

Valentine's Day Connection to Agriculture

Every year I try to come up with something for my Valentine's Day article that is related to agriculture. I've done articles on flowers in the past and want to mention that the flower business is part of the area of agriculture called Horticulture. According to my Webster's Dictionary, Horticulture is the science or art of cultivating fruits, vegetables, flowers and plants. That includes the cultivation of a garden.

On Valentine's Day the most popular flowers given are cut flowers with the red rose leading the list. Most females enjoy receiving any color of roses and may like a color other than red even better. Most of us enjoy receiving flowers of almost any kind at any time.

One other thing that is popular to give for Valentine's Day is chocolate.

Where does Chocolate come from?

All chocolate comes from the cacao (pronounced Kah Kow) tree. The scientific name is Theobroma cacao. Theobroma means "food of the gods." Cacao trees have grown in Central and South America for thousands of years. Wild cacao trees grow up to 30 feet tall beneath a canopy of taller trees. The canopy trees protect cacao from the intense tropical sun, wind damage, and moisture loss. It requires specific conditions to thrive, which is why it grows only within twenty degrees to the north or south of the equator.

The cacao tree is different from the deciduous trees we have here. The cacao tree's flowers grow directly on the lower trunk and branches, a pattern called cauliflory.

Growing flowers on the lower trunk and branches increases the flower's chances of being pollinated by the tiny flies that live and breed in the rainforest debris surrounding the tree. The tiny flies, called midges, are drawn to the moist leaf litter and rotting cacao pods on the forest floor. The decaying debris creates the ideal conditions for midges to live and breed while the flowers provide nectar in exchange for being pollinated. (The midges have the fastest wingbeats in the world at 1,000 times per second.)

Scientists have discovered that the midges may play a crucial role in cacao pollination. The cacao flower, which is about the diameter of a nickel, is complicated in design and the midge is the only animal that can work its way through the flower to pollinate it. Midges are so small that they fit easily on the head of a straight pin. Studies have shown that midges don't like plantations and that cacao trees planted in plantations do not yield as well as trees in rainforests

Animals also play an important interdependent relationship with cacao. Monkeys, rodents, birds and other animals live near cacao trees. The animal's teeth, bills and claws are used to break into the cacao pods to eat the sweet pulp inside. Cacao seeds grow inside tough-skinned, elliptical pods, surrounded by fruit pulp. Unlike the fruit of most trees, mature pods do not fall from the cacao tree—and the seeds cannot germinate unless freed from the pod. Cacao seeds have nutritious oils, starches, and proteins that provide energy to the growing seedling, they also contain caffeine and theobromine, which gives them a bitter taste. The bitter taste of the seed discourages animals from eating cacao seeds and causes them to spit out the seeds. Cacao trees rely entirely on these animals to spread their seeds along the rainforest floor to start the next generation of trees. Without the intervention of the animals, the pods would stay on the tree and rot.

Cacao farming has not changed much since prehistoric times. Because the pods grow directly off the trunk and branches of the tree, machines cannot be used to harvest the pods. Farmers must harvest cacao pods and prune the trees by hand. Pods are sliced from the tree with a machete or a small blade, gathered into bags, and then split open so the pulp covered seeds can be piled up and fermented. The pulp heats up and disintegrates during the chemical process of fermentation. Fermentation is critical to developing the chocolate flavor. After fermentation the seeds are put in the sun on tables, rooftops, or large mats to dry. After drying, the cacao seeds are packed and shipped to brokers, market and factories that will turn the seeds into cocoa powder, cocoa butter, and chocolate.

How much does a cacao tree produce?

Under good conditions, a single mature cacao tree produces an average of thirty to forty pods in a year. Ten pods yield about 1 pound of dried cacao beans, an acre of trees yield about one ton of beans. Only 1 to 3 percent of many hundreds of flowers produced by a single tree are fertilized and develop into pods. According to the Foreign Agricultural Service of the USDA, the leading producers of cacao in 1997-98 were in order, the Ivory Coast (44.4%), Ghana (13.2%) and Indonesia (12.2%)

Happy Valentine's Day February 14th.

For teachers check out the following website: <http://www.fieldmuseum.org/Chocolate/education.html>

WVDA Ag Safety Days February 22 – 25, 2010

The West Virginia Department of Agriculture will provide free safety training to anyone attending the Ag Safety Days certification training classes at the WVU Tree Fruit Research & Education Center, Kearneysville, WV February 22 – 25, 2010 You must register before February 13, 2010 for this training. For more information contact Kathy Martin, Telephone 304-558-2209.

Winchester Area Fruit Production School February 19, 2010

The Winchester Area Fruit Production School will be held February 19, 2010 at the Best Western Lee-Jackson Inn Banquet Convention Center, Winchester from 8:00 am to 3:00 pm. There is a \$9.00 registration fee, payable at the door. Please call the Frederick Office at 540-665-5699 and let them know if you will be attending, so they have an accurate count to provide lunch. You must sign in by 8:30 am and sign out at the end to receive re-certification credit for attending. If you have questions contact Cyndi Marston cmarston@vt.edu or by telephone 540-432-6029.

2010 West Virginia Small Farm Conference March 1 – 4, 2010

The 2010 WV Small Farm Conference is scheduled for March 1 – 4 at the Lakeview Resort and Conference Center in Morgantown, WV. This year's event features seven learning tracks:

Fruit and Vegetable Production, Value-adding, Beginning Farmers, Agri-tourism, Energy, Farmers Market Management, Animal Production and Marketing

There are several special events scheduled during the week of the conference:

Winter Blues Farmers Market – Monday evening, March 1st

Better Process Control School – Monday and Tuesday, March 1&2

Community Food Security Workshop and Seminar

2010 Agritourism Media Awards

WV Specialty Crops Block Grant Poster Session

The conference tracks are designed to accommodate the diverse mix of experience, age, crop enterprise and interests of the region's small farmers. For more information and a registration form go to the following website:

<http://smallfarmcenter.ext.wvu.edu/events/conference>

Gardening 101 Program

The Berkeley-Jefferson Master Gardener Association will be conducting a free gardening seminar on Saturday, March 13, 2010 from 9:00 AM until 2:30 PM at the Berkeley County Youth Fairgrounds. Participant check-in begins at 8:30 AM. The seminar, called Gardening 101, will cover the following topics:

Setting up a Garden, Seed Choices, Starting Plants from Seeds, Container Gardening, Pests and Weeds, Composting, Rain Barrels. Participants are asked to bring a brown bag lunch. The Master Gardener Association will provide drinks and desserts. For more information or to register for Gardening 101, please contact the Berkeley County Extension Service office at (304) 264-1936 or go to <http://www.berkeleyextension.com>

Garden Tips

Prune grapes, Seed broccoli and cabbage indoors.

Until next time ...Happy Gardening, and Farming!

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