Improved Leaching Practices
SAVE WATER, REDUCE DRAINAGE PROBLEMS

This 1962 article from the California Agriculture archives demonstrated that intermittent water applications—in the form of rainfall or sprinkler irrigation—leach unwanted or excess minerals from the topsoil much more effectively than the more-common ponded or flood applications.

Early research on improved leaching practices

1962

“Field studies conducted at Tule Lake provide striking evidence that ponding water is not always an efficient method of leaching. In some plots, as much as 6 acre-ft. of water per foot of soil depth was applied, yet the soil salinity was not reduced below one half of the original amount present. Of the six feet of water applied, the first one-half foot was responsible for the leaching obtained.

“During the winter months, 4 inches of rainfall was recorded. In this case the soil salinity was reduced by one half again, yet the quantity of water involved was 18 times less. Irrigation techniques can also be used to produce similar results. Reasons for these effects involve consideration of the structure of the soil and the variation in the pore velocity. Similar results have been found in other parts of the world. Reclamation of soils inundated by the sea in the Netherlands flood disaster of 1953 was more efficiently carried out by rainfall than by ponding.”


James W. Biggar was assistant irrigationist, Department of Irrigation, at UC Davis when this article was published in 1962. By the time of his retirement more than 30 years later, he was professor and water scientist in the UC Davis Department of Land, Air and Water Resources. Respected worldwide among agriculture professionals and environmental advocates for his research on soil properties, irrigation and the environmental fate of agricultural chemicals, Biggar was also highly regarded as a teacher and mentor by his students and eventual colleagues.

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—W. J. Coats

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