Facts of Holly Berry Life

Holly trees, traditionally associated with the Christmas season, are one of a unique group of plants having both male and female species, says Dr. Richard Craig, associate professor of plant breeding at The Pennsylvania State University.

The attractive red berries are fruits of the female tree, Dr. Craig reports. Such holly berries have their beginning 15 to 18 months earlier, as observed in a study by Dr. Daniel C. Milbocker, former graduate assistant at Penn State and now with the University of Kentucky.

Holly shoots cease growing at the end of summer, due to the shortening of the days or to some other environmental factors. At this time each shoot forms a terminal bud. Within the buds are the tissues which eventually form next year's shoots and flowers.

As autumn approaches, the holly tree becomes dormant--a type of suspended animation. This dormancy protects the holly from winter injury and is removed gradually by continued exposure to cold temperatures.

No development occurs in the holly during the dormant season until about the second week in April. Then the terminal buds begin to enlarge. Masses of cells begin to develop inside the buds--producing the stem, leaves, and flowers.

By the first week in May, one can observe--with a microscope--the development of the flower parts. During the next few weeks, the flowers develop very rapidly. At this time one can first observe the differential development of the male and female flowers.

Generally, flowers of the female plants are solitary, meaning they are produced singly on the flower stem. The male flowers are produced in triplicate--three on a flower stem. In addition, the anthers or male parts of the flower on female plants cease normal development early in their growth.

By May 20, one can observe flower buds on the elongated shoots. The latter have been growing continually during the month and will be about 4 to 8 inches long with 4 to 8 spiny leaves on the end of the shoot. The flowers are borne on the basal end of the shoot, usually in the axils of the leaves, the area where the leaf joins the stem.

By the middle of June, the shoot has reached its ultimate length, the leaves are almost fully expanded, and the flowers are open. Close inspection indicates the flowers have 4 sepals, 4 petals and, in the female flowers, 4 undeveloped anthers and a well developed pistil. The male flowers have fully developed anthers which produce large amounts of pollen. The pistil, however, is not developed.

Transfer of pollen from male to female trees is generally necessary for fruit and seed development. Pollen is most often carried by insects. Where a male tree is not available, berry production can be assisted by introducing a cut branch from a male tree which is producing pollen at the same time the female flowers are receptive.

After pollination the berries begin a period of rapid development. By late summer they begin to change from green to red. By late autumn they are bright red and are ready to brighten the home during the holiday season.

Use of Electrolyte Solution Prevents Calf Dehydration

by N. Alan Bair
Assistant County Agent

It's no secret that many dairymen are having difficulty raising baby calves. The problems are many and varied, but one problem that is common is calf scours.

Many calves die with scours simply because they dehydrate. To overcome this the calf should be given an electrolyte solution to help maintain its body fluids while it is recovering from the scours. Do not look at this as a subsittute for good calf management practices such as sanitation, proper housing, etc.

The elctrolyte solution for oral use in scouring calves is made up as follows: Mix eight (8) tablespoonfuls of dextrose or cerulose (white corn syrup) with two (2) teaspoonfuls of salt and one (1) teaspoonful of baking soda or sodium bicarbonate. Add enough water to the above to make one (1) gallon.

Feed this solution at the rate of one pint (approximately one pound) per 10 pounds of bodyweight daily to afflicted calves. Remember, the intended use is to prevent or alleviate dehydration in support of usual treatment for scours. Use the solution as a replacement for the usual milk or liquid milk replacer fed to the calf for a period of one to one and one-half days. Preferably, feed the electrolyte solution three - four times daily. For example, a 90 pound calf might receive a quart of electrolyte solution four times daily. Make up the electrolyte solution fresh each day. If oral antibiotic medication is used, place it in the allowance of electrolyte solution at a level in accordance with directions on the label.