Protect And Conserve Groundwater

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Without a fresh supply of water, we would die in only a few days. To keep functioning, the human body needs approximately 2½ quarts of water a day. Some of this water comes from food, but six to eight glasses of pure liquid are needed to make up the balance.

The average person in an American home uses from 20 to 80 gallons of water each day for activities such as drinking, cooking, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Although our use of water continues to increase, the total quantity of water available for use remains the same.

Water covers 75 percent of the earth's surface. Despite this abundance, all but three percent is seawater. Three percent isn't much, but it's all we've had since the beginning of time. Water recycles over and over as rain or snow falls to earth, percolates into the ground, or evaporates into the atmosphere and returns again to earth.

Because of the very large amount of water in ground storage, there is no overall shortage. There are, however, many problems of local and regional supply because needed water is not always in the right place at the right time or it is not of the right quality. The demand for water continues to increase as more people use more water in more ways every day.

The widespread availability of groundwater in most parts of the country, its dependability in times of drought, and its relatively high quality have led to an increase in groundwater withdrawals of nearly 190 percent in the past 30 years.

Groundwater is one of the nation's most valuable resources, and many find it one of the most difficult to understand. Once contaminated, water may remain contaminated for generations. Yet we must rely on it for survival. It provides 35 percent of the fresh water withdrawn for municipal water supplies, 97 percent of rural drinking water, 40 percent of irrigation water, and about 26 percent of the water used by industry, excluding thermoelectric power uses. Groundwater is now the source of drinking water for more than 50 percent of the population.

Recycling and conserving water and protecting it from contamination will be essential if the economy is to expand, agricultural production is to be maintained, and cities are to have adequate water supplies for new residents and new industries. Though 90 percent of water supplied to industries and homes is available for reuse, only half of the water withdrawn for agriculture is returned. More widespread adoption of water-saving systems will help sustain irrigated agriculture where water supplies are diminishing. It will also curb ecological damage to overtaxed rivers and streams.

We must carefully conserve and protect our water resources to assure an adequate and safe supply of water for future use. Our children and grandchildren are depending on it.

Alfalfa Cutting Management

Cutting management is an important tool in achieving high quality, high yields, and stand persistence. It also can be effective in reducing the impact of weed, insect, and disease pests.

Harvest schedules will depend somewhat on the quality goals of the producer. Progressive dairy farmers have recognized the economic importance of producing high quality forage and will often cut early in order to obtain greater than 20 percent crude protein, less than 30 percent acid detergent fiber, and less than 40 percent neutral detergent fiber. Such high-quality forage has the potential to increase forage dry matter intake and milk production while decreasing the requirement for grain.

For high quality alfalfa, make the first cutting at mid- to full bud stage, as long as:

- Better adapted varieties with multiple pest resistance are used.
- Adequate levels of lime, phosphorus, and potassium are maintained.
- Insect pests are monitored and controlled.

Cutting pre- or early-bud alfalfa is not recommended because there is a higher risk of losing the stand. Also, fiber levels may be undesirably low when cut extremely early.

If an alfalfa stand has been weakened by winter stress, make the first cutting at early- to mid-bloom stage.

Generally, summer cuttings are permitted to reach early-bloom (approximately 35 days between cuttings). The average cutting intervals between first and second cuts and second and third cuts, for producers in the Pennsylvania Alfalfa Growers Program who made four or more cuts per year, was 37 and 33 days, respectively. The crude protein values of the second and third harvests were 18.6 percent and 20.6 percent, respectively, and acid detergent fiber values, 37.0 percent and 31.3 percent, respectively.

If properly harvested and stored, alfalfa silage can provide a high-quality forage with less risk of damage to weather. For high-quality silage, field wilt to a moisture content of 60 to 70 percent moisture before ensiling for conventional upright, bunk, or pit silos or round bale silage, and 40 to 60 percent moisture for sealed upright silos. Making a good, tight pack assures an oxygen-free environment and depends much on fineness of chop, moisture content, and rate of fill. Silage preservatives, additives, and inoculants may improve silage fermentation in some cases but they are not a substitute for good management.

Used at recommended rates and properly applied, organic acid preservatives make it possible to successfully store alfalfa hay when baled at up to 30 percent moisture.

Chemical drying agents applied during mowing can reduce drying time. For more details, refer to Agronomy Facts 8: Chemical Conditioners for Hay, available at your county Penn State cooperative extension office.

Protect Bees From Mites

Two mites which attack honey bees have recently been introduced into the United States. One of these, the varroa mite, is a parasite that is killing colonies and drastically reducing honey yields. Varroa is considered by many to be the most devastating pest of honey bees in the world. This mite is present throughout much of the southern United States, where queen bees and packages are produced for sale. Many Pennsylvania beekeepers purchase queens and packages from the south each year.

Before shipment, queens and packages can be effectively treated for varroa mite with the pesticide Fluvalinate. This chemical is incorporated into plastic strips or tabs which are placed in close contact with the bees, killing any varroa mites present and not harming the bees. Unfortunately, many queen and package producers are not treating their bees before shipment unless requested to do so by the beekeeper purchasing the bees.

All beekeepers should require varroa mite treatment of all out-of-state packages and/or queen bees at the time they are ordered.

Pennsylvania is currently under a quarantine to keep varroa mites out of the state for as long as possible.

(Turn to Page D23)