STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 7-8, 2017
Prepared on November 14, 2017

ITEM NUMBER: **16**

SUBJECT: **Irrigated Lands Regulatory Program – Fertilizer Value of Nitrogen in Groundwater**

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THIS ACTION: **Informational**

DISCUSSION

Much groundwater underlying irrigated agriculture in the Central Coast Region contains elevated concentrations of nitrate-nitrogen. That this nitrate is bioavailable and can be considered when budgeting crop nutrient applications is not fully accepted by all growers in the Central Coast Region.

The Central Coast Water Board's Ag Order requires a subset of growers to report total nitrogen applied (TNA). As part of TNA reporting, growers must report the amount of nitrogen applied through their irrigation water. Staff analysis of TNA data indicates that, while irrigation water nitrogen represents a significant amount of applied nitrogen for many growers, the majority of growers are not accounting for the amount of nitrogen applied through their irrigation water in their crop nutrient budget to significantly reduce their fertilizer nitrogen applications.

Dr. Michael Cahn is an irrigation and water resources advisor with the UC Cooperative Extension, Monterey County. In the April-June 2017 issue of *California Agriculture*, published by the University of California, Dr. Cahn presents his research in an article titled "Field Trials Show the Fertilizer Value of Nitrogen in Irrigation Water." Some of Dr. Cahn's conclusions include the following:

> "The 2015 trials clearly demonstrated that irrigation water NO_3-N was at least as effectively used by the crop as fertilizer N."
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> "It may be appropriate not to credit any of the irrigation water NO_3-N applied during crop establishment…From that point forward, crediting 100% of irrigation water NO_3-N against assumed fertilizer N requirement would be a reasonable practice if in-season irrigation were managed efficiently."
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> "These field trials documented that NO_3-N in irrigation water is effectively used by crops. Growers can confidently adjust their fertilization practices to reflect the agronomic value of this N source. In doing so they will reduce the potential for N loading to groundwater."

The full article is attached and can also be found at this link:
https://doi.org/10.3733/ca.2017a0010

Dr. Cahn will be at the board meeting to present his research findings on the bioavailability of nitrate-nitrogen in groundwater.

ATTACHMENTS

1. Field trials show the fertilizer value of nitrogen in irrigation water