

## California drought: on-farm forage balance and dairy cow management

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Information from different water districts indicates that water allocations in 2014 will be from zero to a probable maximum of one or two acre feet per dairy farm. A typical crop, like corn, requires from 4 to 6 acre feet to complete the production cycle. Farmers are planning to use groundwater to supplement district water allocations. Supplementing groundwater may vary depending on the situation of each dairy or its location (volume, salinity, etc.). This article analyzes the possible interaction between irrigation water availability, forage balances, and some management practices on dairy farms.

Homegrown forages (silage, haylage, and hay) are very important for California dairies. One of the most important challenges this year will be forage production. Considerable amounts of winter forages were planted this year, most of these crops were partially irrigated and are waiting for late seasonal rains. Production of summer forage crops are going to be critical and they must be carefully planned. An example of a forage balance to estimate total forage requirements, from the fall 2014 to the fall 2015 (expressed on dry matter-DM basis), could be the following:

Total forage requirement (ton DM/year) = (total animal forage requirements) - (total on-farm forage availability).

*Where:* (1) Total animal forage requirements should be calculated considering all animal categories (replacement, dry and milking cows), and (2) Total on-farm forage availability, may include a careful estimate of the total winter forage recently harvested (2014) and on-farm forage storage bought or harvested before 2014.

This forage balance will help planning dairy cow management and other forage crops, for example:

- \* Decide the on-farm need for summer forage crops. A high water-efficient forage, adapted to dry soil conditions should be considered. Some sorghum varieties have these characteristics. UC Extension has technical support to help with sorghum varieties, production per acre, cost of production, etc. (please, see below). The goal is to produce a high volume of forage and compensate the lower grain content of sorghum compared to corn silage with other energy supplements and/or local byproducts.
- \* Estimate the forage deficits and forage needs that will need to be purchased. Analyze nutrient deficiencies with your nutritionist, in order to buy those feeds that may provide not only DM but also some specific deficient nutrients (e.g. energy, protein, amino acids, effective fiber, etc).
- \* Estimate number of animals according to forage availability: (a) manage calving scenarios, (b) reduce replacements and/or cows, if necessary, (c) analyze culling rate possibilities, and (c) minimize number of animals in the hospital pen.
- \* Re-evaluate forage balance every month and be prepared for a zero water-allocation scenario.
- \* Discuss your plan and decisions with your private consultant.

*For more information, please visit the UC ANR's California Institute for Water Resources website's drought resources page with information for production ag and home-owners:  
[http://ciwr.ucanr.edu/California\\_Drought\\_Expertise/](http://ciwr.ucanr.edu/California_Drought_Expertise/)*