting. Lime requires time to react with acid soils to raise the pH.

In soils low in phosphorus apply and incorporate approximately 94kg of phosphate per hectare. Generally, it is suggested that the phosphate be banded 6 - 8.5cm below and on both sides of the rows where onions will be planted.

Nitrogen applications are critical in terms of quantity and timing of application. The amount of nitrogen supplied depends on the soil analysis. Poor soils may require up to 180kg/hectare for direct sown crops. Average soils would need lower levels - 120-140kg/hectare.

Soils low in potassium require an application of 100kg/hectare before planting. The remaining potassium can be applied with the first nitrogen application at a rate of 85kg/hectare. (Three weeks after transplant or when seedling has reached 3-leaf stage.)

In applying pre-plant fertilizers it is best to band 6 to 8cm below the seed or transplant, rather than broadcasting and incorporating.

Transplanting Seedlings

- Seedlings are usually ready 8 to 10 weeks after seeding, when the majority of the seedlings necks are pencil-size (65-80mm) in diameter, 13.5-30cm tall and have 4 to 5 leaves.
- If irrigating, ensure systems ready, so that irrigation can commence immediately after transplanting to prevent losses of the plant population.
- Plant Spacing: 20-30cm between rows x 8cm within the row
- Approximate plant population is 500,000 plants per hectare.

Irrigation

When planting under irrigation:

- Irrigate soil to field capacity before planting in order to build up

Continued on pg. 3 ...
In the Spotlight

Carrot Karina
By Jared Onduso

Combines best features of Nantes, Imperator and Kuroda carrots to produce great length, shape, colour, sweet taste and high beta carotene.

Features

• Heavy yielder - Nantes-type with higher percentage of marketable carrots.
• Suitable for fresh market and processing
• Resistance to Alternaria and high tolerance to powdery mildew
• Large and vigorous foliage with strong root attachment
• Excellent core and external colour with minimal green shoulder.
• Early maturing, harvestable in 85-125 days from sowing.
• The root shape is very uniform, near cylindrical with an average length of 18-22 cm
• Exceptional orange colour and flavour.
• Excellent tolerance to breakage and cracking.

Benefits

• Higher returns as it is a higher yielder - 22-25t/acre
• Wider market as the variety suitable for both processing and fresh markets
• Reduced cost of production with less fungicide as the variety has higher disease tolerance
• Ready market as it has quality, therefore higher demand in the market
• Less farm wastage as roots are market-quality, there’s also reduced breakages and cracking.

Word from Management

The bountiful harvest enjoyed by our farmers endorses the benefits of growing hybrids in these uncertain times, when climate change and market fluctuations make it challenging for the farmer to plan his/her production cycles. As always, we at Monsanto have continued to walk the journey with farmers; in the past year we brought varieties that yield better and are more resistant to diseases, thus reducing the risks of farming out in the open.

In the year ending we have introduced a cross-section of hybrids including Carrot Karina F1, our latest addition, which promises to increase both yield and marketability of the crop.

We are setting a benchmark in the market through improvements in the quality of produce and reduction of post-harvest wastage. In line with this, we have in the past year introduced hybrid varieties; Cucumber Darina F1, a high yielding American slicing Cucumber; watermelon Sentinel, a juicy long shelf-life watermelon; Carrot Karina F1, which is high yielding and produces uniform-sized carrots at harvest.

Our new hybrids add to Monsanto’s growing hybrid portfolio in East Africa, which includes Red Onion Jambar F1; Tomatoes Assila F1, Anna F1 and Eden F1, just to mention a few. These varieties are already contributing to an improved quality of products from our farms.

As we start the year we would like to thank all our customers, both farmers and distributors, for the support you have given us so far. We make a commitment to working together at selecting varieties that will improve the standard of farming by bettering production and reducing the uncertainties related to farming in this region.

As we work towards curbing the challenges and improving on farming, we take this opportunity to wish you a prosperous year 2013.

Elizabeth Mranda
Monsanto at the Seed Traders Congress  By David Ndung’u

The first ever STAK (Seed Trade Association of Kenya) Congress and Expo took place in Nairobi from the 13th - 15th November, 2012. The congress, which coincided with the 30th Anniversary of STAK, brought together seed companies, agro-chemicals, research institutions, the Government of Kenya, universities, farmers and students to discuss a small but very important part of plant life – the seed.

Monsanto (K) Ltd took a lead role in both organization of the congress and sponsorship.

Under the theme “delivering agricultural innovations for economic growth”, various presentations were made touching on recent developments in seed trade in Kenya, the greater Africa and on the global front.

The topics covered during the two-day event included:
• Status of the global seed industry
• Status of the Kenya Seed Industry
• Status of the MLN disease globally and in Kenya
• Research efforts to manage the MLN disease
• Improving seed quality, the challenges faced in seed production
• Update on the role of biotechnology in Africa

Please visit STAK website at www.stak.or.ke to read and view these important topics which will have a great impact in development of seed business in Kenya and the African region.

moisture reserves for later use by the crop.
• Irrigate 3-5mm daily after transplanting so as to keep the soil cool and moist.
• Direct seeded onions growing under hot dry conditions may require two irrigation cycles per day.
• Water shortage at any stage during growth may result in decreasing yields. Adequate watering promotes good growth and helps keep the soil firm around the onion bulb. Cracks in soil and inconsistent soil pressure around the onion bulb, result misshaped onions.
• Do not over-irrigate as onion bulbs that are over-watered tend to be soft with a poor shelf life.

Weed Management
• Onions develop slower than other vegetable crops and are more susceptible to weed competition especially during the early growth stages, this can result in yield losses.
• Weeds can be controlled successfully through either pre- or post emergence herbicides, use only registered products.
• Care should be taken to avoid damage to the bulbs when mechanical weed control measures are used.

Pest and Disease Control
Thrips are the major pest in onions, if not controlled they can cause reduction in quality and quantity of produce. A number of diseases do attack onions but the major ones include; Downey mildew and purple blotch. Most diseases that occur in onions can be controlled through management practices, by growing resistant cultivars and chemical sprays.

Harvesting and Handling of Onions
• Harvest when about 50 percent of the plants have lodged;
The quietly deceptive suburb of Nansana, six miles northwest of Kampala’s city centre, has become synonymous with excellence in agriculture. Two successful, hybrid crop expositions were held in December 2011 and June 2012. These growers’ training events were beamed across the nation on national television.

Mrs. Kazibwe farms in Nansana and is the place where she cultivated the first ever greenhouse hybrid red sweet pepper in Kampala district. “It was interesting to observe that all the coloured pepper sold in our malls was imported yet we had the capacity to produce it here. This is when I decided to set up a 15M X 8M greenhouse and grow hybrid sweet pepper Red Knight F1 for both demonstration and commercial purposes,” Mrs. Kazibwe explains.

Fortunately for Mrs. Kazibwe, she doesn’t have to sell to these outlets because the number of walk-in consumers coming to purchase the produce ‘at source’ is overwhelming and she can barely cope with the demand. “Most clients now make an advance booking for the fruits” she gladly says. A kilo at the farm goes for Ush 8,000 which is a more competitive price than what is offered at the malls and not to mention the priceless experience of a farm fresh purchase.

Besides farming, she spends a considerable amount of time training farmers. Every week, an average of 30 farmers from all over the country are trained on the production of hybrid crops she grows in her farm, these include; tomatoes Assila, Anna and Eden; cabbages Blue dynasty and Victoria; onion Jambar; sweet pepper Tycoon, and watermelon Pata Negra, earning her accolades from the public.

“I currently have 350 plants which bore large blocky fruits that turned brilliant red 80 days after transplanting. It was amazing and deeply satisfying to realize I had matched what the likes of Nakumatt, Shoprite, and Uchumi were looking for.”

DK8031 withstands the challenges of drought and under minimal management the farmer can harvest between 26-36 bags of dry maize. Its a variety that suits a range of agro-ecological zones, it is a variety that keeps the farmers hope alive,” he says, attributing this to its peculiar drought tolerance and early-maturing characteristics. Having applied all that he learned at the field day Mr Njau now awaits a bumper harvest this season. As Monsanto staff visited his farm recently, he had this to say, “I have been planting other maize varieties every season and I never had enough for my family, but now I see that I can with DK8031, I can produce enough for my household and to sell”.

Though the rains were not enough, the farmer has a stable crop in his farm and this gives him peace of mind. He can rest assured of a good harvest.
Mr. Ndile farms under extremely hot and dry weather conditions in Mbeere – Embu County. The area gets very little rain each year or sometimes, none at all. Using irrigation, he was able to successfully grow Monsanto’s Sentinel watermelon on his farm.

“This is the first time I have planted Sentinel Watermelon and the results have really impressed me; we have just finished harvesting from my 2-acre piece and I have worked out my yield to about 120 tonnes per acre. What’s more is that each melon weighs 14-18.5 kilos on average and is very sweet and juicy.

Nothing that I did was out of the ordinary; I watered my crop once each day, did 2 applications of top dressing throughout the growing period and took good care of my plants. With average plant feeding, Sentinel has given me a great harvest. I believe it all boils down to good seed and good farming. As you can see my harvest speaks for itself.

This is not my first time to grow watermelon from Monsanto. Last time round, I grew Pata Negra F1 and was happy with it, that’s why I decided to try something new from Monsanto.

does well both in the main coffee growing zones and coffee/marginal tea zones. It’s an early maturing variety, which means that a farmer can have food on table early enough before any other variety is ready. This makes it the variety for food security.

Besides DK8031, is another smart flint variety DKC80-53 which is very suitable for green maize. It can grow well even in areas where irrigation is done - where green-maize market is a profitable undertaking.

Monsanto maize varieties are packed in 2kgs packets and one can easily see through the packet. They are readily available in all agro-shops near the reach of farmers.

NB: DKC90-89 is coming into the market very soon. Please inquire from your local Agro-shop.

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Juicy Rewards for Mbeere Farmer with Watermelon Sentinel  By Isaac Nzuka

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Pg. 8 crossword puzzle answers

<table>
<thead>
<tr>
<th>Across</th>
<th>Down</th>
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<tbody>
<tr>
<td>4. Assila</td>
<td>1. Karina</td>
</tr>
<tr>
<td>6. Eden</td>
<td>2. Blue Dynasty</td>
</tr>
<tr>
<td>7. Sentinel</td>
<td>3. Jambar</td>
</tr>
<tr>
<td>9. Pata Negra</td>
<td>5. Red Knight</td>
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<tr>
<td>11. Anna</td>
<td>8. Darina</td>
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<tr>
<td>12. Victoria</td>
<td>10. Dekalb</td>
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</table>
Recipe: Homemade Tomato Sauce
By Nashone Mukabane

Ingredients
- 1 tbsp olive oil
- 2 onions, chopped
- 1 thumb-size piece fresh root ginger, finely chopped or grated
- 2 garlic cloves, chopped
- 1 red chilli, deseeded and finely chopped
- 800g tomatoes, briefly whizzed in a food processor or finely chopped
- 100g dark brown sugar
- 100ml red wine vinegar
- 2 tbsp tomato purée
- coriander seeds

Method
1. Heat the oil in a large, deep pan, then fry the onions, ginger, garlic and chilli for 10-15 mins until soft. Add the remaining ingredients and some seasoning, then boil for 30 mins, stirring occasionally, until the mixture has thickened and is sticky.

2. Cool slightly, then whizz in a blender or food processor until smooth. If the sauce is a bit thick for your liking, stir in a dribble of boiling water. Sieve, then funnel into a bottle or jar while still hot. Cool completely before serving. Will keep for 3 months in the fridge.
Do Poor Ventilation and Excessive Heat Affect Production in My Greenhouse?

By Samson Opala

Yes they do; the effect caused by the poor ventilation and heat in combination can be disastrous and cannot be overemphasised. In the event that proper and adequate ventilation is not provided within the greenhouse (especially during hot weather) then build-up of excess heat is inevitable.

Although excess heat seems synonymous to Kenya and other parts of Eastern Africa, once a greenhouse is constructed, the problem is magnified. It is important to know that the growth of a plant is directly related to temperature; the hotter it is the faster they grow. However, it is worth noting that photosynthesis -the process used to trap the sun energy and turn it into sugar- slows at about 28°C - 30°C and May eventually stop around 35°C. When this occurs, photosynthesis stops but growth continues to increase at the expense of sugars made when the plant was cooler.

Simply put, when the farmer allows these high temperatures to exist he or she is actually making the plant grow faster than it is capable and at the same time causing the plant to use up previously stored energy. If this continues for several days the plants become weaker, stems elongate, fruit growth is slow, and fruit is of poor taste and poor quality. This is often accompanied by flower and fruit abortion.

In the case of tomato, pollination of the flowers is vital to facilitate the development of fruit. When the humidity is very high, pollen tends to stick together; implying minimum pollination takes place and as a result few fruits develop or they may mature very small.

In addition, excess heat implies hot air is present and this contains far more water than cool air. Measurement of this water content is called Relative humidity. When the greenhouse cools in the evening, the air cannot hold as much water and it condenses on everything present i.e. leaves, fruits etc.

Spores of diseases such as bacteria and fungi are like tiny seeds. Many float around in the air whereas others are transferred from place by feet, hands and tools. In order to germinate attack a plant leaf or fruit, they must have a particular temperature range, a film of water and time. This time requirement is usually only 4-6 hours depending on the disease and temperature required. In short, as the temperatures fall in the evening, water condenses on the leaves and leaves are wet for many hours. If spores are present these diseases will have penetrated the plants by morning.

Growers often apply excess water during times of excessive temperature. Unfortunately most soils in this region are very fine textured and can contain much water at the expense of soil oxygen. Low oxygen rates results in slow growth, blossom end rot and high incidences of diseases such as bacterial stem rot, phytophthora, pythium and other related organisms.

THE SOLUTION
Excess heat is the primary reason for poor crop yield, quality and ultimately business failure. For this reason all aspects of greenhouse management, construction, production and later marketing must begin with a broad discussion of excess heat.

A few tips below could help in maintaining favourable temperatures in the greenhouse.
- Make sure you construct a greenhouse that has provisions for ventilation; when temperature is too hot.
- Always remember to open the side vents to facilitate free flow of air but when it is too cold, the side vents should remain closed. This helps maintain favorable temperatures within the greenhouse.
- It is vital to select a greenhouse design that has ventilation provisions in the roofing as well as on the sides: for effective ventilation.
Ronak is situated in the heart of Western Kenya, in Bungoma town. The agrovet dealer is found on Moi Avenue across the street from the National Bank. Ronak started off in 2005 as Ronak Chemists, dealing in both Agrochemicals and Human health products. In 2008, the agrovet was set up as a separate shop in its current location.

Ronak deals in agrochemicals, vegetable and maize seeds. The Monsanto products found in this shop include: Dekalb maize seed, Tomato hybrids Anna, Assila and Eden; Onions Red creole and Jambar F1; Watermelon Patanegra and Sentinel F1. As it stands today, Ronak is one of the biggest dealers of Dekalb maize seed in the country.

“Our aim is to reach more farmers within Western Province as well as the neighbouring Nyanza and Rift Valley Provinces. We wish the Western farming population would embrace vegetable hybrid seeds as well as they have done with the Dekalb maize hybrids. This would not only improve production by farmers but would ultimately increase their income from the farm,” says Ronak’s proprietor Harikrishna Patel.

Mr. Patel says his association with the Company has been worthwhile, “We are happy with Monsanto’s support as they offer the technical information needed by the farming community as well as passing much-needed knowledge to our willing staff.”

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**Puzzle:** See just how well you know our hybrid varieties (answers on page 5)

**Monsanto Hybrid Varieties**

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<thead>
<tr>
<th>Across</th>
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<tbody>
<tr>
<td>4. It is resistant to TYLCV, oval-shaped and can give up to 25 tonnes of tomato per acre</td>
<td>1. Uniformed-shaped carrot with great colour and taste for the fresh market</td>
</tr>
<tr>
<td>6. Yields up to 50 tonnes per acre of Grade 1 and 2 Tomatoes</td>
<td>2. This cabbage has good tolerance to Black Rot and Diamond Back Moth (DBM) (2 Words)</td>
</tr>
<tr>
<td>7. A high yielding oblong to blocky shaped zebra variety</td>
<td>5. An onion with deep red bulbs and dries well in the farm</td>
</tr>
<tr>
<td>9. This watermelon has a dark skin and brilliant red flesh that is crisp and sweet (2 Words)</td>
<td>8. Our dark green cucumber which yields up to 30 tonnes per acre</td>
</tr>
<tr>
<td>11. An ideal tomato for growing in the greenhouse</td>
<td>10. Monsanto’s hybrid maize brand</td>
</tr>
</tbody>
</table>

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**Meet our CLIENTS**

L-R- Monsanto’s Nathan Koskei, Ronak proprietor HariKrishna Patel with shop attendant Beata Kamene

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**Bungoma’s Ronak Agrovet**

By Nathan Koskei