



Wyoming 4-H

Produce Judging Handbook Junior



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Wyoming 4-H Produce Judging Handbook: Junior

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Horticultural and Consumer Qualities

This publication is designed to serve as a reference for fruit, vegetable, and herb identification and judging and is intended to reduce confusion as contestants, coaches, and judges prepare for this contest. Check with your local University of Wyoming Cooperative Extension Service office to make sure you are using the most recent version of this publication.

The 4-H philosophy for produce judging is that the qualities that describe horticultural merit are identical to those traits that make produce ready for purchase and consumption. These qualities include: product uniformity, stage of ripeness, freedom from disease and insect damage, absence of bruises and blemishes, and so forth.

The correct stage of ripeness is determined by examining either the product's skin or leaves. If the product's skin is wrinkled, shriveled, or collapsed in any way, it is probably overripe. Leafy produce should be firm and not wilted. Unripe vegetables and fruits will have uneven color and usually are very hard. Underripe is better than overripe when selecting produce.

Another way to tell if a vegetable or fruit is edible is to look for bruises, growth cracks, or sunscald. Mechanical damage, such as bruises, may need to be cut out. Growth cracks, most often caused by uneven watering practices, may need to be removed. If large portions of a produce item must be removed due to damage, the produce item is low quality.

Sometimes, vegetables may be misshapen. This distortion often happens when root vegetables, such as carrots or radishes, are grown in heavy, compacted soil that has not been amended or properly worked. Odd shapes may occur in vegetables grown above ground or in fruits when they grow next to another plant, a rock, or some other obstacle.

Holes, chewed sections, and discolored areas on vegetables, fruits, or herbs are signs of insect damage. Disease damage results in discolored lesions, off-color and streaked appearances in the flesh, and rotted areas.

Produce Names, Spellings, and Descriptions

Only the names and spellings listed in this manual are considered correct in 4-H produce judging and identification. Contestants may use either plural or singular forms of produce names when writing names on answer sheets or cards during the contest's identification section. They may spell the names with or without capitalized first letters. For example, Onion, onion, Onions, and on-ions all are correct.

The list below shows proper spelling of vegetables, fruit, and herbs. Words in parentheses are descriptive, which may be added to the correct name, but they are not required. For example:

tomato, ripe tomato, cherry tomato, and ripe cherry tomato all would be correct answers when identifying a ripe, round tomato fruit measuring 7/8-inch in diameter.

When descriptive words, in parentheses, are separated by the word "or," be certain to choose the correct word or words to describe the vegetable, fruit, or herb. In the tomato example above, the fruit described is not a pear or plum tomato; therefore, the answer would be wrong if either "pear" or "plum" was used as part of the name.

In the list below, when two names (not in parentheses) are separated by the word "or," either of those names is correct. But, only one name may be used. For example, muskmelon cantaloupe would be incorrect.

We suggest contestants receive 10 points for correctly spelled vegetable names, 8 points for phonetically spelled vegetable names, and 0 points for incorrectly spelled vegetable names.

Correct Spellings of Produce Names

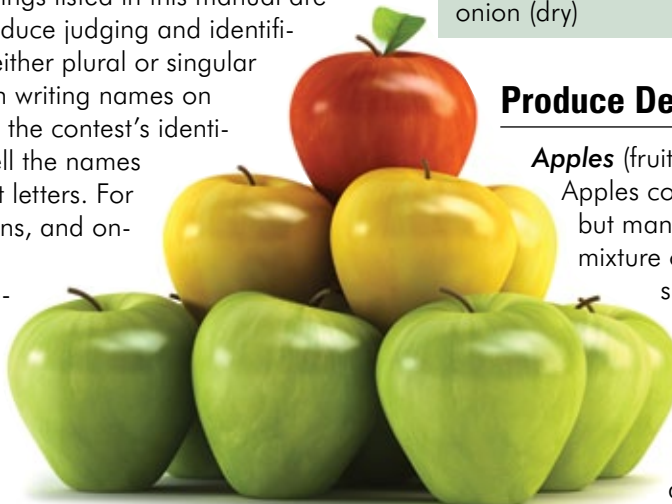
apple	orange
asparagus	parsley
banana	parsnip
beet (table)	pea (green, in pod)
broccoli	pepper
Brussels sprout	potato (plural is potatoes)
cabbage	radish (plural is radishes)
carrot	rhubarb
cauliflower	rutabaga (table)
celery	shallot
chard (Swiss)	snap bean (yellow or green)
cucumber (slicing or pickling)	spinach
dill	strawberry (plural is strawberries)
edible podded pea	summer squash
eggplant	sweet corn
garlic	sweet potato (plural is sweet potatoes)
grape	tomato
green onion	turnip
head lettuce	watermelon
leaf lettuce	winter squash
leek	
muskmelon/cantaloupe	
onion (dry)	

Produce Descriptions, Merits, and Faults

Apples (fruit) are round to slightly elongated.

Apples commonly come in red, yellow, or green, but many of the newer varieties may be a mixture of these colors. The flesh of the apple should be white, or, on some varieties, soft pink. ¹

Merits of apples include: crisp flesh that is white and juicy, smooth skin devoid of blemishes, and firm tissue all the way to the core. The apple should have good symmetry.



Chard (vegetable) consists of large, thick, crumpled leaves. Chard can include single leaves or the entire plant with the roots removed. Stems are short. Petioles and midribs may be white, red, orange, or yellow.

Merits of chard include: firm, tender, crisp leaves free from insect or disease damage.

Faults of chard include: small or wilted leaves, roots that are still present or uneven color.

Cucumber (fruit) is an immature, firm, heavy, green fruit. Pickling cucumbers are 1 ¾ inches to 5 inches long, and they are blocky. Slicing cucumbers are 6 inches to 9 inches long. European slicing cucumbers can be up to 16 inches long. Lemon cucumbers are egg-shaped and 4 inches to 6 inches long. Lemon cucumbers have light-yellow skin.

Merits of cucumbers include: uniform size, crisp and straight fruits, dark green color, uniform maturity, and evenly spaced spines (if present).

Faults of cucumbers include: non-standard size or color, or wilted, overmature fruits.

Dill (herb) has green, fragrant flower heads with stems and green leaves. Seeds are brown and immature and should not be shedding.

Merits of dill include: freshness, uniform and balanced bunches, and clean leaves and stems.

Faults of dill include: dirty foliage or flower heads, disease or insect damage, discoloration, or wilted foliage.

Edible podded peas (fruit) are tender, flat pods. The seeds inside should be starting to enlarge. Some varieties have rounder, crisp pods with nearly full-grown seeds. Both ends of the pods are intact.

Merits of edible podded peas include: uniform color and size, both ends intact, and fresh, crisp pods.

Faults of edible podded peas include: wilted or overmature pods, pale color, or insect or disease damage.

Eggplant (fruit) is a black, purple, or white, round- to egg-shaped fruit. An eggplant may be as long as 14 inches.

Merits of eggplant include: well-shaped, firm, mature fruit. Other merits are a connected stem and a shiny surface.

Faults of eggplant include: wilted or misshapen fruit, uneven color, or overmaturity.

Garlic (herb) is a bulb 1½ inches to 3 inches in diameter. Garlic may be white to pink, and it has papery, dry skin.

Merits of garlic include: individual cloves uniform in size and shape and clear skin.

Faults of garlic include: soft or damaged bulbs.

Grapes (fruit) are round fruits that grow in clusters on vines. The skin of the fruit may be green, red, purple, or



yellow when ripe. The skin is usually thin and the flesh juicy. Seeds may or may not be present, depending on the variety. ¹

Merits of grapes include: plump fruits, stem securely attached, rich coloring, and absence of shriveling or skin blemishes

Faults of grapes include: blackening of skin near stem, soft or shriveled fruits, and mold present on fruits.

Green onions (vegetable) are immature onion plants. Green onions have thick, straight stems with roots trimmed short.

Merits of green onions include: no large bulge at the base, clear-white base color, and dark green tops. Green onions should be fresh and clean.

Faults of green onions include: wilted or damaged tissues, or soft tops. Another fault is when the base bulges more like an onion.

Head lettuce (vegetable) is a solid, round head of green leaves. The midribs and center leaves are nearly white.

Merits of head lettuce include: a firm, crisp, clean, solid head heavy for its size.

Faults of head lettuce include: wilted, dirty, loose, or damaged leaves.

Leaf lettuce (vegetable) consists of a rosette of tender green leaves attached to a stem. The roots are removed.

Merits of leaf lettuce include: firm, crisp leaves that are attached to the stem and have uniform color and size.

Faults of leaf lettuce include: wilted, dirty, or damaged leaves.

Leeks (vegetable) look like large green onions with thick, straight 1-inch to 2 inches thick stems. Leeks have flattened, green leaves.

Merits of leeks include: uniform size, shape, and color with dark green tops and clear-white bulbs.

Faults of leeks include: uneven color, faded or pale tops, or a wilted or damaged product.

Muskmelons or cantaloupes (fruit) are netted or ribbed, round to oval fruits. The fruits will have cream-colored netting on rinds and greenish to yellow skins.

Merits of muskmelons include: clean, firm fruits free of soft spots, scratches, or decay. Netting should be deeply ridged over melons. Color should be even.

Faults of muskmelons include: over- or underripeness, poor color, blemishes, or coarse netting.

Onions (vegetable) are mature bulbs with dry roots and dry necks. Outer scales are dry and can be red, brown, yellow, or white. Onions may be flattened, round, or spindle-shaped. But, they should be heavy for their size.

Merits of onions include: even color and heaviness for their size. Onions also should have clear skin, thin necks, and should be uniform in size. They should have good color and shape.

Faults of onions include: any damage, too many layers of outer skin removed, or thick, soft necks.

Oranges (fruit) are a round fruit that bears similarity to grapefruit but are a bit smaller. The rind tends to be somewhat rough and is orange to yellow-orange in color. The flesh is yellow-orange and sweet to the taste. ¹

Merits of oranges include: smooth and shiny skin, firm fruit, and absence of mold or bruising.

Faults of oranges include: dull or wrinkled skin, soft fruit, and the presence of mold or bruising.

Parsley (herb) has curled or smooth green leaves with no flowers or seed heads.

Merits of parsley include: fresh, deep-green color and crisp, clean leaves.

Faults of parsley include: wilted or yellowish foliage or foliage damaged by insects.

Parsnip (vegetable) is a long, tapered, creamy-white root.

Merits of parsnips include: uniformity in size and trueness to type. Parsnips should be free of side roots. They also should be firm, solid, and exhibit good color.

Faults of parsnips include: cracked or branched roots, rubbery flesh, or uneven color. Warty or over- or under-sized roots also should be faulted.

Peas (vegetable) are full-size, tender, green seeds in fresh, green pods.

Merits of peas include: freshness, bright-green color, and uniform length and size.

Faults of peas include: large, empty, or partially filled pods. Discolored, damaged, or overmature peas also should be faulted.

Peppers (fruit) are green, red, or yellow fruits. They will have three or four lengthwise lobes and their shapes may be round or long and tapered. Peppers have deep color. Peppers are firm and heavy with thick walls.

Merits of peppers include: uniform size, color, and variety. Peppers should be crisp, heavy, smooth, and free of blemishes. Stems should be attached but cut cleanly. Peppers should have same number of lobes or sections.

Faults of peppers include: dull or rough texture and fruits that are off-color or lightweight. Other faults include soft spots or damage from sunscald, disease, or insects.



Potatoes (vegetable) are swollen underground stems with buds (eyes). Potato skins can be smooth or russeted. Color and shape may differ among varieties. Potatoes should be heavy for their size and should show no green spots.

Merits of potatoes include: medium-size tubers (best show size 8 to 10 ounces) that are firm and plump. Skins should be smooth (or russeted, depending on the variety) and free of scab, mosaic, or other damage.

Faults of potatoes include: immaturity, rubbed off or thin skin, or odd shapes. Bruised or diseased potatoes also should be faulted.

Radishes (vegetable) are crisp, swollen roots that measure up to 1¼ inches in diameter. Radishes may be round or long, and their skin may be red, white, or purple. They are white inside.

Merits of radishes include: firm, crisp roots with bright color. Radishes should show good shape for their variety, and skins should be smooth and clean.

Faults of radishes include: poor shapes or colors, rough textures, or wilting. Radishes that are overmature, woody, or pithy should be faulted.

Rhubarb (vegetable) is a leaf stalk with a small portion of the leaf blade included. The skin and inside of the stalk may be red or green.

Merits of rhubarb include: clean stalks and foliage, uniform color, and uniform stalk sizes.

Faults of rhubarb include: absent, wilted, or dirty leaf blades or damaged stalks.

Rutabagas (vegetable) are large, round, or slightly elongated roots. Rutabagas may include several smaller roots at the base. Their skin will be white to yellow, and the top may be purplish.

Merits of rutabagas include: uniform size and trueness to type. Rutabagas should be free of side roots, be firm and solid, and exhibit clear color.

Faults of rutabagas include: roots cracked or branched, rubbery flesh, or uneven color. Warty, under- or oversized rutabagas also should be faulted.

Shallots (vegetable) are round or oblong bulbs. Shallots have dry yellow or red skin and measure about 1 inch in diameter. They may be up to 2½ inches long.

Merits of shallots include: bulbs that are crisp and have uniform color. Shallots should be relatively heavy, have clear skin, and be uniform in size and shape.

Faults of shallots include: thick, soft necks. Damaged or over- or undermature bulbs also should be faulted.

Snap beans (fruit) are crisp pods containing nearly full-size seeds. The pods may be green, yellow, purple, or green with purple spots.

Merits of snap beans include: freshness, uniform color and length, and long, slender shapes. The pods should be brittle and fleshy, well-filled, and free from defects. Both ends of the pods should be intact, and pods may be straight or curled, depending on the variety.

Faults of snap beans include: pods that are tough, wilted, stringy, pale or discolored, rusty, unevenly filled, or overmature.

Spinach (vegetable) consists of thick, dark-green leaves that may be smooth or crumpled. Spinach is often harvested as a whole plant.

Merits of spinach include: clean and crisp foliage with fresh, green color.

Faults of spinach include: wilted foliage, dark or poor foliage color, or a gritty texture.

Strawberries (fruit) are cone-shaped, red fruits that have a skin scattered with small, hard seeds. Strawberry inner flesh is a rich-red color and juicy. The green calyx may be attached at the stem end. The strawberry is an aggregate fruit.¹

Merits of the strawberry include: rich-red skin with juicy, red flesh. The core should be fleshy and juicy. The skin should be free of bruises and blemishes. If present, the calyx should be healthy and green. No visible dirt should be present on the fruits.

Faults of the strawberry include: mold present on the skin, pulpy core, bruised flesh, and a brown calyx or soft tissue near the calyx.

Summer squash (fruit) is a tender, immature fruit. Squash is crisp and even in color, and the seeds are very immature. Summer squash has thin skin. The shape of summer squash varies. Color may be yellow, light to dark green, or striped.

Merits of summer squash include: an attached stem, heavy weight for size, clear and even color, maturity, and freedom from blemishes.

Faults of summer squash include: stems that are absent or soft, lightweight, presence of blemishes, or fruits not true to type.

Sweet corn (fruit) has well-filled kernels on ears covered with fresh, green husks. Sweet corn kernels should be in the milky stage.

Merits of sweet corn include: uniform in length, size, and color ears, according to variety. Kernels should be full and in the milky stage.

Faults of sweet corn include: immature, unfilled, overripe, or hard kernels. Sweet corn with uneven rows of kernels or rows not filled to the tips of the ears should be faulted. Also, damage from worms, insects, or disease is a fault.

Sweet potatoes (vegetable) are round, spindle-shaped, or cylindrical roots. Sweet potatoes may have red, orange, or yellow skin, and skin can be smooth or russeted.

Merits of sweet potatoes include: uniform shape, size, and color. Sweet potatoes should be free from blemishes and should be fresh.



Faults of sweet potatoes include: roots that are branched or cracked, uneven in color, or blemished.

Tomato (fruit) fruits can be red, orange, or yellow. Tomatoes can range from ½ inch in diameter and weigh up to 1 pound. They are firm and heavy but not soft or overripe. Cherry tomatoes are smaller in diameter than standard tomatoes.

Merits of tomatoes include: medium size according to variety. Tomatoes should be firm and should show clear color typical of variety. They should be clean with no cracks. Stems should be closely trimmed or all stems should be removed. Tomatoes should show only a small blossom scar.

Faults of tomatoes include: coarse skins or over- or underripeness. Bruised, soft, cracked, or lobed tomatoes should be faulted.

Turnips (vegetable) are round roots that may either be pure white or have a purple top. Turnips have thin, tender skin.

Merits of turnips include: uniformity in size, trueness to type, and freedom from side roots. Turnips should be firm and solid with clear, clean color.

Faults of turnips include: roots cracked or branched, rubbery flesh, or uneven color. Warty or under- or oversized turnips for the type should be faulted.

Watermelons (fruit) are round or oblong fruits with gray-green, green, striped, or yellow skin. Watermelon flesh may be red, pink, or yellow, and size varies.

Merits of watermelons include: good weight and medium to large size (10 to 20 pounds). Watermelons should exhibit bright color with even striping over the whole melon. Watermelon shapes should be even and without bulges, furrows, or dimples. If there is a yellow spot (rather than white) where the melon rested on ground, it is ripe.

Faults of watermelons include: light weight, uneven shape or color, or presence of blemishes. A white, rather than yellow, ground spot also should be faulted.

Winter squash (fruit) is a mature, hard-shelled fruit. Winter squash shapes and sizes vary. Winter squash should be heavy for its size.

Vegetable, Fruit, and Herb Terms

Bulb	Fleshy, underground leaves on a shortened stem. Compressed leaf tissue.
Butt	The bottom end of a fruit or vegetable.
Cob	The portion of an ear of corn to which kernels are attached.
Core	The central part of a fleshy fruit.
Ear	The fruiting spike of a cereal such as corn or wheat.
End	The tip of a branch, stem, fruit, or vegetable.
Flesh	The succulent, thick, or juicy portion of a fruit or vegetable.
Fruit	The ripened ovary. May or may not contain seeds.
Head	A dense formation of leaves or flowers.
Herb	A plant consisting only of primary tissues. Lacks wood.
Husk	The outer covering of certain fruits or seeds, such as corn.
Kernel	The seed of a grass such as corn.
Leaf	The plant part that photosynthesizes and transpires.
Lobe	Any division or segment of a plant organ.
Midrib	The main or central vein of a leaf.
Neck	Any constricted, slender area.
Outer shell	A hard or tough covering.
Pod	Any dry fruit.
Rib	An elongated ridge, as on a leaf.
Rind	A hard or tough outer layer.
Root	The plant part below ground responsible for anchoring and water and nutrient uptake.
Seed	The product of sexual reproduction in plants.
Shank	The connecting part of a plant between functional parts.
Skin	The outer or surface layer.
Spear	A young shoot.
Stalk	The main supporting structure, stem.
Stem	The vertical axis of a plant.
Taproot	A stout, tapering, primary root such as a carrot or radish.
Tip	The end of a branch, leaf, or fruit.
Tuber	A thickened, compressed, fleshy stem, usually underground.
Vegetable	Any other edible portion of a plant besides a fruit.

Merits of winter squash include: an attached stem and heavy weight. Winter squash should show clear, even color, be mature, and be free from insect, disease, or mechanical injury damage.

Faults of winter squash include: lack of or a soft stem, uneven color, immaturity, or light weight. Winter squash also should be faulted if the fruit is blemished or is not true to type.

Suggested Judging Points Scale (Use as a Guide)

Color	20 points
Condition	20 points
Form	20 points
Size	20 points
Uniformity	20 points

Suggestions for assigning points in each of the above categories follow:

Color

- If the product's color is clear, bright, and typical of the type: 11 to 20 points
- If the color is faded or not uniform: 10 points or less

Condition

- If the produce's condition is fresh, unblemished, and mature for the type: 11 to 20 points
- If the produce is bruised, injured, or scarred by insect or disease damage: 10 points or less

Form

- If the produce is formed symmetrically and is typical of the type: 11 to 20 points
- If the produce's form is misshapen, over- or under-mature, or distorted by insect, disease, or mechanical damage: 10 points or less

Size

- If the produce's size is typical for ideal edibility and consumer use: 11 to 20 points
- If the produce is too small or overly large: 10 points or less

Uniformity

- If the produce has uniform size, form, color, and condition: 11 to 20 points
- If size, form, color, or condition is not optimal: 10 points or less

Descriptive Words: Merits

Fresh	Smooth
Tender	Clean
Succulent	Straight
Crisp	Firm
High quality	Compact
Tapering	Ripe
Maturity	Mature
Solid	Heavy
Edible	Table use

Words concerning uniformity: Uniform size
Uniform shape
Uniform color

Words concerning trueness to variety: Same type
Same variety
Typical shape
Typical color

Descriptive Words: Faults

Blemish	Cracks
Bruise	Decay
Weather damage	Blossom scars
Insect damage	Soft
Mechanical damage	Sunburn
Diseased	Rust
Deteriorated	Waste
Woody	Fibrous
Tough	Stringy
Pithy	Puffy
Withered	Shriveled
Wilted	Over mature
Overripe	Discolored
Yellowing	Immature
Dull color	

Points to Remember:

- Make comparisons
- Grant merits, and criticize faults
- Use different terms
- Be sure you know what you are talking about
- Judge as if the produce would be eaten immediately
- Learn and enjoy!

Sample Reasons

- “I placed corn tray 1 over tray 4 because the latter tray offers the consumer the highest amount of quality product. It has fuller, plumper kernels with more evenly spaced rows. The corn ears in tray 4 showed insect damage and lacked overall consistency of color and size of kernels; therefore, I placed corn tray 1 over tray 4.”
- “I placed tray 2 of beans over tray 4 because of the rusty and shriveled appearance of the beans in tray 4. Although I grant that tray 4 was more uniform in size, shape, and maturity, the presence of the rust and shriveling reduced tray 4’s use by the consumer. Tray 2 has the merits of bright color, a more edible product, and a crisp appearance; therefore, I placed tray 2 over tray 4.”

- “I placed corn tray 1 over tray 4 because of the numerous faults in tray 4. The corn ears in tray 4 were not fully developed and had many empty spaces. The earworm insect damage evident on ears in tray 4 also decreased its appeal to the consumer. Although the ears are not as large as those on tray 4, tray 1 showed more consistent color, filling of kernels, and freedom from insect damage; therefore, I placed corn tray 1 over tray 4.”

Sample Class Placement

- “I place this class of leaf lettuce 1, 2, 3, 4. I placed tray 1 over tray 2 because of the crisp, green leaves on the rosettes and the uniformity of the rosettes on the tray. I placed tray 2 over tray 3 because tray 3 shows damage on the leaves from either weather or harvesting. Leaf lettuce on tray 2 is less uniform than that on tray 1 but does not show the damaged foliage like that on tray 3. I placed tray 3 over tray 4 because, even though there is damage to the leaves on tray 3, there is no wilting and the foliage is clean. I placed tray 4 last because the rosettes are wilted and are not of uniform size, and the foliage is dirty; therefore, I place this class of leaf lettuce 1, 2, 3, 4.”
- “I place this class of strawberries 4, 3, 2, 1. I placed tray 4 over 3 because of the bright colored fruits, juicy ripe flesh and healthy green calyx tissue on the strawberries on tray 4. I placed tray 3 over tray 2 because tray 2 shows bruising of the fruit and brown calyx tissues. While tray 3 has some blemishes on the fruit, no bruising is evident, and the calyx tissues are green. I placed tray 2 over tray 1 because tray 1 has white mold growing on the fruit, and the flesh is extremely soft.”

References

¹ Many of the fruit descriptions were adopted from the University of Florida Web site: <http://florida4h.org/projects/plants/HortIDJudging/4HPSJ24.pdf>

