

PRUNUS - STUDENT OUTLINE

HEJ Pg 163

I. Introduction - The genus *Prunus* is comprised of over 400 species. This genus is found throughout the world in northern temperate areas and native species are common throughout North America and Canada.

II. Terminology

Anther – Pollen bearing part of the stamen.

Drupe – Fruit with outer fleshy area that surrounds a shell with a seed inside.

Internode – the stem between two nodes.

Node – The location on the stem where true leaves are attached, usually the location of flower or shoot buds.

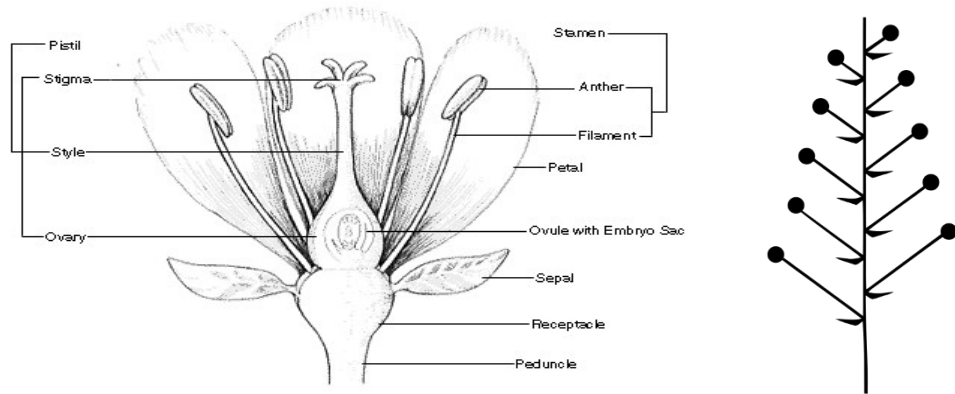
Nuts – a true nut is a hard-shelled pod that contains both the fruit and seed of the plant where the fruit does not open to release the seed to the world. Examples – chestnuts, hazelnuts and acorns.

Pistil – the female reproductive part of a flower; collectively the stigma, style, and ovary.

Sepal – leaf or petal-like structure that usually encloses/protects a flower bud.

Stamen – the male parts of the flower including anther and filament. (Anther should ALWAYS be present and not dried/shriveled).

III. Leaves, Flowers, Fruit



Leaves – they are simple, not divided into leaflets; alternate – leaves and buds are spaced in alternating fashion along the stem and not across from one another; usually lanceolate – almost spear shaped and un-lobed. They are often (but not always) serrated – margin of leaf may look a bit like one side of a zipper.

Extrafloral nectaries – Nectar is produced in glands called nectaries. These glands may be found either within the flower or by extrafloral nectaries (ENs). The ENs are nectar-secreting glands that develop outside of flowers and are not involved in pollination.

Flowers – have 5 petals and 5 sepals with numerous stamens. Flowers may be single but often are double. They may occur as individual blooms or in a couple of types of inflorescence – a cluster of flowers. Some flowers are arranged in racemes - simple inflorescence in which the flowers are borne on short stalks called Pedicels, lying along a common axis – and others in a circular cluster. They are usually white or pink but some species and cultivars have red coloration.

Fruit – various shapes & colors depending on species.

IV. Species and Cultivars – Much of the information offered here comes from various Dirr resource books. These following species are presented for judges to see the enormous variety one may experience when judging shows and to gain some information as to sizes, shapes, etc. IF you are planning on purchasing actual fruit or nut trees from which to harvest, I strongly encourage you to first visit your Cooperative Extension office to see which are recommended for your particular part of the world.

- A. **ALMOND:** Native to Middle East, North Africa and parts of India. The seed are drupes, not true nuts. 1. Dwarf Flowering Almond – *Prunus glandulosa*; Dwarf Russian Almond – *Prunus tenella*; Flowering Almond (sometimes also referred to as Double Flowering Plum) *Prunus triloba* ‘Multiplex’
- B. **APRICOT:** Leaves are broadly ovate, unlike the more usual spear-shaped or lanceolate of the genus. The leaves are around 4” long and 2 ½” wide, depending upon species/cultivar, the flowers are pale pink or white and the fruit is rounded, yellow sometimes flushed red. Bark is reddish brown and smooth and almost glossy. 1. Manchurian Apricot – *Prunus manchurica* ; ‘Manchu’, ‘Moongold’ and ‘Sungold’ are hardy specimens. 2. Japanese Apricot – *Prunus mume*; ‘Alba’, ‘Bonita’ ‘Dawn’ Kanko Bai’; ‘Peggy Clarke.
- C. **CHERRY:** Where to start? The most numerous of the species, there is a cherry tree for virtually any use and any zone. 1. Mazzard or Sweet Cherry – *Prunus avium*; 2. Western Sand Cherry – *Prunus besseyi* ‘Pawnee Buttes’ is a groundcover specimen; 3. Taiwan Cherry – *Prunus campanulate*; ‘Okame’.; 4. Fugi Cherry – *Prunus* ‘Fair Elaine’ ‘Kojo-no-mai’ (may be called Little Twist in the U.S.); ‘Snow Cloud’; 5. Sargent Cherry – *Prunus sargentii*; ‘Accolade’; ‘Pink Flare’; 6. Black Cherry - *Prunus serotina*; ‘Spring Sparkle’ 7. Japanese Flowering Cherry; Oriental Cherry – *Prunus serrulata*; ‘Angel’s Blush’ (also known as ‘Taizo’); 8. Common Chokecherry – (not to be confused with black or red chokecherries, both genus *Aronia*) *Prunus virginiana*.
- D. **PEACH:** *Prunus persica* ; ‘Prince Charming’ ‘Corinthian Mauve’, ‘Corinthian Rose’ and ‘Corinthian White’.
- E. **PLUM:** 1. American Red Plum *Prunus Americana*; 2. Cherry Plum *Prunus cerasifera*; 3. Canada Plum *Prunus nigra*. F. **BLACKTHORN:** *Prunus spinose*. G. **HYBRIDS:** In addition to numerous cultivars and varieties of the genus, there are several specie crosses. Apriums/Pluots – apricot & plum crosses; Nectaplums which is a cross between nectarines and plums; and Nectarcots, a cross between nectarines and apricots. In cases such as these, the name would be written as *Prunus x cestena* which, in this case, is a cross between a sandcherry and a purple leaf plum.
- V. **Issues Affecting this Genus** –Viruses, fungi, molds and mildews seem to thrive on them; some of the more common diseases: Galls, fire blight, leaf curl, powdery mildew, viruses such as mosaic and ringspot & rots of various kinds. Insects include caterpillars (tent, cankerworms, etc), borers, scale, aphids, Japanese beetles and these are just some of the worst. Then, add fuzzy, cute critters such as raccoons, deer, squirrels, chipmunks and even possum. Finally, add to this list wasps that seem to swarm just at picking time because that’s when they become sweet and juicy.

VI.Opportunities to Show Prunus: A. Arboreal – a table covered with specimens of flowering *Prunus* is beautiful and could steal the show. These would be exhibited in transparent containers with water to keep them well hydrated. Spring would be the time for flowering. Summer the time for fruit laden stems. B. Collections/Displays C. Dwarf/Miniature – there are several cultivars of *Prunus* considered either dwarf or miniature which would be wonderful in a class for the Elfin Award. D.Fruits/Nuts/Vegetables – A show in late summer or early fall would be perfect to exhibit some of the fruit and/or nuts. Either could be shown in a Section of F/N/V, or a Collection/Display Section. E. Fall Interest - Botanical Arts Horticulture – If you happen to have a specimen with good fall color, consider entering in the Botanical Arts Horticulture Section for Fall Color. Some examples (but certainly not all) of Fall Color: *Prunus americana* – American red plum has very red leaves in fall; *P. avicum* – Mazzard cherry – yellow to bronze red; *P. padrus* – European bird cherry – yellow/bronze; *P. sargentii* – Sargent cherry – bronze-red and *P. serrentata* ‘Kanzan’ – copper leaves in fall. For Winter Interest – *Prunus incisa* ‘Kojo-o-mai’ – twisted branches; *P. serrula* – paperbark cherry has shiny reddish-brown exfoliating paper-like bark. F. **Photography** – If you had a beautiful display of color in the spring and no show, take photos and exhibit them at the next show under Botanical Arts, Photography.

VII.Getting Ready to Show:

VIII.Schedule:

Schedule must state maximum length (30 inches from apical tip to cut end). It is important to select a stem that has a terminal bud on the end. And, it must have at least 3 nodes. Let’s go over a couple of mock schedules for *Prunus*.

Schedule 1. Theme is “Spring”; Horticulture Division II – “Spring is in the Air”

Section A. The Orchard in Bloom - Cut flowering specimen to be staged in a transparent container (with water) supplied by the exhibitor. Specimen not to exceed 30" from terminal bud to cut end. Minimum of 3 nodes; wooden wedges supplied by committee. Binomial or currently accepted scientific designation. Eligible for the Arboreal Award.

Class 1 – *Malus pumila* Apple

Class 2 – *Prunus avum* Sweet cherries

Class 3 - *Prunus cerasus* Sour cherries

Class 4 – *Prunus* any Apricots

Class 5 – Any Other Worthy Specimen

Schedule 2. Theme is "Summer on the Farm" Horticulture Division II – "The Fruits of Labor"; Section A. Juicy Harvest – *Prunus* produce – 5 fruit specimens of same variety/cultivar to be shown on rattan plate 9" in diameter, supplied by committee. Binomial or currently accepted scientific designation. Eligible for the Award of Merit.

Class 1 – *Prunus americana* American- Red Plum

Class 2 - *Prunus mandshurica*- Manchurian Apricot

Class 3 - *Prunus mume* - Japanese Apricot

Class 4 – *Prunus nigra*- Canada Plum

Class 5 – *Prunus persica*- Peach

Class 6 – Any Other Worthy *Prunus* Species

IX. **Possible NGC Horticulture Section Top Exhibitor Awards for *Prunus*:** Arboreal Award – either cut flowering or cut with fruit or container-grown (provided they are dwarf and small enough to be taken to the show). Award of Merit – fruits or nuts. Collector's Showcase Award – any of the types. Elfin Award– any of the dwarf or miniature varieties. Also remember that in Botanical Arts Horticulture you might have Photography or Horticulture Fall Interest available for *Prunus*.

X. **POINT SCORING – FLOWERING OR FOLIAGE ARBOREAL** (Handbook 100 & HEJ pg 162 for considerations)

A. **Conformance** (5 pts.) – *adherence to class requirements*. This is all or nothing and simple. Ask yourself 2 questions: Does it meet the Schedule requirements? If for example, the class says pink blooms and you are looking at a specimen with white blooms in the class, clearly it does not meet the conformance requirement
Favorable Comments: meets color requirements; arboreal specimen has minimum number of nodes; all schedule requirements met

Unfavorable Comments: for this one, don't simply say doesn't meet Schedule requirements – tell me WHY it doesn't meet the requirements – i.e. class requires variegated leaves and this specimen has none; does not have minimum number of nodes therefore does not meet Arboreal Award requirements.

B. **Plant Identification** (5 pts) – *Identified by the binomial name or currently accepted scientific designation*. Should have binomial or current accepted scientific designation. It should also be legible. It is important to know which species the exhibit falls into because it gives you so much information. If you see just *Prunus* you have no idea if it is a peach, a plum or a cherry, what color the fruit and/or flower is, etc. *Prunus* should always have the genus & specific epithet and cultivar/variety for many of them is an asset to those looking perhaps to purchase.
Favorable Comments: full binomial and cultivar; completely and correctly named; genus and specific epithet; legible; genus, correct format

Unfavorable Comments: only common name; just genus; no cultivar/variety; not legible; not written according to proper formatting

C. **Peak of Perfection** – This is all about the *show worthiness of the specimen*. As judges you must use common sense in the case of arboreal. IF it is a foliage specimen then the foliage and stems would have 12 – 14 points and overall form the remainder. IF flowers/fruit are present then points would be almost evenly divided between flowers/fruit and leaves with stem and overall form taking care of the rest. Also, 2 comments are needed for EACH of the 4 qualities under Peak of Perfection – form, color, size/maturity and condition/blemishes.

1. **FORM** 20 pts – *The 3-D shape of the specimen as well as individual parts.* If show is being held in Spring, expect new, not fully formed leaves and many buds. Open flowers however should dominate. If in summer, almost all leaves should be mature and virtually no flowers would be present. **Overall specimen** bushy or evenly spaced blossoms & leaves; bilateral symmetry is important for the entire specimen. Spacing of leaves, flowers/fruit and stems should be even up and down the stem with no gaps at the nodes. Graceful, full, balanced, symmetrical OR unbalanced, irregular. **Flowers:** should have 5 petals and many stamen. If missing a petal or if stamen is broken or missing, points should be deducted. Petals should be equally spaced with no gaps from overlaid petals. It is permissible to have several buds on the specimen but there should be more open blooms than buds and the blooms should be fairly consistent in size. **Stem:** Spacing along nodes should be fairly even with no gaps. Straight (unless cultivar is a drooping variety). It should be no longer than 30" but may be less if the cultivar shows to best pose with a shorter stem. A central leader is essential and for most fruit trees (check your species before determining requirements) that means a single stem with numerous branching side stems which should be balanced – i.e. either two at same node or one alternating side branch on each node. Often when you see a V branched stem, it means the actual apical tip has been cut down to the next node. **Leaf:** appropriate shape for the species or cultivar, alternate pattern should be obvious. Is it oval, round, elliptical, lanceolate, etc. **Fruit:** evenly distributed or situated on ends of side stems, uniform shape - mention shape – oval, round, etc. **Favorable Comments:** *Overall Specimen* - bilaterally symmetrical; gracefully balanced; alternate pattern in leaves. *Flowers* – beautifully spaced petals; numerous stamen standing at attention. *Stem* – straight, appropriate length____, evenly spaced internodes. *Leaves* - evenly spaced throughout the specimen, _____ shape, well clothed; *Fruit* - has uniform ____ shape, evenly spaced throughout exhibit or spaced at ends of stems as appropriate.

Unfavorable Comments: *Overall Specimen* –leans to one side, gap in side branches, not symmetrical; *Flowers* – missing petals, petals laying on top of one another; no stamen present. *Stem* – crooked, one-sided, internodes not evenly spaced; *Leaves* – sparse, no alternate spacing, missing leaves affect balance *Fruit* – Drupes clumped on one side; fruit not consistent size/shape.

2. **COLOR** 20 pts - *Visual perception of the hues, shades, tints and tones of all parts of the specimen.* *Flowers* are generally either white, cream, blush, pink or occasionally may be reddish in color. Generally, the petals are the same color over each flower, but flowers may be slightly differing shades of same color on the plant. If there is any browning edges or holes or disease on petals, then deduct points. *Leaves* for the most part are a medium or true green, and in a few cases, a bluish or yellowish-green. Also comment if the leaves are variegated i.e. deep green with cream variegation. If the pigment on the leaves isn't uniform, then take points off and say something like irregular color, dull, streaked, discolored, murky.

Drupes may be several different colors depending on the cultivar. Always mention the actual color of the fruit i.e. deep, rich red; blackish purple; yellow-orange; etc. Use words like vivid, clear, bright, fresh, clear. *Stem* - mention stem color. Should have no scars/marks or insect damage, if it exhibits damage to the extent it detracts from the color then describe and deduct point/s.

Favorable Comments: *Flowers* – soft blush pink; rich burgundy red; dark stamen stand out against the creamy petals. *Leaves* - rich green leaves; yellowish-green leaves; *fruit*- soft peachy yellow; clear red. *Stem* – greenishgray; grayish-brown; dark brown.

Unfavorable Comments: *Flowers* – browning edges on many flowers impacts color of specimen; very uneven flower color throughout specimen; color not crisp and clean as should be on this cultivar. *Leaves* - disease spots throughout; irregular variegation; chlorotic. *Drupes* -many pale green immature fruit; virus circles impact color; brown spots on fruit. *Stem* – skinned bark impacts color consistency; heavily scarred; obvious black knot impairs stem color.

3. **MATURITY/SIZE** 20 pts – *Ideal stage of development.* This quality will differ greatly depending on whether the show is in the spring or later in the summer. *Maturity* – Spring - Flowers should be upright and fresh. Size appropriate for cultivar. If the specimen has lots of buds and few fully opened flowers, it may not be the right stage of maturity for the season. If many of the flowers indicate wilting, browning or missing petals and droopy stamen, the plant is likely past prime for showing. Summer/Fall - Fruit should show strong color indicating

maturity and be lush & full – no shriveled drupes which would likely mean past prime (or perhaps just not well hydrated). Too many small fruit indicate immaturity. Spring - Leaves should be fresh looking. It is ok to have a few new leaves which indicate growth. Check for at least 3 nodes and apical tip. *Size* – Spring - Most leaves should be appropriate width/length for species but there may well be many leaves that have not quite reached mature length/width. It is good to offer actual length of leaves. *Flowers* - Individual blooms usually occur in sizes from ¼” wide up to 1”. Some racemes, such as in *Prunus maackii* usually grow to a size of 2-3” and the *P. padus* ‘Watereri’ racemes reach 8” at maturity. Circular clusters usually reach from 2 – 5”, depending on the species. Fall – leaves should all be mature size and shape and overall specimen should be well clothed. Students should describe 3 sizes: length of branch (especially if too long or short), leaves and flowers or fruit.

Favorable Comments: Maturity: four nodes; apical tip intact; Spring – heavy count of leaves still maturing, flowers fully formed and numerous. Fall - fully clothed; full complement of fruit and mature leaves. *Size:* Spring – flowers have a diameter of _____”; racemes fairly uniform at 5 - 6”; leaves uniform 1 ½” in length but some not quite mature; 27” stem; Fall - fruit appears full and lush and appropriate size for cultivar; leaves measure _____” in length; fruit measures _____ in diameter.

Unfavorable Comments: Maturity: only 2 nodes indicate immaturity (if only 2 nodes, the Classification committee missed it and this specimen should not conform); apical tip has been trimmed off; Spring – few flowers and size only _____” in diameter; flower cluster only 3”, small for species; sparse leaf count; Fall - leaves starting to brown and curl indication past prime. *Size:* most leaves less than _____” in length; small size for mature drupes; fruit only _____” in diameter.

4. CONDITIONS/BLEMISHES 15 pts – *the physical appearance of the specimen at time of judging.* *Condition* - healthy, no evidence of disease or mechanical damage (rips, tears, holes, etc), undamaged. Fresh and turgid. *Blemishes* - insect damage such as chews, black spots from sucking insects, etc., split stem, dry edges, scars.

Favorable Comments: *Conditions* - disease free; specimen turgid; no rips or tears, very healthy. *Blemishes* – clean of insect damage, no scars.

Unfavorable Comments: *Condition* - evidence of diseased spots on leaves; black spots on berries; limp. *Blemishes* - chew holes, dry margins on numerous leaves; scar tissue on leaves; some fruit half eaten.

D. Grooming/Staging 15 pts – *Actions taken by the exhibitor to improve the appearance of the specimen.* This is the area over which the exhibitor has the most control and should be judged accordingly. I generally tend to look at the plant material under grooming and the container & pose under staging.

1. Grooming 10 pts – plant/s should be clean, no debris, foliage neatly removed, disbudded appropriately if applicable, pollen removed. Or, soiled, dirty, spray residue, dusty, scars, dropped pollen, insects and insect debris present.

Favorable Comments: clean and neat; no dirt or debris present; no aging flowers/leaves present

Unfavorable Comments: spray residue present; dusty; insect webbing present; aging flowers/leaves present.

2. Staging 5 pts – *Presentation of the specimen.* Staging points always includes container unless supplied by show committee. Container should be clean and appropriate for plant. Proportion of plant to container should be balanced; color and texture of container to plant, centered in container (has to do often with wedging), pleasing pose. Or, wedging may be too obvious, plant too small/large for container, off-center. No foliage should be below water line. Exhibitors are now allowed to use ‘ballast’ or weight for those large, top-heavy specimens. Ballast might be clear marbles, gravel or stone that is natural color, etc. This ballast must NOT be used for wedging. The cut end of *Prunus* (and any other plants) must sit on top of the weighted material, not ever stuck into it. The water must be clean with no leaves or debris floating in it.

Favorable Comments: well posed; unobtrusive wedging; centered; proportion between specimen and container well balanced, clean and neat.

Unfavorable Comments: container too large for specimen (or vice versa); tilted specimen; branch sits too low in container (or too high); debris in water; ballast used as wedging; container too busy – eye goes to container and stops.