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Souvenir

International Conference on

**Agriculture, Horticulture
and Botany
(AHB-2021)**

International Research and Development Center for Publication (IRDCP)

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About Conference

International Conference on Agriculture, Horticulture and Botany (AHB-2021)

During the worldwide lockdown due to COVID 19 pandemic, a lot of important activities have come to a halt. However, when we look at the brighter side, all of us have more time for adding to our knowledge and insights.

With this aim, to keep contributing to learning and motivation International research and development Center for publication is going to organize a two-day International Conference with the title “**International Conference on Agriculture, Horticulture and Botany (AHB-2021)**” on Jan 22-23, 2021 through online mode.

We hope, this online mode of the conference in COVID-19 pandemic will be an appreciable step in promoting the research activities and new information between researchers, developers, students, academicians and practitioners working in and around the world by keeping the social distance in view to stop the spread of COVID-19 disease. This conference aims is to present the current researches being carried out in the field of social science and education development around the globe.

Prospective authors from academia as well as industry are invited to submit their abstracts that illustrate original/unpublished works and industrial applications describing advances and significant innovations in the field.

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Message

I am extremely pleased to share that International Research and Development Center for Publication (IRDCP) is organizing a two days **International Conference on Agriculture, Horticulture and Botany (AHB-2021)** on Jan 22-23, 2021.

I am sure the state of art lectures from the invited experts and the research findings of researchers, academicians, utility engineers will enrich the knowledge of all the participants. It will provide an excellent opportunity for students to learn new ideas.

I offer my best wishes to the whole team of the organizing committee, the participants, and volunteers for the grand success of the conference.

Dr. Kiran
Convenor AHB-2021

Message

I am happy to know that International Research and Development Center for Publication (IRDCP) is organizing a two days **International Conference on Agriculture, Horticulture and Botany (AHB-2021)** on Jan 22-23, 2021. I am sure that, this conference would provide an ideal platform for the academicians, scholars and experts to present and exchange their research findings and Ideas.

I wish the conference a great success.

Prof. (Dr.) Hamid Saremi
President (Chancellor)
Assrar Higher Institute of Education (Deemed to be University)
Mashad - Iran
(Ex- Vice- Chancellor Islamic Azad University ,Quchan Branch - Iran)

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Abstract of AHB-2021

Validation of pink bollworm *Pectinophora gossypiella* (Saunders) management strategies in Bt cotton

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Abstract— A two year field study was conducted on validation of pink bollworm management strategies in Bt cotton in nearly fifty cotton farmer fields during 2018-19 and 2019-20 in selected villages of Kurnool district under IRM-Pink bollworm management project sponsored by Central institute for cotton Research, Nagpur. During the year 2018-19 Pink bollworm infestation ranged from 30-55% in IRM demo plots where as in farmers practice infestation ranged from 31-57%. Average Number of insecticidal sprays in IRM fields was 5.0 where as in farmers practice it was 7.3. IRM demo fields had registered a benefit-cost ratio of 1.9:1 where as in farmers practice it was 1.2:1. During the year 2019-20 IRM farmers had registered a green boll damage of 19-32% where as in farmers practice it was 20-70%, no of Average insecticidal sprays in IRM farmer fields were 4.66 where as in farmers practice it was 7.2, IRM farmer had registered a benefit-cost ratio of 2.17:1 where as in farmers practice it was 1.3:1.

Keywords— Pink bollworm, Insecticide resistance management, green boll damage, pheromone traps.

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***Satureja montana* essential oil and *Cotinus coggygia* extract to improvemicrobial quality and the shelf-life of carrot-orange juice.**

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Abstract— Natural antimicrobial agents derived from herbs and plants have been used for millenia in medicine and food preservation. Indeed, essential oils (EO) and plants extracts (PE), in addition to contributing to flavour and taste, can act against food microbiota thus enhancing its stability. Moreover, recently, the consumers’ demand for natural products – free of chemical preservatives - has been strongly increased.

Fruit-based juices are susceptible to spoilage microorganisms, mainly yeasts and lactic acid bacteria, which negatively affect their organoleptic and nutritional properties making the product unacceptable to consumers.

The aim of this study was to evaluate the effects of natural compounds, i.e. EO of *Satureja montana* and PE of *Cotinus coggygia*, in combination with mild thermal treatments on shelf-life of carrot-orange juice and its microbial stability. In particular, viability of two spoilage microorganisms *Saccharomyces cerevisiae* and *Lactobacillus plantarum* was addressed.

The EO and PE were preliminarily characterized by gas chromatographic analyses which showed that *S. montana* was composed mainly by carvacrol and o-cimene, while the main components of *C. coggygia* were sulfuric acid and fustin.

Both *S. montana* EO and *C. coggygia* PE displayed a good antimicrobial activity against *S. cerevisiae*, with minimum inhibitory concentration (MIC) values of 0.351 mg/ml and 0.094 mg/ml, respectively. On the other hand, *Lactobacillus plantarum* was more resistant than *S. cerevisiae* (MIC > 0.5 mg/ml).

The fresh carrot-orange juice was added with the *S. montana* EO or *C. coggygia* PE at MIC/4 concentrations for *S. cerevisiae*. Following its deliberate contamination with the spoilage microorganisms (4 Log CFU/ml), samples were heat treated (60 °C for 2 or 5 min) and stored at

room temperature for 9 days or 4°C for 50 days. Changes insurviving spoilage microbiota, pH, colour and antioxidant activity were monitored over storage.

Overall, the results highlighted the possibility of stabilizing a juice with a high pH (5.4)by applying the "Hurdle Technology". The natural compounds enhanced the efficacy of heat treatments in inactivating/damaging the spoilage biota and delaying its recovery over storage. Moreover, no significant changes in the pH and color of the juices were found during storage, while limited variations in the antioxidant activity were detected.

Keywords— Fruit juice, *Lactobacillus plantarum*, Mild thermal treatment, Natural antimicrobials, *Saccharomyces cerevisiae*, Shelf-life, Spoilage.

Crop regulation in pomegranate for higher quality yield under hot arid climate

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Abstract— Pomegranate (*Punica granatum* L.) is an emerging fruit crop of hot arid regions. It has enormous nutritional, medicinal value and rich in antioxidants particularly anthocyanins. In pomegranate, crop regulation depends upon the availability of irrigation water/rainfall, climatic condition, pests and diseases, fruit splitting and market demand. The present investigation was carried out to induce flowering during desired period to improve fruit quality and minimize fruit splitting through withholding irrigation, pruning and ethrel application. There were two factors horticultural interventions and chemical applications comprising 20 treatment combinations replicated thrice in Factorial RBD. The horticultural interventions included P₀-control natural flowering, P₁-withholding irrigation during March, P₂-withholding irrigation during March + pruning + thinning, P₃- withholding irrigation during June and P₄- withholding irrigation during June + pruning + thinning while chemical applications comprised of C₀-control without chemicals, C₁-ethrel 1 ml/l + DAP 5 g/l, C₂-ethrel 2 ml/l + DAP 5 g/l and C₃-ethrel 3 ml/l + DAP 5 g/l. Among horticultural interventions, significantly maximum bisexual flowers, fruit yield, maturity index and minimum fruit splitting were recorded (27.43%, 9.27 t/ha, 45.18 and 11.51 %) in withholding irrigation during June + pruning + thinning as compared to control natural flowering (22.35%, 7.32 t/ha, 35.90 and 21.78 %), respectively. Among chemical treatments, significantly maximum bisexual flowers, fruit yield, maturity index and minimum fruit splitting were recorded (25.51%, 9.52 t/ha, 38.65 and 15.46 %) in ethrel 2 ml/l + DAP 5 g/l application in comparison to control without chemicals (24.20%, 7.32 t/ha, 33.99 and 20.52 %), respectively. Among interactions treatments, significantly maximum bisexual flowers, fruit yield, maturity index and minimum fruit splitting were recorded (28.22%, 10.90 t/ha, 47.81 and 9.42 %) in withholding irrigation during June + pruning + thinning + ethrel 2 ml/l + DAP 5 g/l application as against control natural flowering without chemicals (22.03%, 6.64 t/ha, 33.35 and 26.16 %), respectively. Therefore, it can be concluded that in pomegranate, withholding irrigation during June + pruning + thinning + ethrel 2 ml/l + DAP 5 g/l treatment combination significantly improved sex ratio, fruit yield, quality and reduced fruit splitting through induction of flowering during optimal condition.

Keywords— Flower regulation, Water stresses, Ethrel, Sex ratio and Fruit splitting.

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