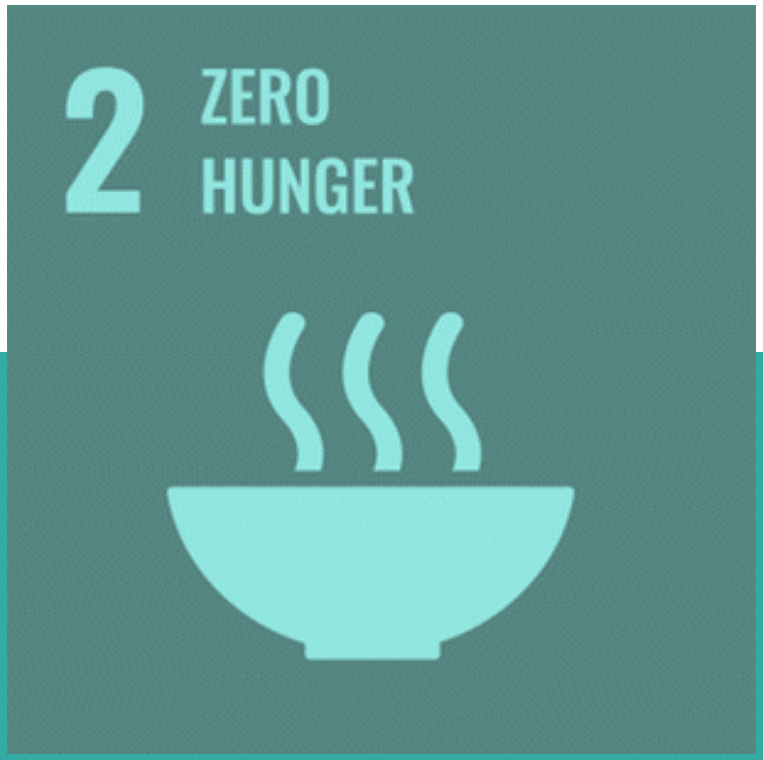
University Report on SDG 2

جامعة القصيم
Qassim University



SDGs
Sustainable Development Goals

Table of Contents

SDG2: ZERO HUNGER

Al Qassim University's Contribution to SDG 2: Zero Hunger through Education and Agricultural Innovation

Sustainable Development Goal 2 (SDG 2) aims to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. Al Qassim University, situated in Saudi Arabia, recognizes the urgency of SDG 2 and is actively engaged in initiatives that address hunger by promoting education, research, and innovative approaches to agricultural development.

Empowering Agricultural Education:

Al Qassim University's commitment to SDG 2 is reflected in its focus on agricultural education. The university offers programs and courses that equip students with knowledge and skills in modern farming techniques, crop management, and sustainable agriculture practices. By educating future agricultural professionals, the university contributes to building a skilled workforce capable of increasing food production and improving food security.

Research for Agricultural Innovation:

The university plays a vital role in advancing agricultural innovation through research initiatives. Al Qassim University's research projects explore ways to enhance crop yields, improve water efficiency, and develop drought-resistant crops. These efforts contribute to the development of innovative solutions that address the challenges of food production and support sustainable agriculture.

Community Engagement and Extension Services:

Al Qassim University extends its impact beyond the campus by engaging with local communities through extension services. The university collaborates with farmers, agricultural cooperatives, and rural communities to share knowledge and best practices in farming, pest management, and sustainable land use. This engagement empowers local farmers to improve their productivity and contribute to food security.

Promotion of Food Safety and Nutrition:

Al Qassim University emphasizes the importance of food safety and nutrition in achieving SDG 2. The university offers courses and workshops that educate students and community members about proper food handling, storage, and nutrition. By raising awareness about these crucial aspects, Al Qassim University contributes to reducing foodborne illnesses and improving overall health.

Innovative Farming Techniques:

Al Qassim University promotes the adoption of innovative farming techniques that optimize resource utilization. The university advocates for practices such as precision agriculture, hydroponics, and vertical farming, which can increase yields while minimizing resource inputs. These techniques are particularly relevant for addressing food security challenges in resource-constrained environments.

Research Partnerships and Collaboration:

The university collaborates with research institutions, government agencies, and agricultural organizations to collectively address food security challenges. By fostering partnerships, Al Qassim University contributes to the development of policies, initiatives, and technologies that enhance agricultural productivity and promote sustainable food systems.

Entrepreneurship in Agriculture:

Al Qassim University encourages students to explore entrepreneurship opportunities in the agricultural sector. The university provides resources, mentorship, and training that empower students to establish agribusinesses and contribute to the local food supply chain. This approach supports economic growth while contributing to food security.

Al Qassim University's commitment to SDG 2 is evident through its comprehensive efforts to promote education, research, and innovation in agriculture. By equipping students with the necessary skills, engaging with local communities, promoting sustainable practices, and fostering partnerships, the university actively contributes to achieving zero hunger and enhancing food security in Saudi Arabia. Through its dedication, Al Qassim University plays a vital role in ensuring that everyone has access to sufficient, safe, and nutritious food.

Qassim University's applied research safeguards food security and livelihoods

https://www.timeshighereducation.com/hub/qassim-university/p/qassim-universitys-applied-research-safeguards-food-security-and-livelihoods [1]

Collaboration helps researchers share agriculture solutions with the Middle East and globally Known as the "food basket" of Saudi Arabia, the survival of Al-Qassim province depends on its agriculture. Crop and animal production drive the province's economy and provide livelihoods and food security to millions of people in the kingdom and the Middle East.

Practical scientific research is crucial to maintain the health and output of the province's agricultural sector, say researchers at Qassim University. Research within its College of Agriculture and Veterinary Medicine looks to find solutions to the diseases threatening local crops and animal herds, while academics push to share their knowledge with others in the Middle East and globally.

Camels and dates drive Al-Qassim province's economy, says Professor Ahmed Ali, a professor of veterinary medicine at the university. "Camels are important as a source of meat and are also considered part of the Middle East's cultural heritage," says Ali, a camel fertility specialist.

There are about 1.6 million dromedary camels within the Arabian Peninsula, more than half of which are found in Saudi Arabia, according to the United Nations' Food and Agriculture Organisation.

However, camels suffer from diseases that threaten their fertility, and thus the livelihoods of herders, Ali says. One example is chlamydia, a bacterial infection that causes reproductive problems in camels. Qassim University's veterinary hospital, the largest in the country, sees between 100 and 150 camels a day, and a third of the hospital's camel cases are affected by the bacterial infection.

"Surgical treatment is limited, so we are searching for a vaccine to prevent the occurrence of the disease," Ali says. In collaboration with researchers in Egypt, Oman, and Qatar, Qassim University is working to isolate the chlamydia microbe and develop a vaccine.

In another project, Ali and colleagues linked male camel infertility to heavy metal toxicity. Cadmium, a heavy metal, is often a by-product of petroleum extraction, and researchers found traces of the metal in male camels suffering from infertility. Ali, who has been with Qassim University for 15 years,

says: “Working in camel infertility is like a chain; once we solve one problem in the chain, we move on to the next problem.”

Professor Fahad Alminderej, a chemist in the College of Agriculture and Veterinary Medicine, is also looking to solve a problem: how to make the most of Saudi Arabia’s abundance of dates.

More than 8 million date trees dot the landscape of Al-Qassim province. In the first quarter of 2021, Saudi Arabia exported 142,000 tonnes of dates, according to the Saudi Press Agency.

“My project looks to use palms to create new products for the market that are useful for people,” Alminderej says.

Date vinegar, for example, is currently prohibitively expensive, and Alminderej is looking to develop a method to manufacture large quantities to enable its sale as a health food. The cellulose from the palm tree can also be used to make biofuel ethanol, and filters made from palm-derived nanoparticles can remove heavy metals from water. To realise these products, Alminderej is collaborating with colleagues in the university, as well as in Tunisia and Egypt.

Meanwhile, Professor Ayman Omar, a plant pathologist, is working to develop microbes that promote the growth and yield of greenhouse crops, such as cucumber and tomatoes. Omar and colleagues are isolating growth-promoting bacteria and fungi from the local environment in order to develop products for farmers.

“These microbes save money, are safe for the environment” and mean farmers are not dependent on mineral fertilisers, he says. Like Ali and Alminderej, Omar is also collaborating with researchers in other countries to further his research, namely in India and Egypt.

He hopes to have products ready to offer to farmers in the next year, as well as two scientific papers detailing their results.

While Qassim University researchers actively work to publish scientific papers, the main goal is to help farmers at home and abroad, ensuring that their crops and animals remain healthy.

The Faculty of Agriculture and Veterinary Medicine holds several scientific lectures "remotely" to activate World Food Day

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In conjunction with World Food Day, and under the patronage of His Excellency Prof. Dr. Abdulrahman bin Hamad Al-Dawood, President of the University, the University, represented by the Community Service Unit at the College of Agriculture and Veterinary Medicine, held on Wednesday, 4/3/1442 AH, a number of scientific lectures remotely, in cooperation with the departments of the College.

The lectures provided by the university on this occasion varied as they included: a lecture entitled "Food Safety in the Application of the HACCP Program", presented by Dr. Shawkat Fathy, a faculty member at the College, in which he talked about the emergence of the HACCP Food Safety System in the United States of America, and then crossed the Atlantic Ocean to Europe and the rest of the world, where it was described as an integrated control system that ensures the achievement of food safety

and risk freedom by analyzing the potential risks that exist in food during the stages of its preparation and processing and identifying control points. Critical and work to monitor and control them to avoid the occurrence of those risks.

The lecture also pointed out that many governments and non-governmental institutions have begun to apply this system in order to produce safe food for the consumer, and in the Kingdom the Ministry of Municipal and Rural Affairs has paid attention to the "HACCP" system and issued technical bulletins and manuals in preparation for its application, and the Saudi Food and Drug Authority has crowned the Ministry's efforts to issue a circular on 24/3/2019 obliging food factories and water bottling to apply this system because of its great impact on food safety.

After that, a lecture entitled "Functional Poultry Food and Human Health" was held, presented by Dr. Tarek Obaid, a faculty member at the College, during which he stressed the increased interest in the role of functional foods in improving human health in recent times, where eggs are one of the most important and widespread functional foods such as eggs rich in omega-3, eggs rich in organic selenium and eggs rich in vitamins, in addition to the presence of eggs rich in more than one of the previous elements, namely eggs Columbus, and there is now poultry meat rich in omega-3. Poultry meat rich in vitamin E and poultry meat rich in selenium.

The lecture revealed that these products have an important vital role in protecting the human body from many diseases, including cardiovascular diseases, autoimmune diseases and some inflammatory diseases, in addition to protecting humans from cancer and Alzheimer's, so they are recommended for the elderly and children.

The College held a lecture entitled "Together Towards a Balanced Food to Maintain Your Health", presented by Dr. Raghad Al-Hameed, a faculty member at the College, during which she explained the essential role of balanced food in the health of the body and its freedom from diseases, where balanced food is defined as food that provides the human body with various essential nutrients of proteins, carbohydrates, fats, vitamins, mineral elements and water, which the body needs to carry out its functions properly, build cells, tissues, and organs in the body and prevent diseases, and raise awareness in Society is about balanced food that must contain diverse foods with appropriate rations from different food groups.

The lecture warned of the need for the calorie components of food to be suitable for the body according to the age, type and activity of the person to achieve and maintain a healthy weight, as each type of food contains one or more of these nutrients in varying quantities and each type of them has certain functions in the human body.

In conclusion, a lecture entitled "Organic Agriculture in Achieving Sustainable Agricultural Development: Vegetable Crops as Models" was held, presented by Dr. Adel Hassan, a faculty member at the College, during which he explained that organic agriculture is an agricultural pattern that preserves and develops natural resources by improving the fertility and characteristics of the soil and improves biodiversity and biological cycles, thus preserving the environment from pollution, and this characteristic makes it play an important role in providing the nutritional needs of current generations and preserving the rights of future generations to Achieving sustainable development.

The lecture touched on data and figures from FAO and practical research centers interested in organic agriculture and organic production management in various countries of the world and the importance of organic agriculture and its role in achieving sustainable agricultural development, pointing to the need for further studies in the field of organic production by introducing new agricultural systems

based on the non-use of chemicals and rationalizing the use of traditional agricultural inputs with modern and sustainable scientific methods.

The date of 16 October each year coincides with the founding day of the Food and Agriculture Organization of the United Nations (FAO) in 1945, where FAO participates in this day with events in more than 150 countries around the world, through which awareness and action are promoted globally for the eradication of hunger, the need to ensure food security and a nutritious diet for all.

The University Participates in the Annual Exhibition and Conference of the Food and Drug Authority

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The University, represented by the Department of Veterinary Medicine at the College of Agriculture and Veterinary Medicine, participated in the exhibition accompanying the second annual conference of the Saudi Food and Drug Authority, which was held from 14-17/1/1440 AH, at the International Exhibition Center in Riyadh, where the pavilion of the Department of Veterinary Medicine witnessed the visit of a number of officials led by His Excellency Dr. Hisham bin Saad Al-Jadhi, CEO of the Saudi Food and Drug Authority, and His Excellency Dr. Saleh Al-Dosari, Executive Vice President of the Food Sector. The participating pavilion of the Department of Veterinary Medicine distributed leaflets to visitors to the exhibition to introduce the graduate programs of the department, as well as the specialized training courses held by the department and offered under the supervision of the Institute of Studies and Advisory Services at the university. For his part, Dr. Abdullah bin Fayez Al-Sayegh, Head of the Department of Veterinary Medicine at the College of Agriculture and Veterinary Medicine, stressed that this participation came to introduce the areas of work of the veterinarian, including working in the food sector at the Saudi Food and Drug Authority, in the departments of environmental and food health at the Ministry of Municipal and Rural Affairs, and in the veterinary laboratories and clinics of the Ministry of Environment, Water and Agriculture, in addition to many other sectors, whether governmental or private.

Al-Saegh stressed that the participation resulted in informing and discussing the interested and visitors to the pavilion of the department on the academic programs provided by the Department of Veterinary Medicine and the development mechanisms developed to raise the efficiency of the performance of the work of the veterinarian in line with the visions of the Kingdom's Vision 2030.

Qassim University President launches "Your Health Before Your Appearance" Campaign

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His Excellency the Rector of Qassim University, Prof. Dr. Khalid bin Abdulrahman Al-Hamoudi, launched the awareness campaign "Your health before your appearance", which was organized by the College of Medicine represented by the Student Club and with the participation of the Deanship of

Student Affairs and one of the specialized gyms in the region "Body Masters", and the awareness campaign that is interested in bodybuilding included an exhibition on the health of the individual through appropriate diets, follow-up weight, mass, body fat density, pressure measurement, diabetes analysis, providing instructions, in addition to distributing some brochures.

For his part, His Excellency the President of the University praised this step, extending his thanks and appreciation to the Dean of the College of Medicine, Dr. Hani Al-Shubaily, and the Student Club for this gesture and interest in student and youth activities with regard to individual health and health factors through proper food, proper exercise, weight follow-up and providing guidance, wishing to repeat these activities periodically so that students benefit from this age group, which benefit them.

In turn, the Dean of the Faculty of Medicine, Hani Al-Shubaily, confirmed that this campaign will promote the concept of health, stressing that they were keen to hold these events to raise awareness of bodybuilding and explain muscle injuries, in addition to reviewing the basic meals necessary for the bodybuilder, praising the interaction of students through participation in this campaign.

The Dean of Student Affairs, Dr. Khaled Al-Shraideh, valued this gesture by the College of Medicine and said: The phrase of the campaign is very beautiful and it confirms that a person must take care of his health before his appearance, adding that health is not only physical, but also mental, which helps a person to be looking good, praising the campaign and the exhibition, which contains many products and instructions of interest to students.

For his part, the coordinator of the campaign, student Muhammad Al-Hassoun, stated that the goal of the campaign is to educate university students and maintain their health and so that their bodies are athletic by explaining muscle growth, increasing its size, and the exercises followed, as well as explaining to them the things that the athlete should avoid and introducing them to the most famous types of steroids and their harms, as well as the needs of players in the process of building and reducing the body and nutritional needs, stressing that all these things vary from person to person through age stages, daily activity and mass Body and body fat percentage in advance thanked "Body Masters" for their interaction with the campaign and the provision of 30 free subscriptions that are carried out in the form of a draw for visitors to the exhibition and provide more than 2000 promotional pieces.

The University Palm introduces visitors to Janadriyah with its products and its nutritional and economic importance

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Nakhleh tells the university about its benefits and products to visitors to its exhibition in the upper floor of the heritage of theQassim National Festival for Heritage and Culture «Janadriyah 33», which was designed in a way that simulates the heritage of the region and acquired Its walls with introductory paintings about that blessed tree and its by-products and types of fruits from dates, to come out The visitor to the pavilion is loaded with a huge amount of valuable information about the palm and its various by-products.

When festival visitors come to the heritage headquarters of the region, they are attracted by this attractive design of the Palm Exhibition and rotates In their minds that the palm is only for the production of dates, but when the visitor begins his steps between the models of palm fronds, It is

surrounded on the four sides of the exhibition, which was held on an area of more than 70 square meters, products Diversified that benefit from dates such as "maamoul and chocolate", and other manufacturing industries, It receives a huge amount of historical information about the origin of the palm tree, and its areas of spread in the world, and then Stages of growth, agricultural practices, methods of propagation of date palms, and mechanism to protect them from diseases Innate, so that the guest comes out with a wealth of information with which he senses the status and importance of this blessed tree Food, environmental and economic.

Therefore, the Faculty of Agriculture and Veterinary Medicine at the university, which oversees the exhibition, was keen to introduce visitors to the benefits of Dates that are not limited to eating only, but contain by-products and manufacturing industries, most notably:

Providing local products instead of importing from abroad, especially fodder, and the diversity of materials manufactured from palm and the craft industries based on them, the development and revival of heritage and the exploitation of labor with the provision of additional income For farms, in addition to the environmental importance of investing palm products, which is represented in the low percentage of pollution For not burning these products, reducing the use of pesticides, and reducing the incidence of diseases due to leaving the products secondary and increasing environmental awareness among farmers.

The exhibition also presents ways to benefit from the palm tree and all its parts and trunks in the furniture industry And the manufacture of wood and ceiling supports, in addition to the fiber in the palm in the manufacture of ropes, brushes and pedals and the industrial soil industry , as well as alternative fiber to bamboo and is used as biofuel, while the leaves of Palm trees "fronds" in the manufacture of ceilings , wall binding, traditional furniture , parquet and wood slate And paper pulp, animal feed, organic fertilizer, and also makes baskets from palm fronds Mats , thermal insulation materials, and other manufacturing products in various industries.

From the fruits of the "palm" extracts several products, including date juice "molasses" and the manufacture of vinegar and the manufacture of yeast and industryJams, dates are also used in the animal feed industry, in addition to the manufacture of compost from waste Palms, where palm waste is chopped in order to be used in feeding the soil and creating a suitable agricultural environment For agriculture because it retains water and helps to improve the properties and fertility of the soil.

Studies at the International Date Palm Conference at the University "The Kingdom is the second largest producer of dates with about 15% of production"

https://www.qu.edu.sa/content/news/371 [6]

The sessions dealt with modern methods of resistance to the "red" weevil and the possibility of obtaining safe food products

Studies at the International Date Palm Conference at the University "The Kingdom is the second largest producer of dates with about 15% of production"

Information and Communication Center:

The results of the study presented by Dr. Abdelkader Bouversaoui, Professor at Houari Boumediene University of Science and Technology at the Second International Conference on Date Palms currently

held at the University, proved that the Islamic world in Africa and Asia is considered the main producer of dates globally, pointing out that the number of date-producing countries in the region is 13 countries that produce 95% of the total global production of dates.

During his presentation of the study he presented to the conference entitled "Comprehensive Talk about Dates", Bouversaoui added that Egypt occupies the first place in the production of dates with 18% of global production, while Saudi Arabia occupies the second place with 15%, Iran comes in third place with 14%, the UAE occupies the fourth place with 14%, followed by Algeria in fifth place with 9%, and Iraq in sixth place with 8% of the production of global dates.

The study pointed to the diversity of date varieties, which are more than 1400 species, began to be cultivated in the Euphrates basin more than 6000 years ago, used by man as an ancient and modern food, and used its leaves in some traditional industries, and trunks to build villages, in addition to being an integrated food, because of its composition rich in iron and potassium, and contains a large amount of vitamins, minerals, and carbohydrates that make it a high-energy fruit, and dates represent a favorite food in the Prophet's Sunnah.

Throughout the first day of the Second International Date Palm Conference, the corridors of Qassim University witnessed the discussion of several scientific sessions throughout the day in the morning and evening periods, with six sessions.

The first session began under the chairmanship of Dr. Yousef bin Abdullah Al-Sulayem, and its main focus was on the economics and marketing of dates, through the presentation of a research paper presented by Dr. Hans van der Beek entitled "Cooperation between Saudi Arabia and the Netherlands in improving date production and quality.

During which Dr. Beck presented ways to help companies and farmers manage water and reduce its consumption by 70%, as well as ways of cooperation between the two countries in the development of methods of treating pests that threaten palms, most notably "palm weevil", and the presentation by Dr. Beck included how to improve irrigation techniques and raise the efficiency of internal marketing.

After that, Mr. Saud Al-Feda, Director General of the Agricultural Department of the Department of Awqaf Saleh Al-Rajhi, presented a working paper on how to qualify projects and farms to obtain specialized international agricultural certificates, most notably the certificate of "Global Gap", pointing out that the most important objectives of obtaining the certificate is to ensure access to safe food products healthily and give a clear indication of the achievement of the farm's mission in supporting food security locally and globally, as well as protecting the environment from the negative influences of agricultural production, and the certificate aims to instill confidence in the farm Consumers, as it is a laid-back for agricultural products outside the borders of the country for many countries of the world.

Then Dr. Ijaz Ashraf presented a paper entitled The level of knowledge of farmers on the processing of the production and marketing of dates in Pakistan, followed by Dr. Shamim Ahmed who presented a research paper entitled Marketing products from foodstuffs based on dates as healthy products, during which he talked about many ways in which the food industries produced from dates such as juices and others can be utilized, and at the end of the session the field of discussion was opened among the attendees on the topics raised in the session and answered the Related inquiries.

The second session dealt with "Techniques of Palm Production and Care", with the participation of a number of researchers and experts in this field, including Dr. Imad Fouda, Dr. Jamal Abdul Hakim, Dr.

Shahida Arshad Khan, Dr. Ahmed Khan, Dr. Hadi Adam, Dr. Lubna Abdul Jalil, and the session was chaired by Dr. Abdulaziz bin Bani Al-Harbi.

She presented research papers on the impact of palm pollination techniques and methods on the quantity and quality of date production.

While the third session discussed one of the most important pests that affect and damage the palm, which is the "red palm weevil", and the session was held under the chairmanship of Dr. Saleh bin Sulaiman Al-Huairini, and aimed to identify modern methods of resistance to that pest and ways to eliminate it, where the main speaker, Dr. Frank Fit, presented the modern methods used to detect the red palm weevil at an early stage before its spread in the palms, because of the possibility of resistance in its early stages.

Dr. Mohamed Kamal Abbas, Dr. Bader Al-Sabah, Dr. Atef Abdul Razzaq and Dr. Abdulelah Abdel Moneim also participated in their scientific papers, which dealt with the study and analysis of the "red palm weevil", which is considered an edible insect, but it is a traditional food in several countries, and high nutritional value with a high content of fat, protein, and minerals.

The fourth session, which was held under the chairmanship of Dr. Nasser bin Saleh Al-Ghameez, addressed the techniques of palm production and care, the future of investment in the date industry, palm products and food security, the most important developments in the field of palm cultivation and the industries based on it, and ways to care for it so as to achieve the highest possible productivity and achieve the greatest benefit for farmers and companies interested in palms, and Dr. Abdullah bin Mohammed Al-Hamdan talked about the most important possible ways towards a better future to invest in the date and palm products industry in order to achieve a kind of food security, Palms can fill a large gap in the world's food gaps if exploited optimally.

While Dr. Yousef Al-Fahid talked about how to identify and estimate the field water needs and crop coefficient of palms using "lisimmeters" in the Kingdom of Saudi Arabia, in order to provide quantities of water used in palm cultivation and achieve the highest productivity of dates with the lowest amount of water, which contributes to increasing the area used in palm cultivation as well as benefiting from each drop of water in increasing the number of palms in the Kingdom.

Dr. Khalid Mohammed Huldar touched on the pollination methods of the most important palm varieties in the Kingdom, determining the duration of the feminine viability of the most important varieties of the Kingdom's palms to pollination, in addition to the impact of water on increasing the production of dates.

The session was attended by Dr. Abdullah Al-Jamdan, Dr. Abeer Abdul Kareem, Dr. Ahmed Mahrous and Dr. Hassan Owais.

The sessions of the conference continued in the evening period, where the fifth session witnessed discussions on the technology of manufacturing palm products, chaired by Dr. Fahad bin Mohammed Al-Rumayyan, and participated in by Dr. Tariq Al-Adawi, Dr. Khalifa Al-Riahi, Rehab Abdullah, Dr. Al-Sayed Attiyah and Adel Ahmed, with their scientific papers,

The research papers touched on the most important developments in this field, which is witnessing a remarkable development day by day, where dates have become a basic input in many food products, and an essential component of the components of food tables in many countries of the world, the session was chaired by Dr. Fahad bin Mohammed Al-Rumayyan, where Dr. Adel Mahmoud presented a comparative analysis on the methods of drying palm fruits from dates and the impact of sunlight on fruiting dates.

The sessions of the first day of the conference concluded with the sixth session, which was devoted to discussing the topic of date palm pests and ways to combat them, and this aspect received great attention from the organizers of the conference, scientists and specialists in the study of palm pests, given the danger of these pests to the whole process of palm cultivation, as they can cause the collapse of farms, poor productivity and crop damage.

The session was chaired by Dr. Ahmed bin Ali Al-Ruqaiba and with the participation of Dr. Mouloud Ghadban, Dr. Masoud Ben Sassi, Dr. Siham Maashiya and Dr. Khalid Al-Hatheeb.

Dr. Samah bint Mohammed Benshaban spoke about the impact of temperature, biological, "biological" and demographic factors on date palm cultivation, while Dr. Khalid Al-Hudaib talked about methods of examining disease-resistant genes in some varieties of date palms in Saudi Arabia, so that they can be developed and increased, which increases the palm ability to resist pests.

References

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