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OSU Extension - Auglaize County Weekly Horticulture Newsletter – 1-10-20

The Spider Plant

The spider plant name comes from the "spidery" look of the baby plants that grow rapidly. Another common name for the plant is airplane plant. The scientific name is *Chlorophytum comosum*. The spider plant is native to coastal areas of South Africa.

The spider plant is a monocot meaning it has parallel leaf venation and is in the lily family.

The spider plant is a clump-forming perennial. The leaves are long and narrow with a fairly prominent mid-rib. The leaves are somewhat folded or in a v-shaped pattern, especially at the base of the plant. Flower stems are stiff, wiry, and long. At the end of the flower stem plantlets begin to form. Flowers are white having three petals and three sepals. The flower is 0.25 to 0.75 inch in diameter. Spider plants have thick fleshy roots that store food reserves, making the plant perennial.

There are four common varieties or cultivars of the spider plant. The native plant has a solid green leaf color with a lighter green color in the center of the leaf. The 'Mandaianum' variety is a dwarf spider plant with 4-6 inch dark green leaves with a bright yellow stripe. The 'Vittatum' variety is the most common cultivated

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variety through the late 1990's. It has pale green leaves with a white central stripe. The 'Variegatum' variety has dark green leaves with white leaf margins. Leaves are longer and wider than the other varieties. 'Bonnie' has dark green leaves with a center white stripe and the leaves curl and bend. The flowering stems are yellow.

Spider plants are easy to grow! They can handle abusive care better than most plants. Spider plants grow best in bright indirect light. If plants are grown outside, direct sunlight can scorch the leaves. Plants can also grow in very low light environments although the white stripes may not develop well for those varieties having stripes. Spider plants grow best when the soil has time to dry out between watering's. They can go without water for a week or more. Spider plants do not grow well in saturated potting media which is about the only way to kill the plants. Plants can be grown in any well-drained potting media. Ideal temperatures for spider plants are 65 to 75°F during the day and 50 to 55° F at night. If keeping plants outside be aware that leaves can fade and become burnt. Spider plants do not need much fertilizer. Matter of fact over fertilizing may reduce the production of plantlets. Fertilizer may be applied monthly from March through September. Bring outside plants indoors before frost as the plants are very susceptible to frost.

Flower stems are usually produced in the fall as daylight is reduced, although it is possible to flower at other times of the year.

Plantlets are easy to get established. Cut the stem near the plantlet and place the base end in potting media. One source mentioned using a paper clip to hold the plant to the potting media. Bend the paper clip into an elongated U shape to hold the plantlet in place. Keep the soil moist, but not saturated, until roots are visible and plant is supported by the roots.

Spider plants make great plants for beginners because they tolerate extreme conditions very well. This is a foolproof houseplant.

What Does Your Winter Landscape Look Like?

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Red chokeberry

Yellow twig dogwood

As we are in the throes of winter, have you ever thought about how you can improve your winter landscape? There are many woody and a few herbaceous plants that can be included in the landscape to add color and texture.

Looking for plants having red berries or fruits looking like berries then consider the following: bearberry (*Arctostaphylos uva-ursi*), Red chokeberry (*Aronia arbutifolia* 'Brilliantissima'), Korean barberry (*Berberis koreana*), Purple Japanese barberry (*Berberis thunbergii* f. atropurpurea), Winterberry (*Ilex verticillata* 'Winter Red'), crabapple (*Malus x robusta* 'Red Sentinel' and *Malus* 'Sutyzam' "Sugar Tyme"), American Cranberrybush (*Viburnum trilobum* 'Redwing'), Cotoneaster (Cranberry [*Contoneaster apiculatus*], Bearberry [*Cotoneaster dammeri*], spreading contoneaster [*Cotoneaster divaricatus*], and hedge cotoneaster [*Cotoneaster lucidus*]), Coralberry shrub (*Symphoricarpos orbiculatus*), Holly (*Ilex* spp.), Mountain ash *(Sorbus aucuparia*), and serviceberries (Amelanchier spp.). The berries stay on these trees and shrubs till the early winter or throughout the winter, depending upon the species and the amount of birds eating the fruits.

Plants having purple-colored berries or fruits include purple beautyberry (*Callicarpa dichotoma*), Japanese beautyberry (*Callicarpa japonica*), and Oregon Grape holly (*Mahonia aquifolium*). Hardy orange (*Poncirus trifoliate*) has golf-ball sized, slightly furry, golden yellow fruits. Winterberry (*Ilex verticillata* 'Winter Gold') has orange to golden colored berries. Common snowberry (*Symphoricarpos albus*) has pure white, waxy berries.

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Trees and shrubs can have different colored bark. Seven-son flower (*Heptacodium miconiodes*) has a bronzed exfoliating bark, Japanese Stewartia (*Stewartia pseudocamellia*) has a reddish-brown exfoliating bark, yellow-twig dogwood (*Cornus stolonifera* 'Flaviramea' originally, now called *Cornus sericea* 'Flaviramea') has a yellow-colored bark, red-twig dogwood (*Cornus sericea*) and Tartarian dogwood (*Cornus alba* 'Sibirica') have red-colored bark, Tartarian dogwood (*Cornus alba* 'Kesselringii') has a purplish-black colored bark, bloodtwig dogwood (*Cornus sanguinea* 'Anny's Winter Orange') has a yellow-orange colored bark, bloodtwig dogwood (*Cornus sanquinea* 'Midwinter Fire') has a bark that starts out yellow and turns more red towards the tip of the branches, Golden willow (*Salix alba* var. vitellina 'Yelverton') has a bright reddish-orange or yellow-orange colored bark, sycamores (*Platanus occidentalis*) have a white and olive-green colored bark, birches (*Betula* spp.) have a white-colored bark, and American beach (*Fagus grandifolia*) has a light-grey colored bark.

Some plants have texture. The oak-leaf hydrangea (*Hydrangea quercifolia*) retains its flower heads during the winter. A small tree having contorted branches would be Harry Lander's walking stick (*Corylus avellana* 'Contorta'). Another option to adding texture would be to include ornamental grasses such as Japanese silver grass (*Miscanthus sinensis*), feather reed grass (*Calamagrostis* X *acutiflora* 'Karl Foerster"), Moor grass (*Molinia caerulea* subp arundinacea), and others.

If you are looking for an evergreen deciduous shrub, then boxwood will add some green color to the winter landscape.

If it is not too cold then Christmas rose or hellebore (Helleborus niger) can flower during the early winter. It has a white flower. A plant that has large purplish-colored buds during the entire winter is *Pieris japonica*. Two other species that may flower or at least change color during the winter is Heath (*Erica* spp.) and Heather (*Calluna vulgaris*). The tree witch hazel (*Hamamelis virginiana*) has yellow-orange flowers that should be one of the first flowering trees in late winter.

Another option to adding color to the winter landscape is to plant colored cabbages and kales.

As one can see there are many options to improving the winter landscape at you home.

Local Observations

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Good night! Happy New Year to you. I hope you have been able to patiently wait for this newsletter. Wow what a weekend weather forecast!

It has rained several days since the last precipitation report on December 17th Rainfall on December 28th, ranged from 0.18" at about 2 miles southeast of Fryburg to 0.4" at about 1 mile north of St. Marys. Rainfall on December 29th ranged from 0.45" near Bloody Bridge to 1.12" at about 1 mile northeast of Fryburg. Rainfall on December 30th ranged from 0" at about 1 mile north of St. Marys to 0.51" near Valley and Clay Roads. Rainfall on December 31st ranged from 0.01" at my house south of St. Marys, near Bloody Bridge, and at Wapakoneta – Fisher and Townline – Lima Roads to 0.31" near Valley and Clay Roads. Rainfall on January 2nd ranged from 0.24" at about 2 miles southeast of Fryburg to 0.35" at about 3 miles west of St. Mary and near Clay and Valley Roads. Rainfall on January 3rd ranged from a trace at about 1 mile north of St. Marys to 0.4" near Uniopolis. Rainfall on January 4th ranged from a trace at about 1 mile north of St. Marys and near Clay and Valley Roads to 0.01" at my house south of St. Marys, near Bloody Bridge, and at about 2 miles southeast of Fryburg. Total rainfall since the last newsletter ranged from 1.25" at Wapakoneta – Fisher and Townline – Lima Roads to 2.22" at about 1 mile northeast of Fryburg. Total average rainfall since the last newsletter is 1.56".

The average high temperature now is 33 degrees F. Temperatures were above normal for most days since the last newsletter.

There are still bees in the hive. Still too many at the top to check on food supply.

VegNet

No news this week

BYGL

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Woodland, Water and Wildlife Conference - Registration Open for March 4 Conference

Authors
Amy Stone
Published on
January 6, 2020

This year's Ohio Woodland, Water & Wildlife (WWW) Conference will be held Wednesday, March 4, 2020. This day-long conference was developed for natural resource professionals and land managers and is held at the Mid-Ohio Conference Center in Mansfield, Ohio.

The conference includes three concurrent tracks - woodland, water and wildlife. Participants can choose topics in one or all of the tracks. Sessions include:

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- Prescribed Fire: To Burn, or not to Burn?; *Roger Williams, OSU SENR*
- OSU's Plant and Pest Diagnostic Clinic: What Issues Did we see in 2019; *Joy Pierzynski, OSU, Program Director*
- The Alphabet Soup of Invasives: Updates on ALB, HWA, GM, SLF, TCD; *Amy Stone and Kathy Smith OSU Extension*
- Woodland Water Wildlife What's Up with Waterbirds?; *Bob Gates and Nicole Hengst, OSU SENR*
- Update on Ohio Bats; *Marne Titchenell, OSU Extension, SENR*
- Wildlife on the Edge: Managing for the Good Effects and Mitigating the Bad; *Gabe Karns*, *OSU SENR*
- The Lake Erie Ecosystem: Current Challenges and Solutions; *Sarah Orlando, Ohio Sea Grant College Program*
- Clear Creek: Taking the Wade and See Aproach to a Hocking-area Coldwater Stream; *Andrew Boose, Columbus and Franklin County MetroParks*
- Turtles of Northern Ohio Wetlands; *Matt Cross, Toledo Zoo*
- Aquatic Plant Management: Backyards, Retention Ponds and Natural Areas; *Mark Warman, Cleveland Metroparks*
- Shorebird Migration Timing, Habitat Use and Management Implications in the Lake Erie March Region; *Mark Shieldcastle, Black Swamp Bird Observatory*
- Landscape change, wildlife adaptation and human influence; *Jon Cepek, Cleveland Metroparks*
- Ohio's White-tailed Deer: An Update on Herd Health and Condition; *Mike Tonkovich, ODNR, Div. of Wildlife*
- The World of Fungi: Spring Mushrooms; *Erika Lyon, OSU Extension, Jefferson/Harrison County*

To learn more and begin planning your day, check out the conference information on the OSU Woodland Stewards Website: https://woodlandstewards.osu.edu/sites/woodlands/files/WWW%202020.pdf

Pre-registration is required to attend the conference. There will be no on-site registration. Continuing education credits for SAF and ISA have been applied for, as well as pesticide recertification credits from ODA. Early bird registration is 2/18/2020 and is $65. Registration after 2/18/2020 is $85. Online registration can be found online at woodlandstewards.osu.edu

More Information
OSU Woodland Stewards Program , WWW Conference
https://woodlandstewards.osu.edu/events/ohio-woodland-water-and-wildlife-confer…

Other Articles

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Plants for a Garden That Welcomes Wildlife

January 8, 2020 | Meghan Shinn
Source: https://www.hortmag.com/weekly-tips/garden-design/plants-for-a-garden-that-welcomes-wildlife

A sphinx moth sips from a beebalm flower (Monarda didyma).

Text by Brenda Lynn for the March/April 2019 issue of *Horticulture*.

First signs of spring are legendary, particularly in places blanketed in snow for much of winter. Where I grew up, near Washington, DC, we eagerly awaited the American robins' arrival. They usually appeared in March, whistling a hearty tune: "cheer up, cheer up, cheerily, cheer up!" The mere sight of Mama Robin bearing twigs for a secret nest was enough to carry us through the last cold, wet weeks of winter and into spring. Maybe it was my family's aversion to the cold, or our crazed school-year schedule that prevented us from realizing that robins don't migrate. In fact, most robins, as well as many other native birds, butterflies and bees retreat to nearby wooded areas in colder months. Like their human neighbors, they seek protection in the places they know best and they are most adapted to: their own back yards.

Though they may be hidden in plain sight, harbingers of spring serve as a reminder that landscapes with year-round interest function on multiple levels. Cultivated areas extend wildlife habitat, inviting a host of creatures that both benefit from and support plant diversity. Incorporating native plants that support indigenous wildlife reduces the need for fertilizer, soil amendments and water. Native plants relish the particular environmental conditions in which they've evolved, and they provide food and shelter for wildlife that evolved synchronously.

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Woody plants

Cool spring nights and warmer days are the perfect combination for planting, just in time for wildlife's return. With even a small amount of space, it's easy to incorporate a few wildlife-friendly plants. In early spring, before trees leaf out, take stock of the garden's bones: the backdrop visible when perennials and deciduous woody plants are dormant. Note areas where more privacy or shade is desirable, and look for understory spaces that could use a little more interest. A layered approach adds texture, color and accommodations for all sorts of wildlife.

Early flowering trees and those with persistent nuts and berries are vital for migrating species, as well as those reemerging in early spring. Maple trees' miniscule red flowers are barely perceptible in March, but they replenish energy for honeybees and other early nectar-seekers. The showy spring flowers of tulip poplar (*Liriodendron tulipifera*) sustain bees and butterflies, while red squirrels, finches and rabbits enjoy the seeds that follow. Cardinals and grosbeaks seek pine and spruce seeds, while woodpeckers and nuthatches scramble along hickory and oak branches, pecking for insect treats. These trees are among the tallest species, so before planting, consider their mature size. Plant six-foot saplings in early spring, and water consistently during periods of drought. Once established, they need little care, other than pruning.

In smaller spaces, a grove of early-blooming trees or shrubs will provide shelter for ground dwellers, as well as low branches for rapid transit. Clustering shrubs in groups of three to five, particularly when male and female plants are necessary for pollination, creates a cohesive pattern. Many small native trees tolerate some shade and these are perfectly suited to the understory.

Serviceberry's (*Amelanchier arborea*) delicate white flowers appear before its foliage in March then morph into delicious blue berries. Also known as Juneberry, it grows throughout eastern North America, reaching 15 to 20 feet. Spicebush (*Lindera benzoin*) is a smaller shrub, reaching 6 to 12 feet. It thrives from Ontario to Florida and west to Oklahoma. The fragrant leaves host the spicebush swallowtail butterfly, and 24 species of birds dine on its drupes. Some of the most adaptable and underused shrubs are native *Viburnum*. Their fragrant spring blossoms give way to high-fat berries and brilliant fall foliage. Turkeys, grouse and songbirds flock to the berries, while numerous butterfly and moth caterpillars dine on viburnum leaves. Though Korean varieties are popular among gardeners, US-native viburnums, such as mapleleaf (*V. acerifolium*), black haw (*V. prunifolium*) and arrowwood (*V. dentatum*), best support local wildlife.

For year-round interest and adaptability, the sumacs are hard to beat. Species of these colony-forming shrubs are native in all 48 contiguous states and they support over 300 songbirds. Staghorn sumac (*Rhus typhina*), whose hairy branches resemble deer antlers, produces yellow-green flowers on female plants in spring. Pyramidal spikes of bright red berries follow, glowing throughout winter. In need of a little privacy? Douglas

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hawthorn (*Crataegus douglasii*) can provide it, as well as clusters of rose-like blooms that attract butterflies, birds and even ladybugs in the Pacific Northwest. Unique red branches with inch-long spikes ensure protection from less desirable visitors.

Gardeners look to evergreens for winter interest and privacy, but we sometimes overlook their berries. The birds do not! Holly and juniper are among the most valuable evergreens for sheltering and feeding wildlife. Winterberry (*Ilex verticillata*) is a smaller specimen with bright red fruit in winter and early spring. American holly (*Ilex opaca*) is a mid-size tree offering both berries and shelter. Junipers are found throughout the continental US. Species range from Rocky Mountain juniper (*Juniperus scopulorum*) to eastern red cedar (*J. virginiana*), whose scented wood and attractive peeling bark creates a beautiful year-round backdrop. The insignificant bluish berries feed birds, foxes, and other wildlife.

Herbaceous plants and more
Save some sunny space for wildflowers and grasses that bloom consecutively, such as a progression of foxglove, sage, native honeysuckle, coneflowers, black-eyed Susans, bee balm, milkweed, goldenrod and switchgrass. Start seeds indoors in early spring, or sow them outside when nighttime temperatures remain above 50˚F. Rake the soil lightly and scatter seeds across the surface, then top them with a thin layer of humus-rich mulch. Soon enough, a rainbow of pollinators will alight on the blooms and birds will visit for seeds when the flowers fade.
Spring is the perfect time to consider installing a pond or birdbath. Even a small water feature sustains birds, frogs and pollinators during drought. In winter and early spring, add a heating element. A heated birdbath is what clued me in to the robin's winter roosting ground. When we'd been hit with several inches of snow, robins came from every direction to drink from our simple birdbath, the only unfrozen water in sight.

Finally, spot an out-of-sight corner and create a compost pile. Grubs and earthworms will turn dried leaves and kitchen scraps into "black gold," though some will become snacks for towhees, thrashers and robins. Add a few rocks and bark, and native toads will seek out tasty treats amongst the decomposers. In cooler months, the compost pile shelters ground dwellers.

A garden filled with locally native plants, structural diversity and a few forgotten piles of leaves is a welcome habitat for wildlife seeking shelter through the seasons. A diverse habitat can only enhance our garden's appeal, both for us and for the creatures we invite.

contrary to popular belief

Breeding increased the diversity of cultivated tomatoes

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Source: https://www.hortidaily.com/article/9177660/breeding-increased-the-diversity-of-cultivated-tomatoes/

It is generally believed that domestication and breeding of plants has led to genetic erosion, including loss of nutritional value and resistances to diseases, especially in tomato. A group of researchers studied the diversity dynamics of greenhouse tomato varieties in NW Europe, especially The Netherlands, over the last seven decades. According to the used SNP array, the genetic diversity was indeed very low during the 1960s, but is now eight times higher when compared to that dip.

The pressure since the 1970s to apply less pesticides led to the introgression of many disease resistances from wild relatives, representing the first boost of genetic diversity. In Europe a second boost ensued, largely driven by German popular media who named poor tasting tomatoes Wasserbomben (water bombs). The subsequent collapse of Dutch tomato exports to Germany fueled breeding for fruit flavor, further increasing diversity since the 1990s.

"The increased diversity in composition of aroma volatiles observed starting from 1990s may reflect the efforts of breeders to improve fruit quality. Specific groups of aroma compounds showed different quantitative trend over the decades studied", a group of researchers now concludes. "Our study provides compelling evidence that breeding has increased the diversity of tomato varieties considerably since the 1970s."

Beneficial traits

A recent paper in Nature Biotechnology on de novo domestication of tomato voiced the general belief that “breeding of crops over millennia for yield and productivity has led to reduced genetic diversity. As a result, beneficial traits of wild species, such as disease resistance and stress tolerance, have been lost (…). Despite the increases in yield conferred by domestication, the breeding focus on yield has been accompanied by a loss of genetic diversity and reduced nutritional value and taste”.

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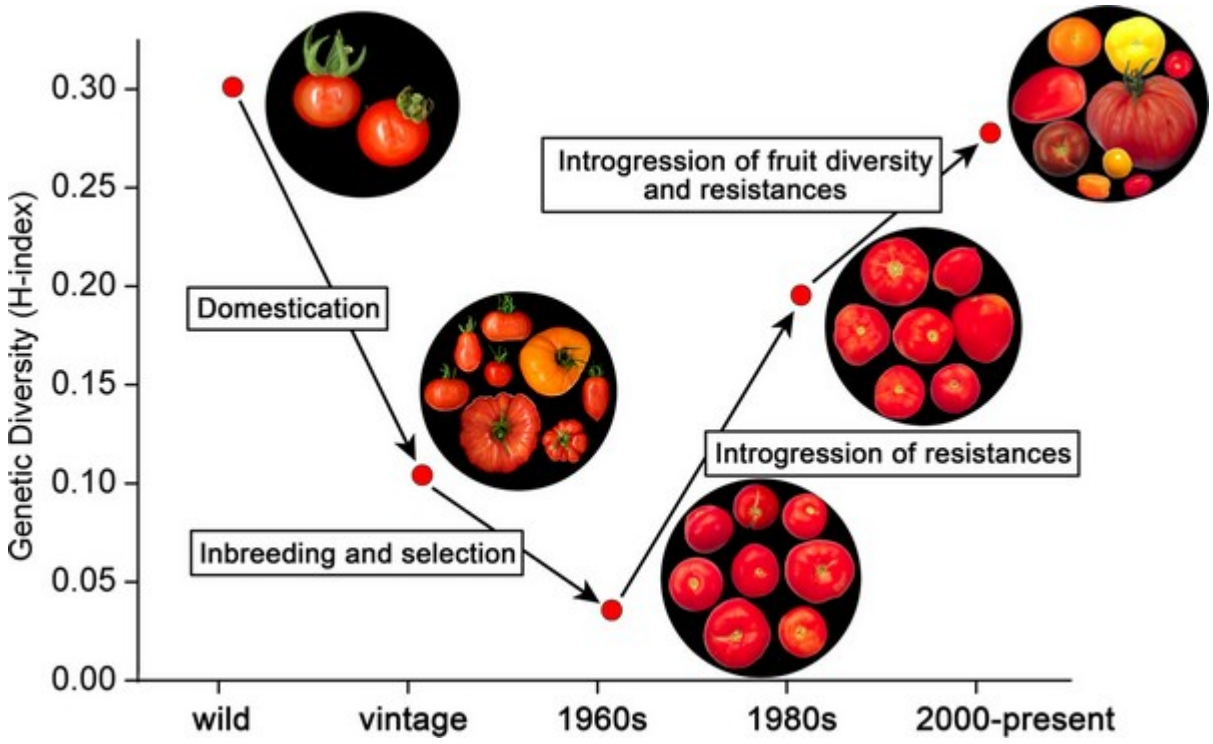

Reduction of diversity among crop varieties poses risks for cultivation, especially when most varieties carry the same genetic basis for resistance to diseases and pests. If a disease resistance is overcome in one variety, other varieties become susceptible too. This leads to agricultural vulnerability which can affect the entire chain, especially if there are no alternatives for disease control, such as appropriate, authorized pesticides. History has provided several examples, such as the Panama disease (Fusarium oxysporum f. sp. cubense) epidemic in banana, or the southern corn leaf blight (Helminthosporium maydis) outbreak in maize. Because the number of authorized pesticides has decreased and continues to decrease, crop protection has to rely more and more on resistances that should have not a narrow genetic basis.

The loss of genetic variation in crops due to the modernization of agriculture has been denoted as genetic erosion. During domestication preferred genotypes were selected, leading to loss of alleles and a decrease in genetic diversity of landraces compared to wild accessions. Two principal occurrences affecting crop diversity have been identified: 1) the replacement of landraces by commercial varieties; and 2) more recent additional changes in the diversity of commercial varieties caused by plant breeding. Breeding can reduce genetic diversity by continued selection in the breeding germplasm, or may broaden genetic diversity through the introgression of alleles from wild relatives. The question remains

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whether the increase in diversity because of introgression has compensated the reduction of genetic diversity due to inbreeding and selection.

Researchers have studied this for tomato, as particularly in this crop there have been indications of serious genetic erosion. Furthermore, Tieman and Klee mentioned that "modern commercial varieties contain significantly lower amounts of many (…) important flavor chemicals than older varieties" as a result of intensive selection for production traits, such as yield and disease resistance, at the expense of flavor. The researchers studied the evolution of diversity of commercial tomato varieties in NW Europe since the 1950s. To do this, they looked at both genetic variation at the DNA level, and phenotypic variation, including disease resistances, fruit size, and flavor components.

Research team traces evolution of the domesticated tomato

Source: https://www.hortidaily.com/article/9178332/research-team-traces-evolution-of-the-domesticated-tomato/

In a new paper, a team of evolutionary biologists and geneticists led by senior author associate professor Ana Caicedo, with first author Hamid Razifard at the University of Massachusetts Amherst, and others, report that they have identified missing links in the tomato's evolution from a wild blueberry-sized fruit in South America to the larger modern tomato of today.

The missing link that deserves more attention than it has gotten to date, they say, is one of a number of intermediate variants between the fully wild and fully domesticated tomato. Results of their genetic studies indicate that the modern cultivated tomato is most closely related to a weed-like tomato group still found in Mexico rather than to semi-domesticated intermediate types found in South America.

Razifard, a postdoctoral researcher in the Caicedo lab, says, "What's new is that we propose that about 7,000 years ago, these weedy tomatoes may have been re-domesticated into the cultivated tomato." The common cultivated tomato is the world's highest value and most widely grown vegetable crop and an important model for studying fruit development, Caicedo and colleagues point out.

In this work, part of a larger research effort supported by the National Science Foundation and led by Esther van der Knaap at the University of Georgia, the researchers say that for many years an oversimplified view of tomato domestication was thought to involve two major transitions, the first from small, wild Solanum pimpinellifolium L. (SP) to a semi-domesticated intermediate, S. lycoperiscum L.

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var. cerasiforme (SLC). The second was a transition from an intermediate group (SLC) to fully domesticated cultivated tomato (S. lycopersicum L. var. lycopersicum (SLL)).

Their genetic studies address the role of what they call a “historically contentious” and complex intermediate stage of tomato domestication, an essential chapter that should not be overlooked in the tomato’s long journey from wildness to domestication. Details appear in an Advanced Access edition of Molecular Biology and Evolution.

Razifard and colleagues, who created a public genomic variants dataset for this study, used whole-genome sequencing of wild, intermediate and domesticated (SP, SLC, and SLL) varieties, plus population genomic analyses to reconstruct tomato domestication, focusing on evolutionary changes especially in the intermediate stages (SLC). They generated new whole-genome sequences for 166 samples, with particular attention to intermediate variants from its native range and cultivated fruit from Mexico, previously under-represented in studies.

Razifard says, “We found that SLC may have originated in Ecuador around 80,000 years ago as a wild species rather than a domesticate. It was cultivated in Peru and Ecuador by native people later to create medium-size tomato fruits. We also found that two subgroups from the intermediate group may have spread northward to Central America and Mexico possibly as a weedy companion to other crops.”

“Remarkably, these northward extensions of SLC seem to have lost some of the domestication-related phenotypes present in South America. They still grow in milpas of Mexico, where people use them as food although not cultivating them intentionally,” he adds. Milpas are fields where farmers plant many different crops in the same area.

He and Caicedo note that an origin of the domestic tomato from weed-like ancestors was proposed in 1948 based on the many native names that exist for the weed-like tomato, in contrast to fewer names for the common cultivated tomato. This hypothesis was challenged by others who argued against Mexico as a center of tomato domestication due to the absence of completely wild tomatoes there.

Razifard says, “It’s still a mystery how tomatoes have moved northward. All we have is genetic evidence and no archaeological evidence because tomato seeds don’t preserve well in the archeological records.”

The researchers point out that exploring intermediate stages of tomato domestication has “direct implications for crop improvement.” For example, they observed some signals of selection in certain intermediate populations for alleles involved in disease resistance and drought tolerance, important, Razifard says, “Such evidence is useful for finding candidate alleles that can be used for creating

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disease-resistant and/or drought-tolerant tomatoes." Other intermediate populations had higher beta-carotene or sugar content, attractive traits to consumers.

The evolutionary biologist says, "This is the kind of paper that Darwin would have enjoyed reading. He drew many of his insights on evolution from studying plants, especially crops. He corresponded extensively with botanists before he finalized his theory of evolution through natural selection."

A postdoctoral researcher who did much of the population genomic analyses for this project, Razifard adds that he wants to support the movement in biology against "plant blindness," the tendency to ignore the importance of plants in studying evolution as well as other subfields of biology. Also, he is from a minority Azerbaijani-speaking area of Iran and says, "This paper is special to me because it's my first one with a female-majority author list. I feel lucky to be part of a generation that is changing science, and I hope this paper serves as a model for gender equity in STEM fields."

Prepared by Jeff Stachler
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