

## Water Management and Agriculture Development

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### Editorial

Irrigation and drainage are two sides of the same coin of water management and for sustainable agricultural development efficient water management should be addressed timely. Irrigation, which is artificial application of water to crop may improve the yield of crops many folds, if it is applied adequately, in equitable manner and at appropriate time. Most of the time, water is not available for irrigating crops in required amount, sometimes it is in deficit or it is in excess. If it is available then accessibility and affordability are also issues of importance, which need attention of planners and policy makers. Currently, water management experts try to explain yields with respect to water by using the term 'Water Productivity', which is expressed as yields per unit of water. Water productivity can be improved by two ways only i.e., (i) increase yield without increasing water consumption or (ii) sustain yield and reduce water consumption. To attain this, it is required to apply recent and efficient on-farm water management technologies in farmers' fields keeping in view the farmers' socio-economic conditions, and other prevailing constraints.

If water saving technologies is applied in farmers' fields more area can be irrigated with limited water. These water saving technologies include reducing the various losses in conveyance, application, distribution, storage and utilization processes. Conveyance loss can be reduced, if lining of canal/distributary/minor through skilled workers and proper lining material is performed. Application losses may be reduced, if water is applied to the crop in required amount using recent irrigation water application methods. Distribution losses may be

reduced, if water is distributed uniformly at all the locations as per requirement. Storage losses may be reduced if water is applied in less amount but more frequently in the root zone of crop using drip or trickle irrigation. Water utilization by the crop may be enhanced by reducing the losses in evapotranspiration, percolation and runoff mainly by applying mulching, lining and creating water harvesting/storage structures/bunds around agricultural fields, respectively.

In the present issue of this journal, researchers from various countries have mainly addressed the issues related to water saving techniques in order to irrigate more area with limited available water, application of drip irrigation and water canes in okra, where water is not easily accessible and affordable, optimal irrigation with drip in onion crop with mulching using Pan evaporation data, rational criterion based distribution of water among irrigation water users, efficient and equitable distribution of water from canal by employing mathematical model, estimation of evapotranspiration by various methods and their comparison, drip irrigation application to onion crop under water deficit or water stressed conditions, application of different irrigation methods to sunflower and effect on bio diesel production, and tomato yield response under different irrigation regimes.

In my opinion, all research papers contribute towards advancement of knowledge in the field of irrigation and water management and practical application of limited irrigation water to various crops with study of impact on yield of crops as well, so efforts of all the contributors are worth appreciating.