



Pruva:
A New Beit Alpha
Cucumber

Gray Mold in tomato:
Botrytis
Cinerea

Interview with
Ofer Ben-Zvi
Marketing & Sales Manager
at Zeraim Gedera

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From the editor's desk /

Dear Readers,

The year 2010 is behind us, and like everyone else, we have decided to focus in this issue on a summary of the year that was and recommendations for the new year.

The year 2010 was an outstanding one from our standpoint. *Zeraim Gedera* consolidated its status as a global company, and our many years of hard work in various markets finally paid off. You can read at length about our markets and how we work with them in a special interview with *Ofer Ben-Zvi*, Marketing and Sales Manager at *Zeraim Gedera*. Ofer describes the past year in detail, but no less importantly, he discusses the company's new customer-centered strategy. He talks about the new Gro-N-Tech unit (Growing Optimization and Technology), whose goal is to find the best way to obtain optimum harvests, and about our pilot project for an online customer-service system.

Years tend to begin with aspirations for innovation and improvement, and in this issue you will find an article on a new cucumber variety - the *Pruva*, which is the result of five years of development and extensive observations worldwide. The *Pruva* is specially designed for the hot Mediterranean climate and showed excellent results in the scorching summer of 2010 in Israel and abroad.

The NAFTA market showed very good results this year, with a significant breakthrough in watermelons. In this issue you will find broad coverage of watermelons, including an article by Woody Speir on personal watermelons, one by Alejandro Zuniga on grafted watermelons, and one by Robert Arriaga on watermelons in West Texas.

And while we're on the subject of year-end wrap-ups and global companies, we can't help but mention our model hothouse on the Assouline farm on Moshav Mivtahim in Israel. This hothouse serves as a microcosm for our various tomatoes grown around the world. It is there that most of the experimenting is done and most of the crops are grown. This issue has a detailed article on the subject by Igal Flash and Zvi Wener.

I wish our readers a successful year. May it be a year of peace, growth, and prosperity, both economic and social, and may we leverage the good so as to make the world a better place to live.

Yours,
Orit Naim Pery
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The year 2010 was an outstanding one from our standpoint. *Zeraim Gedera* consolidated its status as a global company, and our many years of hard work in various markets finally paid off.

Interview with Ofer Ben-Zvi

Orit Naim-Pery, Editor, orit.npery@zeraim.com

➤ The year 2010 is behind us. For the January 2011 issue, I interviewed Ofer Ben-Zvi, marketing and sales Manager at Zeraim Gedera, to hear how he sums up the past year. What are the outstanding trends in the various markets and what are the plans for the future?

At the very beginning of our conversation, even before we went into detail, Ofer told me briefly that 2010 was an excellent year, one of the company's best ever, with an increase of close to 20% in sales.

In addition, Ofer noted that sales had increased substantially in almost all the markets. "We are reaping the fruits of years of hard work combined with the right marketing strategy."



Close ties with our customers, augmentation of our agrotechnical knowledge, and service to farmers give us an opportunity to become thoroughly familiar with market requirements. This approach helps us enlarge our customer base and increase customers' satisfaction.

Were there certain outstanding successes in the company's products that you would like to mention?

In terms of the company's products, it can be said that this year we were able to reap the fruits of our investment in previous years in a range of tomato and watermelon varieties. After many years in which peppers were the main engine for the company's growth, in 2009, and even more so in 2010, tomatoes and watermelons contributed to a substantial rise in overall sales as well. At the same time, we are continuing to work with the pepper team, headed by Dr. Yoni Elkind of the Faculty of Agriculture, on enhancing our competitive ability in the market so that we can respond even better to changing requirements.

What caused the change?

- It's hard to point to a single factor. In my opinion, there were several concurrent processes that together created the momentum and opportunities. For example:
- Making the most of opportunities and correctly perceiving market trends in substantial segments in Turkey: A combination of good timing of product penetration, a dynamic marketing team, and varieties that met the needs satisfied the demand for TYLCV-resistant tomatoes optimally and led to the success of the Linda and the Allegro (tomato varieties that are new to the Turkish market).
- Maturation of the development plan and intense, in-depth work with *Syngenta* reliance on *Syngenta*'s extensive marketing and sales infrastructure and the depth of the company's R&D plans, together with a suitable marketing strategy backed by *Syngenta* for our main markets and with very strong support from Amnon Eshet as CEO of the company in Israel.
- Close ties with our customers, augmentation of our agrotechnical knowledge, and service to farmers give us an opportunity to become thoroughly familiar with market requirements. This approach helps us enlarge our customer base and increase customers' satisfaction.

Which are the main markets that contributed to the success?

In 2010, newly profitable markets made a substantial contribution. If until 2009 Spain was one of the fastest-growing markets, recently Turkey, Israel, NAFTA (US and Mexico), Morocco, and Egypt have been added to the list. Each of these markets had a sizable part in the increase in sales.

TURKEY

Until about a year and a half ago, our marketing in Turkey was done through a distributor. About 16 months ago, we started working independently and formed a marketing and sales team. Thanks to the professional management of Josh Peleg and Lutfu Sav along with Avi Shamir's many years of experience, we formed a high-quality, very ambitious professional team that was won large segments of the market in its very first year.

The NAFTA market showed impressive results this year. After years of consolidation, we started seeing an extremely significant increase in sales this year both in Mexico and in the United States.

One opportunity that contributed to the success was the demand for TYLCV-resistant tomatoes. The Turkish team was able to leverage the opportunity and introduce the Linda and Allegro varieties, which in addition to being resistant to TYLCV, have excellent yield and a uniform, high-quality fruit. The Turkish market contributed very high percentages to *Zeraim Gedera's* aggregate ability in 2010. Because it is one of our main markets, we created a business plan together with our colleagues at *Syngenta* that specifies the activity of each brand (S&G and *Zeraim Gedera*). The joint country strategy is based on the co-competition model (for more detail, see pages 10–11). Unquestionably, the co-competition project has been a tremendous success—one that is unparalleled, as far as I know, in the seeds industry.

NAFTA

The NAFTA market showed impressive results this year. After years of consolidation, we started seeing an extremely significant increase in sales this year both in Mexico and in the United States.

There was a huge breakthrough in watermelons in NAFTA in general, and in the United States in particular, under the management of José Luis Gonzalez and Meir Peretz. Performance in 2010 was enormously successful, and we have high expectations for 2011.

In the Mexican market, we are experiencing great success. After many years of investing in cooperation with several key customers, we are now seeing substantial progress.

Looking towards 2011, we have high expectations for the NAFTA market. We are reinforcing our sales teams and agronomical support team so that they can meet the ambitious sales targets and provide the level of service for which we strive.

MOROCCO AND EGYPT

In Morocco and Egypt we work through distributors, who are doing an excellent job. Recently we changed the way we work with the distributors. We are much more involved now in product advancement process, and our product managers are supporting the distributor team in terms of identifying the appropriate products and pushing them into the right markets.

The combination of support from the product managers at *Zeraim Gedera* and aggressive sales work by the distributors has proven itself. When we add to the equation the very ambitious push provided by our Middle East area manager, Machmud Azaiza, we definitely see good results.

ISRAEL

I have left the Israeli market for last—last but not least. This market is highly important, and major steps have definitely been taken to increase sales in Israel. The Israeli market is the basis from which we learn and draw conclusions to apply to the other markets as well.

The Israeli market is wrapping up an outstanding year in terms of meeting sales targets and improving profitability. With the help of the *Syngenta* platform, *Zeraim Gedera* is consolidating its status as one of the leading companies in Israel.

The strategy in 2010 was to put the customer at the center and improve technical support for our customers. During the year we formed a team headed by Amir Frechtman, manager of the Israeli market, known as the "Arava Team." Its goal is to keep close track of crop development in this important region. The team, made up of a wide range of professionals, including marketing people, product people, agrotechnical support staff, developers, and farmers, can together offer our customers a total professional response. The team members meet once every two weeks to decide on clear guidelines for farmers, and once a month they issue a bulletin containing extensive information for farmers. The idea is to provide our customers with after-sales service—intensive advice and guidance on all levels (for more detail, see pages 10–11).

Meanwhile, we are also launching a pilot program for customer service. The program, based on text messages, is designed to provide a rapid response to various problems that farmers experience.

In order to support all the steps that *Zeraim Gedera* is taking for customers, we have established the Gro-N-Tec Unit (Growing Optimization and Technology). This unit,

headed by Yoram Paciuk, was established to find the best way to maximize the potential of our genetics work. The purpose of the new unit, which interacts with the product promotion process (also headed by Yoram), is to develop cultivation protocols and create tangible, practical knowledge that can help the farmers and others in the supply chain succeed—both in agrotechnical matters and in terms of fruit quality after harvesting (taste, color, shape, shelf life, etc.).

We consider this unit very important to the company and its customers in Israel and abroad; some of the company's top people are focusing on the development of Gro-N-Tec. In the coming years, we will reinforce the unit as much as possible in order to benefit our customers by providing added value to the genetics process in which we specialize.

How are all the markets connected?

All the markets and all the marketing projects are supported by the MarCom (marketing communication) Department headed by Tamir Basson. This department maintains connections among all the markets and reinforces the company's values by means of various communication activities: marketing conferences, open houses, international exhibitions, product sheets, and other publications. Although each market has the marketing campaign that is best suited to its target population, the MarCom Department makes sure to preserve a uniform appearance that reflects the values of *Zeraim Gedera*.

How do you expect to sum up 2011?

As part of *Syngenta's* policy, *Zeraim Gedera* will continue investing and leading to the best of its ability in the areas in which it specializes. We will strengthen our ties with the farmers and with our other partners in the supply chain in order to create additional value for our customers, bringing the new wave of success to the company as an innovative leader. We will continue to do our best to provide our customers the best service.

I take this opportunity to wish all our customers a year of activity and satisfaction in everything they do. May we contribute to the success of our customers. And most importantly, I wish our customers and all their families good health.



We Hope You Take It,

Woody Speir, Sales and Product Development Coordinator, woody.speir@zeraim.com

Personal watermelons account for about 12% of retail sales, according to the United States Department of Agriculture research. Who's most likely to buy one? People living in urban areas located in the West, Northeast, MidSouth and Great Lakes regions according to the National Watermelon Promotion Board's statistics on retail sales. Between the 2009 and 2010 growing years, personal watermelon retail sales grew 10.89% nationwide as compared to 3.5% growth of large type watermelons. Zeraim Gedera is positioning itself to participate in this steady growth in the personal segment and presently offers two personal watermelons that are being produced across North America, Mexico, Guatemala, and Honduras.

Zeraim Gedera's commercial personal watermelons are Summer Bite and Sugar Bite. Summer Bite is a personal watermelon with a jubilee rind pattern. It is early maturing with average maturity at 80 days. It is a very aggressive plant

with very high yield potential and concentrated harvest. This can be a very good benefit when the grower desires to keep harvest intervals short and therefore reduce inputs needed to prolong vines such as irrigation, chemicals, fertilizer, etc. Summer Bite typically produces fruit sizes in the range of 6 to 8 pounds and box counts of 6 and 8 count. Summer Bite is firm, has great sugar concentration, and is widely adaptable along the East coast.

Sugar Bite is also a personal watermelon with a jubilee rind pattern. It produces fruit in approximately 87 days and offers an extended harvest window. Fruit have firm flesh with a deep red color. Fruit sizes range from 5 to 7 pounds with most fruit in the 8 box count range. Both Sugar Bite and Summer Bite have a medium thickness rind which offers the ability to bulk bin

Ed, What does FCMG see in the personal watermelon market?

"We believe the personal market will probably level at between 8 to 10% and remain there. Personal watermelons for FCMG are better in the winter months as there is less competition with large types during this time."

What are some of the challenges of producing personal watermelons?

"Maturity timing. Producing a specified amount of watermelons for a specific time period is a challenge. When you are dealing

Ed, What does FCMG see in the personal watermelon market?

"We believe the personal market will probably level at between 8 to 10% and remain there. Personal watermelons for FCMG are better in the winter months as there is less competition with large types during this time."



Summer Bite

fruit. Both varieties are available for sale as seed or through Zeraim Gedera's PlantSense plant program.

I recently had the opportunity to speak with Ed Walker about his company's personal watermelon business and to ask him a few questions regarding this segment of the industry. Ed is Co-Owner of Lewis Taylor Farms'- First Choice Melon Growers. First Choice Melon Growers are grower/shippers of watermelons in Florida, Georgia, South Carolina, and Indiana.

with the unknowns of the environment, it is always a challenge. Also, finding the ideal variety and its ideal growing conditions. Each watermelon has a unique combination of growing factors that optimizes its potential. We have to find that".

What are some of the limiting factors that prevent more market penetration of the personal segment?

"In our time slot, from spring to fall, mini's have to compete with conventional watermelons. When the shopper sees both at the same price, they choose the larger type because of perceived value. More is invested in the personal from harvest. More labor, seed cost, and if boxed more in shipping cost. This cost must be recouped by a large enough differential between large type and personal".

What types of personal watermelons does FCMG offer, and when are they available?

"FCMG personal watermelons are available two weeks before memorial day through November. We offer Tiger stripes and Crimson sweet type personal watermelons".



"Personal"



Sugar Bite

... production forces would push for the development of thicker rinds as this would facilitate easier shipping and less damage to fruit as they are harvested in bulk bins. Market forces however demand the opposite as thinner rinds offer more internal flesh, less waste which results in better recovery, and a better overall presentation when cut.

Describe what characteristics FCMG personal watermelons must have now.

"What I would like to have, is disease tolerance, namely Pythphthora. A personal that will not hollow heart, that eats good, has a good brix, and a shelf life of at least 10 days. The size is very important as we need mostly 6 counts with some eights. Personals must be binnable and cannot have black seed. It is also important that they not have a mealy appearance. Personals need a good way to determine optimum maturity which makes harvesting more accurate and efficient."

THE BALANCE INVOLVED IN PRODUCT DEVELOPMENT AND ZERAIM GEDERA'S PIPELINE

Developing a personal watermelon that offers the characteristics mentioned above and those that are needed by the market requires a delicate balance. There are essentially two forces at work that at many times oppose one another with those being production and market forces. For example, production forces would push for the development of thicker rinds as this would facilitate easier shipping and less damage to fruit as they are harvested in bulk bins. Market forces however demand the opposite as thinner rinds offer more internal flesh, less waste which results in better recovery, and a better overall presentation when cut. For years, the seed industry has tended to focus more on the production forces and given less attention to market forces. While this satisfies the production side of the industry and insures large quantities of product are produced, it does not satisfy the actual desire of the market. This method leads to lower overall satisfaction from the consumer and begins a cascade of events that leads back through the production channel with lower demand and smaller profits.

The challenge of product development is to find the correct balance between these two forces and deliver a personal watermelon that motivates each. When the consumer takes a bite of our product, and the presentation, taste, and experience results in a "Wow" moment, we have met our objective and have the "pull through" effect that makes the whole process hum. It takes huge investments of time and energy to bring products that even have a chance to make this a reality. Thousands of crosses between various parental lines result in a handful of products that finally fill the pipeline. *Zeraim Gedera's* pipeline is rich

with many new products aimed at meeting this delicate balance. Two new jubilee type personal watermelons will be debuting in fields across the East Coast this year in block trials. These new additions to the *Zeraim Gedera* watermelon portfolio will offer added value through various characteristics such as improved shape, size, lower temperature fruit setting ability and others. Yellow Bite will be added to meet the need of those who desire a bright luminescent yellow flesh color instead of traditional red. And to satisfy the demand for a crimson sweet type personal, *Sweet Bite* will be offered. It is a crimson sweet mini loaded with features such as earliness, uniformity, wide adaptability, and great flavor.

Zeraim Gedera is committed to the personal watermelon segment and is confident that the products, service, knowledge base, and expertise offered, will provide the necessary ingredients for success for those involved in the production and marketing of personal watermelons ■



Grafting Watermelons: A Further Step Towards Sustainability In Sonora

Alejandro Zúñiga Ochoa, Area Business Manager, Sonora, alejandro.zuniga@Syngenta.com

Fruit and vegetable farming is one of the most important activities in Mexico's agricultural sector. Watermelons are one of the main crops, and the state of Sonora is one of Mexico's top watermelon producers.

In 1997, tests started to be carried out on grafting watermelons onto gourds in Sonora. However, it was not until 2008 when the technique started to be used for commercial purposes.

Grafting is now used to grow fruits like watermelons in order to overcome soil problems. The technique helps in various ways, increasing tolerance to soil diseases (fusarium, nematodes, etc...) and improving water and nutrient absorption, resulting in more vigorous plant growth. This means that fewer plants need to be grown per hectare, making the farming more sustainable, as using rootstocks increases the number of fruits per plant.

Grafting was first used in Japan and Korea towards the end of the 1920s, when watermelons (*Citrullus lanatus* (Thunb.) Matsum. & Nakai) were grafted onto a gourd rootstock (Lee, 1994). Since then, the amount of land used to grow grafted fruit and vegetable plants has increased dramatically around the world, bringing with it an increase in the amount of technology and tools available for this technique.

In the state of Sonora, two types of watermelon are grown: diploids and triploids. Triploids are more important because they are grown for both the export market and for domestic consumption. The main valleys where watermelons are produced in Sonora are the Guaymas valley and the Hermosillo coastal valley. Between them, these two valleys account for approximately 90% of the state's total planted surface area. There are two growing seasons each year. The first of these, in summer/autumn, is shorter and produces smaller yields. In the second, the plants are transplanted at the end of autumn



and beginning of winter, and harvested in spring. A larger area of land is planted, the yields are higher, and the use of grafting techniques is more economically viable.

In 1997, tests started to be carried out on grafting watermelons onto gourds in Sonora. However, it was not until 2008 when the technique started to be used for commercial purposes. This was due to problems with the soil as well as restrictions on the use of fumigants such as methyl bromide. The Guaymas valley has made the most use of this technique, and grafted plants now account for more than 50% of planted land in the valley.

One of the main limitations when it comes to growing grafted watermelons here is that no local company provides a commercial grafting service. This means that farmers have to look for service providers based in other Mexican states such as Colima, Jalisco, Michoacán, etc... This leads to increased production costs.

Spotting an opportunity, Zeraim Mexico started to develop and test new varieties, and now has a commercial variety called Super Shintoza,



which is highly adaptable to the region and the different varieties produced both by competitors and Zeraim itself (Sugared, Sugar Coat and Crisp N Sweet) ■



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West Texas Watermelons

Robert Arriaga, Business Area Manager, robert.arriaga@zeraim.com

➤ It's summer in West Texas, and that means the watermelon crop is ready for harvest. Nestled between thousands of acres of cotton and peanut fields in Texas is America's favorite summertime treat: the sweet, refreshing watermelon. With more than 5,000 acres planted in the area known as the High Plains, this crop is all about family tradition, challenges, and rewards.

FAMILY TRADITION

This summer, the *Zeraim Gedera* watermelon team (Meir Peretz and Robert Arriaga), along with one of our key dealers (Javier Torres of Keithly-Williams Seeds), visited growers and shippers in the area to experience the tradition that many families have every summer in order to bring in the crop. DeRoy Anderson, Randy Simpson, Mackie Mcwhirter, the Hartman family, Wiggins, and Borders are just a few of those who year after year grow the watermelon crop and see that the fruit arrives on America's tables during the summer months. Families usually have three generations working side by side doing different tasks, including pitching melons into the harvest truck, counting fruit on the packing line, or simply slapping labels on the fruit. The older generation usually works the phone, being in contact with the truck brokers and harvest crews and—most importantly—calling supermarkets to arrange on-time deliveries.

Growers have to choose the best seed variety, irrigation method, and cultivation practice to use. Market prices at harvest time are also a challenge each year and seem to follow what economists call supply and demand. Good market prices and good yields are always a winning combination.

CHALLENGES

It has been said that no two years are the same when you're growing watermelons. Each year the weather seems to be a little different, but the growers have learned to adjust. That is where many years of experience help to produce a good crop. Growers have to choose the best seed

variety, irrigation method, and cultivation practice to use. Market prices at harvest time are also a challenge each year and seem to follow what economists call supply and demand. Good market prices and good yields are always a winning combination. During the summer months, growers from West Texas are competing with other watermelon-producing areas such as the Southeast US and California.

REWARDS

Rewards are usually measured after a successful harvest—the better the harvest, the sweeter the rewards. It usually takes six months from

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the time the seed goes into the ground to the end of the last harvest (i.e., May to October). After the harvest, some growers stay and finish their cotton harvest, as well as attending to



other crops or livestock that need their care. Others return to South Texas to get ready for the spring crop. But when the next May arrives, they will be preparing for the summer watermelon harvest in West Texas ■

2010 HIGH

MARKETING HIGHLIGHTS

1

Arava Team

Goal: To improve service to the company's customers in the Arava in order to enhance the performance of the commercial varieties and promote market penetration of new varieties

In a world of aggressive competition, where information is universally available, we may tend to think that everyone knows everything. That isn't the case in agriculture, especially when we're talking about introducing new pepper varieties. At *Zeraim Gedera*, we know that selling high-yield varieties pays

off for everyone, but our real work—customer relations—does not end when the seeds are sold; it only begins. With this in mind, and in an effort to improve our service to our

customers, we decided to adopt a unique marketing approach: the Arava Team. This multidisciplinary team of marketing people, product people, agrotechnical support staff, developers, and farmers can offer our customers a total professional response. The primary goal of the Arava Team is to provide after-sales service—advice and guidance on all levels whenever it is needed.



For the January 2011 newsletter, we have chosen to present three success stories from the past year. The three involve different aspects of the company, but all have one thing in common: They are the result of a lot of teamwork and a constant quest for innovation and improvement.

How does it work?

1. The Arava Team includes professionals from several specialties who together provide a full professional solution: agronomists, developers, product managers, marketing and sales staff, trial officers, and growers in the Arava. The team members are in constant contact with our customers and answer professional questions that arise.

2. Once every two weeks the team members meet in the Arava to draw up clear guidelines for growers for the immediate future.
3. Once a month we issue a bulletin of cultivation guidelines, including expert advice and information, and distribute it to our customers.

4. The members of the Arava Team work together to develop closer ties and cooperation with your direct customers and suppliers—including nurseries, extension service personnel, and marketing companies.
5. The team conducts supplementary marketing activities such as an eVALUEit campaign and open houses.

LIGHTS

One of the immediate products of the Arava Team is the new customer service system that we launched in early November (as usual, as a pilot project in the Arava region). We plan to introduce the same system for the other crops and in the rest of the country in order to improve the commercial varieties and help with market penetration of the next generation.



A Successful Go to Market in Turkey

After *Syngenta's* acquisition of *Zeraim Gedera*, it was decided to make a change in *Zeraim Gederas* Go to Market in Turkey and terminate its long-term agreement with a national distributor. This decision was taken in order to build upon *Zeraim Gederas* brand reputation in Turkey and to be able to create a higher level of customer focus. This change in the Go to Market was implemented in August 2009, at which time *Zeraim Gedera* launched its direct sales operations in Turkey with a newly-hired and trained marketing and sales team. Though *Syngenta* already had a marketing and sales organization in Turkey for the S&G seeds brand, the company decided to keep the *Zeraim Gedera* brand as an independent sales organization in Turkey. *Syngenta's* decision to keep the two brands operating as separate,



competing entities under a marketing model known as "coopetition" was a bold departure from the conventional practice of absorbing new acquisitions into existing operations and was based on the idea that each brand could have a unique offer for the market.

Each brand has its own identity and approach to the market. S&G has a wide assortment of vegetable products in its portfolio and is dominant in watermelon and certain tomato segments. *Zeraim Gedera* has a more focused product portfolio, with tomato as its primary product line, and is the leading brand in Turkey's fall tomato segment.

Over a year has passed since the beginning of *Zeraim Gederas* direct sales operations in Turkey. Over the course of this year, sales of both *Syngenta* brands (S&G and *Zeraim Gedera*) have increased and together both brands are helping to make *Syngenta* the dominant force in the Turkish vegetable markets ■

ON GOING PROCESS ➤ Financial Aspects of the Renaissance Project until Approval by Syngenta

Background

Zeraim Gedera was founded in 1952 and has developed and grown over the years—from a few dozen employees to close to 200 employees in Israel. Throughout this time, the company has consolidated its activity at the present site.

Due to the company's rapid growth, the site is no longer large enough to support the company's future plans for its production facilities, laboratories, and offices. It was therefore decided to consider possible alternatives that will meet the future needs of the company. Renaissance Project

In order to achieve its long-term goals, the company formed a project team that will consider the various options until a site is found. The new site should offer suitable working conditions and be based on advanced technologies, while using green, energy-efficient methods and offering a solution for the "home farm."



This activity was carried out by means of a matrix structure that included all relevant parties at *Syngenta*. The team also had to canvass and work with everyone involved in the process in order to obtain full support in the committees. Thanks to this intensive work vis-à-vis the interested parties, a high level of professionalism, an integrated perspective, and assurance of the required high level of availability, we were able to obtain full

approval of the project by *Syngenta*.

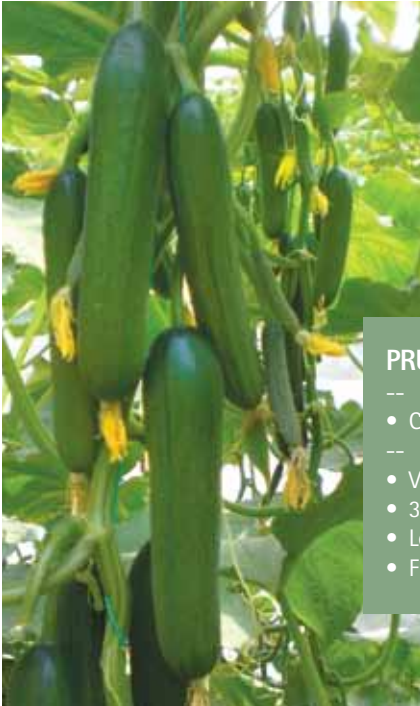
Achieving this objective is an important, significant landmark for the company, as it emphasizes *Zeraim Gedera* as an integral part of *Syngenta* Israel and conveys a clear message regarding *Syngenta's* willingness to invest in the company's future and in each individual employee ■



Pruva:

A New Beit Alpha Cucumber Variety from Zeraim Gedera for the Spring–Summer Season

Chusam Awwad, Cucurbits Portfolio Lead, chusam.awwad@zeraim.com



and impressive resistance. Zeraim Gedera's development teams have been working for years on developing Beit Alpha cucumber varieties that satisfy the requirements of markets in the Mediterranean Basin.

It was not a simple challenge. This climate requires a high-quality variety for the summer season, with good setting in the heat and impressive resistance to viruses.

PRUVA

-
- CMV (IR), CVYV (IR), ZYMV (IR), Sf (IR)
-
- Vigorous, ventilated plant
- 3–4 fruits per segment
- Length of fruit: 16–18 cm, with fine groove
- Fruit color: shiny dark green

Weather changes in recent years, especially the higher temperatures, which increase the risk of viral infection and various soil diseases, make it more difficult to come up with a variety that meets market requirements. Two issues ago, we told you about the marvelous gift that we received following the merger with *Syngenta*—"the ability to use all possible platforms (laboratories, financing, gardens, etc.) to leverage the development plan." Consequently, after 5 years of development, the Pruva—which proved outstanding in observations

After 5 years of development, Zeraim Gedera is pleased to announce the introduction of the Pruva cucumber—a new Beit Alpha variety for the spring–summer season. This variety was outstanding in observations in 2008–09 in both Turkey and Israel, from the March plantings to the mid–September plantings, showing good setting in high temperatures

in 2008–09 in both Turkey and Israel, from March plantings to mid–September plantings—will be introduced in the spring of 2011.

The 2010 summer season in these countries was marked by high temperatures, definitely posing a challenge to our evaluation of the new Pruva variety. Nevertheless, the results for the Pruva this season were definitely satisfactory, meaning that performance has been stable for the past three years.

Outstanding features of this variety include high yield, good setting in high temperatures, and maintenance of fruit quality all season long. The variety is also highly resistant to viruses and powdery mildew.

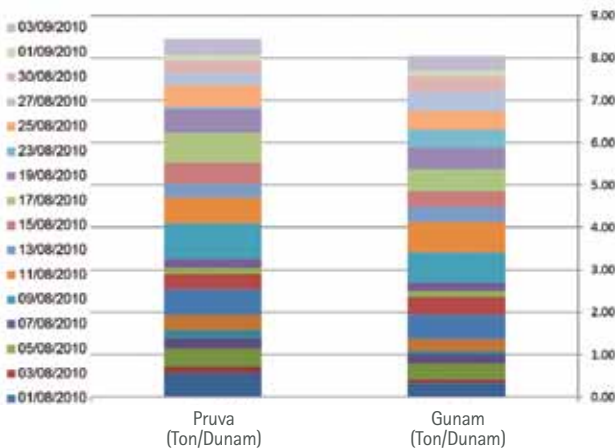
ACTIVITY IN THE TURKISH MARKET

Summer cucumbers are grown mainly in the Menderes district in the province of Izmir. There are two main summer planting seasons: mid–April and mid–August. The Pruva yielded good results in both planting seasons in the last two years, with stable performance, good setting in the heat, high-quality fruit, and high tolerance of viruses.

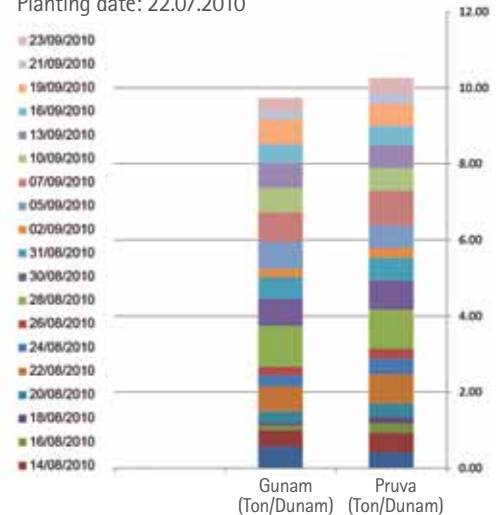
ACTIVITY IN THE ISRAELI MARKET

Numerous observations were carried out in the 2010 growing season, primarily in Moshav Ahituv and in the Arab sector in the Triangle. In most of the observations the estimated yield and quality of the Pruva were compared with those of the competing strain ■

Potential yield (Yaron Abu's hothouse, Achituv) - plantings
Planting date: 01.07.2010



Potential yield (Yaron Abu's hothouse, Achituv) - plantings
Planting date: 22.07.2010



Road Story of Pruva

By: **Murat Selçuk**, Turkey Product Manager, murat.selcuk@zeraim.com

Apart from ZG's being one of the leader and trustworthy brand in tomato, it also struggles to continue its Marketing and Sales success in other strategic crops, as well.

Pruva F1 is the result of this strength of purpose and determination.



In order to reach immediate success in Beith Alpha multi-cucumber segment, we moved our trials to Menderes (Izmir) where

the heart of the segment beats. The program started in 2007 got its first results in June 2009. We continued our selection and adaptation trials at leading farmers' in the region with Kadir M. Sari (Promoter-Aegean Region). We took hundreds of varieties and at the end of weighing data, measurements and observations; we decreased them to 7 varieties in 2009. Without losing time and season, we took it to trial again in the 2nd plantings if the region in August in the same year. When the season was over, results and observations were pointing two varieties. In order to have a place in the market, it was necessary to focus on one variety and continue.

Within this purpose, for 2010 spring-summer plantings a specific quantity of demo seeds of both varieties were produced. We prepared a very detailed program to decide on one variety in the first April plantings. Both varieties were dealt to key and leading producers; and seeds and seedlings to the whole region through dealers. In the base of tunnel, earliness and yield comparative greenhouses were set. Platforms were created where farmers would be able to share their pleasure with others. We carefully followed up its performance in the greenhouse, its resistances and the period till the end-user.

We prepared posters and leaflets that were visually attractive. And... while all these were happening in order not to miss one season; we set a registration trial, as well. As from November 2010, the registration process will be over and we will be able to sell it in 2011. For 2011, both our farmers and we are ready. We have already set off and this is just the start story of the Pruva road. And I deeply believe that under the umbrella of *Syngenta*, ZG Turkey will have a lot of new road stories to tell. Thanks to everyone who took part in this ■

Growing Round Tomatoes Under Protective Structures in Northern Mexico

Jaime Arturo Martinez Reyes, Area Business Manager Bajío and North East Mexico, jaime.martinez@zeraim.com

There are now more and more reasons why farmers might think about investing in a greenhouse, as these structures make it possible to control variables like temperature, humidity and water supply for the crop. By controlling this technology well, farmers can considerably increase their yields in comparison to open field crops. This can translate into a better income for farmers, as long as they have a guaranteed buyer.

As a result, this type of greenhouse production is becoming increasingly popular in northern parts of Mexico, such as Comarca Lagunera, Coahuila, Nuevo León and San Luis Potosí, where a number of companies, mainly from Spain and Israel, have set up business, using state-of-the-art technology.

of farmers in terms of size, firmness, yield and, above all, adaptability to areas with difficult climatic conditions. One such project is Fidesur (Trust for the Development of Southern Parts of the State of Nuevo León), with more than 28 hectares of land used to grow tomatoes. Part of the project's facilities are used to research and develop varieties of interest. At an exhibition of different seed companies from around the world, Sprigel and Cedral had the greatest impact on the audience in general.



In Comarca Lagunera and Coahuila, where more than 250 hectares of land are used to grow round tomatoes for the export market, a lot of the crops are grown using coir compost and a hot air heating system to thwart the effects of the desert chill.

In the municipality of Cedral in San Luis Potosí, in the northern part of the state, the company Cedral Green Houses represents one of the largest investments in the production of protected crops, and manufactures these materials. It was in this region that the adaptability of these varieties was first discovered, and one of them takes its name from there, the variety "Cedral". These varieties are the product of a breeding plan "*Zeraim Gedera*" specific to Mexico.



Sprigel

Cedral

Greenhouses provide a protected environment, and the idea is to control all the factors related to production, climate, irrigation and fertilisation. They provide plants with the optimum atmosphere for their development, protecting the crop from harmful elements like snow, hail, rain or disease.

Zeraim Mexico is working with a number of different greenhouse companies, testing and selling round tomatoes. Two of these varieties, Cedral and Sprigel, boast particularly good results. They are highly adaptable, meeting the needs

Farmers in all of these areas are taking a number of factors very seriously, including initial investment, production, the market, food safety, trends, commercial agreements and working capital. Feasibility studies are also carried out, to ensure that the products are of the highest possible quality. This is where we actively interact with the farmers, providing them with all the information about our varieties and helping them to obtain a top-quality finished product ■

Practical Emphases in Greenhouse Soil Fumigation with Metam Sodium & Condor

Yoram Kahlon, Soiltech Ltd.



Because Condor damages PVC and rubber, pumps with PVC or rubber parts (e.g., TMB or Amiad pumps) should not be used.

Methyl bromide, for many years used as a soil fumigant with a variety of crops and soils, has been phased out.

In this article we state the chemical alternatives to methyl bromide, survey the available preparations, and list the most effective, recommended methods of soil fumigation.

SOIL FUMIGATION IN GREENHOUSES

Several substances are used for soil fumigation as alternatives to methyl bromide:

- Metam sodium preparations are used as soil fumigants to exterminate soil diseases and weeds
- Condor (1,3 dichloropropene) is used as a soil fumigant to exterminate nematodes



METAM SODIUM

In recent years the use of metam sodium in greenhouses has increased. Below are guidelines for the use of metam sodium.

The past the substance was generally introduced via the sprinkler system. It was added to the water in concentrated or diluted form and then percolated into the soil. Often the results of this method were poor (fusarium in tomatoes, fusarium in cucumbers, damping-off diseases in melons, verticillium in eggplant).

Recently, there has been an increase in the introduction of metam sodium preparations by drip lines under polyethylene sheeting. In this method, the substance is added to the drip irrigation system in concentrated or diluted form, depending on the type of

soil. In heavy/clay-like soil the concentrated form is preferable: the substance is added in the first third of the irrigation, after which water pushes the substance to the desired soil depth. In sandy/light soil the diluted form is preferable. In this case the substance is infused throughout irrigation.

Fumigation with metam sodium should be done 14–28 days before planting.

The soil should be thoroughly prepared for fumigation. It should be crumbly, with no clumps and no remains of the previous crop. The drip lines should be spread out along the rows. (The more lines there are per bed, the more effective the fumigation will be.)

Soil moisture before fumigation should be 50%–60% of field capacity (moist soil, without excess water, and with a tendency to dryness). Excess water will detract from the effectiveness of the fumigation by competing with the fumigation

solution and making it difficult for the solution to penetrate the spaces within the soil.

Metam sodium preparations must not be combined with other preparations!

The quantity of water required for soil fumigation with metam sodium depends on the type of soil: Sandy-light soil requires 300–350 m³ of water per hectare. In medium-heavy soil with a high percentage of clay, 400–500 m³/ha is needed.

Pumps used to introduce metam sodium into irrigation pipes: Various kinds of pumps are used for fertilizing. Almost all are suitable for introducing the substance into the irrigation system. Diseases exterminated by fumigation with metam sodium: pythium, rhizoctonia, fusarium, verticillium, pink root, etc.

THE USE OF CONDOR (TELONE EC) AS A NEMATICIDE IN GREENHOUSE VEGETABLES

The phaseout of methyl bromide has led to an increase in nematode infestation in many vegetable crops. Effective control of nematodes is a necessary condition for financial success in growing vegetables.

Vegetable crops sensitive to root knot nematodes (Meloidogyne):

- Tomato, pepper, eggplant
- Cucumber, summer squash, winter squash, melon, and watermelon
- Cabbage, cauliflower, radish, herbs, lettuce and other leafy crops

In Israel condor is sold only to farmers licensed to use it.

Condor is a corrosive substance that can damage pipes and equipment. It is therefore important to pay close attention to the properties

of the substance so as to prevent damage to the pipes and equipment and/or to users.

Condor may be introduced into the water system with a fertilizer tank or pump that is resistant to the substance. The pump should be sealed with Viton or Teflon.

Because Condor damages PVC and rubber, pumps with PVC or rubber parts (e.g., TMB or Amiad pumps) should not be used.

We recommend the Flojet electrical pump with Teflon seals for use with Condor.

Methods of application: Condor can be introduced into the soil in the first third of the irrigation or throughout irrigation. There is no difference between the two methods.

The quantity of water used to introduce the substance is critical to the success of fumigation. Because Condor does not dissolve well, its movement in the soil is limited and depends on the amount of water used. The more water there is during application, the deeper the substance will go. Effective extermination of nematodes requires that the substance penetrate the soil to a depth of at least 30 cm. Therefore the quantities of water used should be 400–500 m³/ha, depending on the soil type (400 m³/ha for light soil, 500 m³/ha for heavy soil).

POLYETHYLENE SHEETING FOR SOIL FUMIGATION

Covering the ground with polyethylene prior to fumigation is vital to the success of the fumigation.

Polyethylene sheets spread along the beds to be fumigated will prevent rapid evaporation of

the various fumigants and will greatly improve the results.

There are many types of polyethylene sheeting for soil fumigation on the market. Effectiveness depends on the thickness of the plastic and the number of layers in it.

The basic type of plastic used for covering soil is low-density polyethylene (LDPE). It is 20–50 microns thick and its effectiveness at blocking various fumigation gases is low.

Another type of plastic used in fumigation is high-density polyethylene (HDPE), which is more effective than LDPE at blocking fumigation gases.

Recently, multi-layered plastic, which is highly effective at blocking the various fumigation gases, has come onto the market. This plastic, known as VIF, is sold in various thicknesses and makes it possible to use smaller quantities of fumigant per unit of area.

CONCLUSION

Metam sodium (Edochem Super, Metamor, and Edigan Super) and dichloropropene (Condor) preparations introduced by drip irrigation

under polyethylene sheeting provide very good protection against various soil pests and serve as a chemical alternative to methyl bromide ■



Figure 1: Condor concentration at various soil depths as a function of water quantity

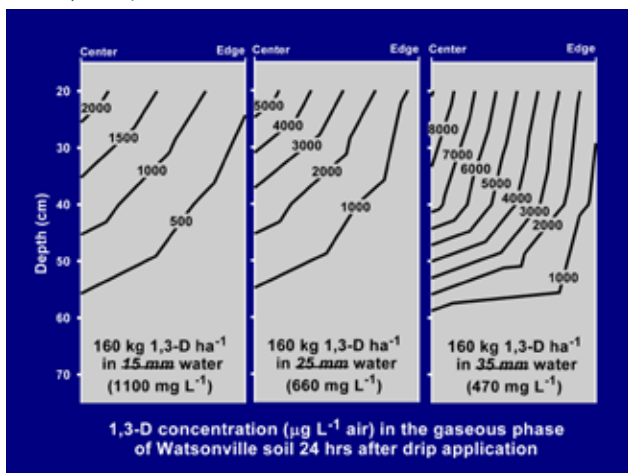
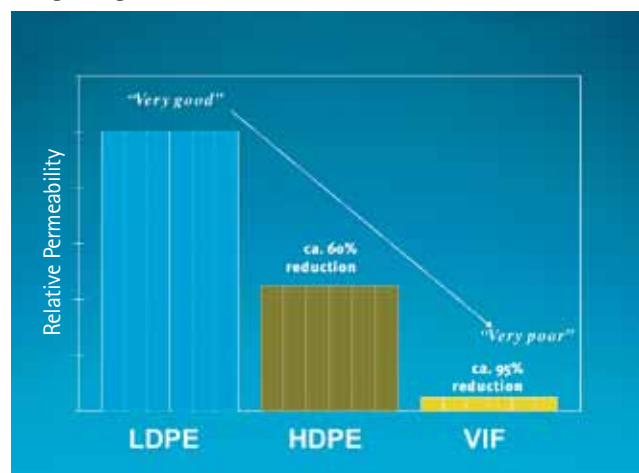


Figure 2: Effectiveness of various types of plastic at blocking fumigation gases





The Demonstration Hothouse on the Assoulin Farm on Moshav Mivtahim as a Microcosm of Tomato Production Worldwide, Autumn 2010/11

Igal Flash, Tomato Product Manager, igal.flash@zeraim.com

Zvi Howard Wener, Chief Agronomist, Gro-N-Tech Unit, zvi_howard.wener@zeraim.com

At *Zeraim Gedera's* demonstration hothouse, located on the Assouline farm on Moshav Mivtahim in the western Negev, Israel, one can see numerous tomato varieties developed by the company's experts that are being grown with great success around the world. The display of varieties and working methods at the hothouse is a major milestone in *Zeraim Gedera's* concept of customer service.

This year various growing methods are being displayed, using single rows versus double rows. This should enable growers to compare performances and to choose which method is best suited to them. There are round and cluster tomatoes, elongated tomato varieties (which won the public's hearts in the past year), cherry and plum varieties, and of course special varieties from the taste program, which is based on genetics emphasizing flavor properties.



In keeping with the worldview of *Zeraim Gedera*, whose mission is to offer farmers comprehensive service based on knowledge of genetics, measurable data, and extensive agronomic know-how, agrotechnical experiments are presented in the hothouse by the Gro-N-Tech team together with product people and developers. The aim of the experiments is to create knowledge and added value so as to help farmers maximize

the genetic potential of the varieties they grow. Visitors can see the following:

Experiments on optimization of fertilizer and irrigation levels for the new varieties. The purpose of these experiments is to profile the irrigation and fertilizer requirements of the Parvati, Enanti, and Blanda varieties so that farmers can grow them more efficiently and maximize the potential yield of the varieties.

Experiments on plant spacing and density. This work is aimed at improving fruit size, thereby increasing the percentage of the harvest that can be marketed as large or extra large. The method of growing with two branches is being compared with the single branch method. The idea is to test the assumption that the percentage of fruit of extremely large sizes and/or unusual shapes can be reduced in order to obtain a high yield of uniformly sized fruit.

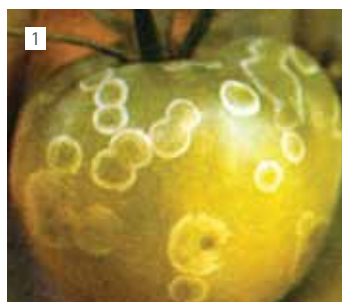
Gray Mold in Tomato – Botrytis Cinerea

Zvi Howard Wener, Chief Agronomist, Gro-N-Tech Unit, zvi_howard.wener@zeraim.com

➤ Gray mold occurs wherever tomatoes are grown, whether in the field or greenhouses. It can be a very big problem for growers as it attacks both the plant and fruit during production and can also be a postharvest problem.

MAIN CHARACTERISTICS

- Gray mold has a fuzzy, gray-brown appearance that often resembles felt because of the abundance of spores growing from the necrotic tissue.
- The fungus mainly attacks mature plants through wounds and senescent tissues on the leaves, leaflets and petioles and stems. Poor leaf and shoot removal often result in wounds that the fungus can easily attack.
- Botrytis can girdle the stem and cause the plants to wilt above the infection point.
- Gray mold can attack fruit on the plant in two different ways.
- It can grow into the fruit causing the skin to rupture in the center of the infection.
- Spores develop and eventually the whole fruit becomes infected.



- Ghost spots can also appear on green and red fruit. The spores germinate on the fruit surface and begin penetration. However, the growth is aborted and a small black speck surrounded by a white halo appears on green fruit and yellow in red fruit. No rot occurs but the fruit is generally not marketable.
- The fungus thrives in high relative humidity of 95% and moderate temperatures in the range of 17-23°C. Thus, it begins in relatively

CONTROL

In the greenhouse and nethouse there should be good ventilation and plant spacing that is appropriate for the conditions in the structure. Plastic ground mulch spread over the entire greenhouse floor helps reduce the humidity in the greenhouse. The plastic has a grey-silver side facing upwards and black facing downwards. Leaf and shoot removal should be done with a good clean break as close to the stem as

cool, overcast and humid weather and is spread by rain, wind and air currents. The climatic conditions of greenhouses and nethouses at certain periods of the year can harbor ideal conditions for disease development especially when there is close plant spacing and poor ventilation.

Experiment on growing grafted tomatoes.

This includes the careful examination of water use efficiency in brackish water using new rootstock that has very high tolerance to brackish conditions. There is known to be a direct relationship between water use efficiency in a plant, production of dry material, crop height, and fruit quality. A decrease in the amount of water available to the plant causes direct harm to fruit quantity and quality. An increase in the soil salinity detracts from the plant's ability to absorb water, and hence detracts from yield and quality. The grower responds with extra irrigation to rinse out salts and boost availability of water for the plant. The use of advanced rootstock of this sort will reduce the cost of water to farmers and enable them to use lower-quality water. A similar experiment to determine the efficiency of rootstock in brackish conditions is being done in Baja California, Mexico.

Experiment with new taste varieties. The company's agronomists and breeders are working together on optimizing the growing techniques and crop management of the new taste varieties for customers in markets around the world. What makes some fresh-produce companies around the world unique is their marketing of taste tomatoes characterized by high Brix levels. The standard approach

worldwide to achieving improved flavor (high Brix) is to use aggressive salination and other agrotechnical activities such as leaf removal. Often this comes at the price of poor fruit quality and short shelf life.

Zeraim Gedera's new taste varieties make it possible to obtain high Brix as a result of genetics. Therefore, they can be grown without aggressive salination and still have improved yield, flavor, and shelf life.

Similar comparative experiments are being carried out elsewhere in the world with ongoing, simultaneous monitoring. The company's agronomists can translate the results of this work into growing recommendations for major customers so that they can enjoy a high-quality crop manifested in improved flavor and long shelf life using the *Zeraim* method.

Visitors to the demonstration greenhouse can get an impression of new varieties in Israel and other countries and add to their agrotechnical knowledge. The range of new varieties at *Zeraim Gedera* gives growers

the opportunity to choose and decide what segment to focus on and to tailor the potential of the varieties to their needs ■

**In November, Davor Pisk, COO for Seeds at**

Syngenta, visited Israel. During his stay, many issues related to innovation and knowledge creation were discussed. Davor's itinerary included a visit to the demonstration greenhouse, where in addition to the different varieties on display, he was shown advanced agrotechnical experiments being carried out by the Gro-N-Tech team together with the product development people and plant breeders.

The purpose of the experiments is to generate the know-how and added value presented for the advanced varieties displayed in the greenhouse. During the visit we presented our innovative varieties and current experiments in irrigation and fertigation. Davor was very impressed with the professional team and the wide range shown to him during his visit.



possible in order to keep the wound as small as possible. Do not leave tissue or plant parts projecting out from the stem.

Fungicide applications should be started early before the appearance of the disease. Three or four different materials from different chemical groups should be used in rotation. Consult a local advisor regarding the chemicals.

A paste of a good fungicide and talc powder can be prepared and applied to the wound to help prevent infection ■

Photos:

1. Ghost spot
2. Ghost spot
3. Good clean breaks
4. Stem lesion showing projections from stem because of poor leaf & shoot removal
5. Petiole lesion
6. On fruit
7. Plastic mulch on ground. Silver side up and black side down

Fighting Clavibacter; Negev R&D Station Combines with Syngenta AIS (Agronomic Information Services)

Myron Sofer, Director,
Negev R&D Network, Israel

"Atmospheric conditions are likely to be conducive to wet tomato foliage during the coming mornings. To avoid the spread of Clavibacter, tomato plants should not be handled when the foliage is wet."

Information provided by *Zeraim Gedera* and *Syngenta*

This was the first of a series of text message sent to about 280 growers, researchers, and advisors every 4-5 days in order to raise awareness of the role of handling wet tomato leaves in the secondary spread of bacterial canker (*Clavibacter*) in tomatoes.

BACKGROUND

In 2007 a severe epidemic of bacterial canker and wilt in the western Negev desert of Israel caused NIS 30 million (\$8 Million) damage. This resulted in the formation of GRACE – the Green Agriculture and Clean Environment Clavibacter Project in March of 2009 to combat the disease, caused by the bacterium *Clavibacter michiganensis* and commonly referred to as "Clavibacter." The comprehensive project is aimed primarily at 'developing a protocol for integrated area-wide control methods of contending with the disease and implementing it on a commercial scale.' The project is multi-disciplinary with many participating researchers and headed by Prof. Dani Stenberg of the Agricultural Research Organization.

The project activities address various aspects of the disease, including the initial or primary source of infection, the secondary spread of



the disease in time and space, and methods of coping with both of these sources of infection and spread.

It also addresses ways of reducing the severity of the disease or preventing its spread, and the

biology of the bacterium that causes the disease.

DISEASE LOCATION

In many hothouses and nethouses the disease appears in a strange yet consistent form. In general, there are several rows in which all the plants are affected (dead or showing severe signs of the disease), and in the rest of the area there are randomly scattered loci where a smaller number

of plants show disease symptoms of varying degrees of severity.

PRIMARY SOURCE OF INFECTION

The primary source may be bacteria that have survived in the soil, from seedlings that arrived infected from the nursery, (grown from infected seeds) or bacteria spread through the air from nearby affected structures. This hypothesis was proven in many experiments carried out under hothouse conditions at the Volcani Center and at Negev R&D Center.

Growing Tomatoes in Culiacán, Sinaloa (Mexico)

Juan M. Nuno, Area Business Manager, Sinaloa, Mexico, juan_manuel.nuno@Syngenta.com

Farmers in the Culiacán valley are a perfect example of adaptation, perseverance and success in adverse conditions marked by negative climatic and commercial factors. During the growing cycle, these farmers have to overcome market-related challenges as well as problems relating to plant health.

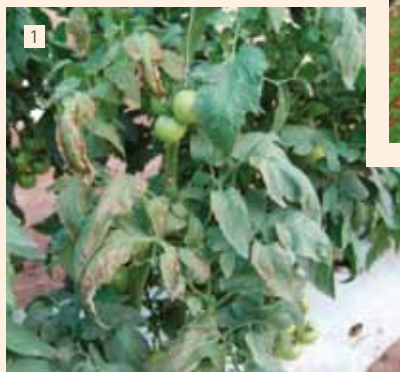
Commercially speaking, they have to compete with many other Mexican regions, as well as with major producers

in the United States, particularly in Florida.

In terms of plant health, each season this fertile valley is affected by infectious agents, like fungi and viruses, as well as insects. Previously, these pests were not the cause of any major adverse financial effects. Recently, however, a number of new, as-yet unidentified soil problems have

emerged, attacking the plant roots and vascular systems, with minimum perceptible damage to the leaves. The only visible damage comes in the form of a few marks on two or three leaves

of each plant. This is presumably caused by *Pyrenochaeta Lycopersici*, a disease that has spread in some farms, forcing farmers to change the varieties grown in some fields to prevent the fungus from spreading and affecting the soil. In other cases, farmers have chosen to change the varieties grown completely.



SECONDARY SPREAD OF THE DISEASE

After several months it became clear to the project researchers that:

- The disease can be easily spread by handling during routine maintenance of the plants when the foliage is wet.
- The droplets of Guttation (teardrops) sap at the edges of the leaves of young seedlings often contain the *Clavibacter* bacteria.
- The transfer of the bacteria from infected plants to nearby healthy plants is one of the causes of the spread of the disease within a hothouse or nethouse.
- The disease only spreads when several plants in the structure are already infected with the disease from the initial source of infection.
- Moisture may be from the teardrops, but it could also be from other sources such as dew, mist, rain, and sprinklers.

The extension service, issued a general directive to avoid handling tomato plants when the foliage was wet, from any source of moisture.

SYNGENTA AIS & NEGEV RESEARCH CENTER

It was at this point that we realized that we needed a tool that would help us alert farmers on which days and at what time of the day

there would be a high probability of wet foliage on the tomato plants. Then, in these time



periods, the farmers could avoid carrying out procedures involving touching the plants. Together with Zvi Wener, senior agronomist at *Zeraim Gedera*, we contacted *Syngenta AIS* who agreed to include the Bsr region in their five-day weather forecast model. The forecasts are for open areas but nevertheless, a high correlation was found between the forecast data and the formation of moisture on the leaves of young tomato plants in the

hothouses and nethouses. Now, we able to predict the likelihood of conditions conducive to the formation of moisture on tomato leaves and inform the farmers via SMS text messages. The idea behind the project is not to guide farmers or advise them to perform an operation (spray) but rather, to provide tools for thinking, observing, and raising awareness of the danger. Growers have expressed their appreciation of the information. Myron believes that the cooperation between *Syngenta* and the Negev R&D station and the *Clavibacter* project is a model to expand to other, relevant problems. ■

Photos:

1. Guttation droplets on leaves
2. Foliage wet with both guttation and condensation
3. At work in greenhouse with leaves wet with guttation
4. Experimentally testing disease spread by handling plants with leaves

Tomatoes are one of the most important crops in the Culiacán valley because of the money they bring in and their popularity amongst consumers, both in Mexico and in the export market. Around 5,000 hectares of land in the region are used to grow tomatoes. Both determinate and indeterminate varieties of round and saladette tomatoes are grown. Semi-determinate tomatoes are very rarely cultivated.

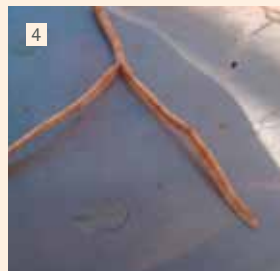


The crop is planted both in open fields and in covered structures.

Round tomatoes are more often grown in protected conditions because they are mainly destined for the export market, which is more demanding in terms of quality. The cycle lasts approximately 9 months, from the time of planting until the last vine is picked. The production rate is up to 25 vines per plant with an average harvest rate of 3.5 vines per month. In protected conditions, the expected yield is 15,000 boxes weighing 11 kg per hectare. Indeterminate saladette tomato plants produce an average of 12,500 boxes weighing 11 kg per hectare in open fields, and up to 15,000 boxes in protected conditions.

The high operating costs mean that tomatoes are a demanding crop that is farmed extensively.

The key challenges faced by the regions farmers in terms of diseases include *Fusarium* race 3, different types of nematodes, geminiviruses, and *Sinaloa Marchitez Manchada* disease. *Zeraim Gedera* is working on genetic modification programmes to try to solve these problems, and is also carrying out research into and developing other types of plant resistance.



Although these are not required at the moment, they may become necessary should any other plant health problem arise.

Another problem is posed by the critical temperature conditions at the start of the season, with temperatures reaching up to 46 degrees centigrade in covered structures. Over the last few years, demand for such structures has increased as farmers try to minimise the damage caused by viruses, but although they help with these problems they also make it more difficult for the first vines to set. To get around this problem, farmers can use hormone treatments. Soil problems can be minimised through the use of resistant varieties and other farming practices such as fumigation and mulching. ■

Photos:

1. Symptoms on leaves
2. Leaves showing vascular disease
3. Production of round tomatoes
4. Roots showing symptoms of the disease described



Are You Ready for the Future?

Gonzales Jose Luis, America's Desk Manager, joseluis.gonzalez@zeraim.com

Over the last 8 years, I've had the opportunity to take part in the most important fresh produce summit in North America. Fresh Summit is run by the Produce Marketing Association (PMA) and is certainly one of the largest international events devoted entirely to fruit, vegetables and flowers. PMA was set up in 1949 to provide solutions



to members throughout the year, helping them to increase their sales and product consumption, and to establish solid professional business relationships in order to create new business opportunities. Today,



PMA represents more than 3,000 companies from around the world, working in all sorts of different parts of the supply chain.

According to a recent survey, 77% of attendees at Fresh Summit come with the specific aim of seeing new products and services. Amongst many other things, activities at the event include work sessions examining topics of interest for attendees, like new trends, food safety, modern product tracking systems, packaging, and better, more efficient ways of supplying fresh produce.

This year, one of the talks that I found most interesting was given by Bryan Silbermann, President of PMA, which focused on the importance of being prepared for the future. This is something we all need to think about, not just in the fresh produce sector.

Today, we have countless technological tools at our fingertips, helping us to gain a better understanding of our customers' tastes and preferences, how often they visit the supermarket, and how they respond to emotional stimuli like local and organic products and flavour. Another great step forward has been the ability to track produce from the time it is picked until it reaches the consumer, not forgetting the important role now played by packaging and the convenience of ready-to-eat fruit and vegetables in today's world, where we spend less time in the kitchen preparing our meals.

Today's consumers are certainly different from yesterday's and will be different from tomorrow's. Now, more than ever, they are interested in knowing where their food comes from, they are very environmentally aware, concerned about nutritional value and whether or not the company that produces their food is committed

to looking after the environment and works to sustainability standards. Now is the time to value the industry in which we take so much pride, because our customers want to know the history behind what they are eating. Being prepared for the future depends, to a great extent, on us ■

