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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Pumpkin/Squash/Gourd (*Cucurbita* spp.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME

ADDRESS *(Street and No. or RD No., City, State, Zip Code and Country)*	FOR OFFICIAL USE ONLY
	PVPO NUMBER

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

In the spaces on the left, enter the appropriate numbers that describe the characteristics of the application variety. On the right, enter the appropriate numbers that describe the characteristics of the most similar comparison variety. Right justify whole numbers by adding leading zeros if necessary. The variety that you choose for comparison should be the most similar one in terms of overall morphology, background and maturity. The comparison variety should be grown in field trials with the application variety for 2-3 location/years (environments) in the region and season of best adaptability. In general, measurements of quantitative traits should be taken from one trial on 15-25 randomly selected plants or plant parts to obtain averages and statistics that describe a typical field of the variety.

1. SPECIES:	Comparison Variety Name _____
___ Species: 1 = Lagenaria 2 = Maxima 3 = Mixta 4 = Moschata 5 = Pepo 6 = Other (Specify) _____	___ Species
2. KIND: (According to use)	
___ Kind/Use: 1 = Pumpkin 2 = Squash 3 = Gourd	___ Kind/Use
3. TYPE:	
___ Type: 1 = Summer (Vegetable Marrow) 2 = Winter (Boston Marrow)	___ Type
4. COTYLEDON:	
___ ___ ___ mm Long	___ ___ ___ mm Long
___ ___ ___ mm Wide	___ ___ ___ mm Wide
___ Apex: 1 = Tapered 2 = Rounded 3 = Notched	___ Apex
___ Veining: 1 = Obscure 2 = Plainly Visible 3 = Prominent	___ Veining
___ Cotyledon Color: 1 = Light Green 2 = Gray-Green 3 = Medium Green 4 = Dark Green	___ Cotyledon Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
5. MATURE PLANT:	
___ Growth Habit:: 1 = Bush 2 = Semi-Bush 3 = Long Vines	___ Growth Habit
___ Plant Type: 1 = Pilose 2 = Prickly 3 = Glabrous	___ Plant Type
6. MAIN STEM:	
___ X-Section Shape: 1 = Round 2 = Angled	___ X-Section Shape
___ ___ ___ mm Diameter at Mid-Point of First Internode	___ ___ ___ mm Diameter
___ ___ ___ cm Average Length	___ ___ ___ mm Length
___ ___ Average Number of Internodes	___ ___ Number of internodes
7. LEAVES:	
___ Blade Shape: 1 = Ovate 2 = Orbicular 3 = Reniform 4 = Retuse	___ Blade Shape
___ Blade Form: 1 = Not Lobed 2 = Shallow Lobed 3 = Deep Lobed	___ Blade Form
___ Margin: 1 = Entire 2 = Denticulate 3 = Dentate	___ Margin
___ Margin Edges: 1 = Flat 2 = Frilled	___ Margin Edges
___ ___ cm Wide	___ ___ cm Wide
___ ___ cm Long	___ ___ cm Long
___ Leaf Surface: 1 = Smooth 2 = Blistered	___ Leaf Surface
___ Dorsal Surface Pubescence: 1 = Glabrous 2 = Soft Hairy 3 = Bristled	___ Dorsal Surface Pubescence
___ Ventral Surface Pubescence: 1 = Glabrous 2 = Soft Hairy 3 = Bristled	___ Ventral Surface Pubescence
___ Leaf Color: 1 = Light Green 2 = Gray-Green 3 = Medium Green 4 = Dark Green	___ Leaf Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
___ Leaf Blotching: 1 = Not Blotched 2 = Blotched with Gray	___ Leaf Blotching
___ ___ cm Petiole Length	___ ___ cm Petiole Length
8a. FLOWER – Pistillate:	
___ ___ cm Diameter	___ ___ cm Diameter
___ Ovary: 1 = Drum-like 2 = Turbinate 3 = Fusiform	___ Ovary
___ cm Pedicel Length	___ cm Pedicel Length
___ Margin Shape: 1 = Straight 2 = Curved	___ Margin Shape
___ Margin Edges: 1 = Plain 2 = Frilled	___ Margin Edges
___ ___ mm Sepal Width	___ ___ mm Sepal Width
___ ___ mm Sepal Length	___ ___ mm Sepal Length
___ Color: 1 = White 2 = Lemon Yellow 3 = Mid-Yellow 4 = Deep Yellow 5 = Orange	___ Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
8b. FLOWER – Staminate:	
___ ___ mm Sepal Length	___ ___ mm Sepal Length
___ ___ mm Sepal Width	___ ___ mm Sepal Width
___ ___ cm Pedicel Length	___ ___ cm Pedicel Length
___ Color: 1 = White 2 = Lemon Yellow 3 = Mid-Yellow 4 = Deep Yellow 5 = Orange	___ Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
9. FRUIT: (Market Maturity)	
___ ___ cm Length	___ ___ cm Length
___ ___ cm Width (Stem end)	___ ___ cm Width (Stem end)
___ ___ cm Width (Blossom end)	___ ___ cm Width (Blossom end)
___ ___ ___ ___ gm Average Weight	___ ___ ___ ___ gm Average Weight
___ Shape According to Variety Type: 1 = Acorn 2 = Banana 3 = Buttercup 4 = Butternut 5 = Connecticut Field 6 = Crookneck 7 = Hubbard 8 = Scallop 9 = Straightneck 10 = Other (Specify) _____	___ Shape According to Variety Type

Table 1. Descriptions of fruit shapes, with examples.

Fruit type	Fruit general shape	Example varieties
Pumpkin	from flattened globular to elliptical globular	Connecticut Field, Halloween, Little Boo, Small Sugar
Miniature Pumpkin	transverse elliptical	Jack Be Little
Scallop	flattened disc shaped with equatorial margin	Patty Pan, Scallopini
Acorn	top shaped with furrows	Table Queen
Neck	bottle-shaped with pointed blossom end	Early Prolific Straightneck, Yellow Summer Crookneck
Zucchini	from pear-shaped to elliptical to cylindrical to club-shaped	Ambassador, Beiruti, Clarita, Elite, Ibis, Romano
Rounded Zucchini	globular	De Nice B fruit rond, Redondo
Delicata	elliptical	Delicata
Spaghetti Squash	elliptical	Pasta, Vegetable Spaghetti
Rondini	globular	Little Gem
Ölkürbis	globular	Markant

___ Apex: 1 = Depressed 2 = Flattened 3 = Rounded 4 = Taper Pointed	___ Apex
___ Base: 1 = Depressed 2 = Flattened 3 = Rounded 4 = Taper Pointed	___ Base
___ Ribs: 1 = None 2 = Inconspicuous 3 = Prominent	___ Ribs
___ Rib Furrow Depth: 1 = Shallow 2 = Medium Deep	___ Rib Furrow Depth
___ Rib Furrow Width: 1 = Narrow 2 = Medium Wide 3 = Wide	___ Rib Furrow Width
___ Fruit Surface: 1 = Smooth 2 = Fine Wrinkle 3 = Shallowly Wavy	___ Fruit Surface
___ Warts: 1 = None 2 = Few 3 = Many	___ Warts
___ Blossom Scar Button 1 = Depressed 2 = Slightly Extended 3 = Raised Acorn	___ Blossom Scar Button
10. RIND:	
___ ___ mm Thickness at Medial	___ ___ mm Thickness at Medial
___ Toughness: 1 = Soft 2 = Hard 3 = Woody & Tough	___ Toughness
___ Overall Color Pattern: 1 = Regular 2 = Irregular	___ Overall Color Pattern
Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
10. RIND: (continued)	
Colors: (Select two color codes when necessary, i.e. Grayish-Buff) _1_2_0_4	Colors:
01 = White 02 = Cream 03 = Yellow 04 = Buff 05 = Brown 06 = Bronze 07 = Green 08 = Orange 09 = Pink 10 = Red 11 = Blue 12 = Gray 13 = Black 14 = Other (Specify) _____	
__ __ __ __ Main Color or Ground Color	__ __ __ __ Main/Ground Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
Color(s) Pattern Location	Color(s) Pattern Location
__ __ __ __ Streaks ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Streaks ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
__ __ __ __ Stripes ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Stripes ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
__ __ __ __ Spots ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Spots ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
__ __ __ __ Blotches ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Blotches ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
__ __ __ __ Lace ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Lace ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
__ __ __ __ Other ___ 1 = Not Specific 2 = Stem End Half 3 = Blossom End Half (Describe "other" in notes) 4 = Acorn or Torban 5 = Other (Specify) _____	__ __ __ __ Other ___
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
11. FLESH:	
___ ___ mm Blossom End Thickness	___ ___ mm Blossom End Thickness
___ ___ mm Medial Thickness	___ ___ mm Medial Thickness
___ ___ mm Stem End Thinkness	___ ___ mm Stem End Thinkness
___ Texture 1: 1 = Fine 2 = Granular 3 = Lumpy 4 = Stringy	___ Texture 1
___ Texture 2: 1 = Soft 2 = Firm 3 = Brittle	___ Texture 2
___ Texture 3: 1 = Dry 2 = Moist 3 = Juicy	___ Texture 3
___ Flavor: 1 = Insipid 2 = Slightly Sweet 3 = Sweet	___ Flavor
___ Quality: 1 = Inedible 2 = Good 3 = Excellent	___ Quality
__ __ __ __ Flesh Color: (Choose from rind colors above)	__ __ __ __ Flesh Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
12 . SEED CAVITY: (Sectioned Apex to Base)	
___ ___ cm Length	___ ___ cm Length
___ ___ cm Width	___ ___ cm Width
___ Location: 1 = Conforms to Fruit Shape 2 = Near Apex 3 = Apex Only	___ Location
___ Placental Tissue: 1 = Sparse 2 = Moderately Abundant 3 = Abundant	___ Placental Tissue
___ Center Core: 1 = Inconspicuous 2 = Prominent	___ Center Core
13. FRUIT STALKS:	
___ ___ cm Length	___ ___ cm Length
___ ___ cm Diameter	___ ___ cm Diameter
___ X-Section Shape: 1 = Round 2 = Irregular	___ X-Section Shape
___ Twisting: 1 = Not Twisted 2 = Twisted	___ Twisting
___ Tapering: 1 = Not Tapered 2 = Tapered	___ Tapering
___ Straightness: 1 = Straight 2 = Slightly Curved 3 = Curved	___ Straightness
___ Texture: 1 = Soft 2 = Spongy 3 = Hard	___ Texture
___ Farrows: 1 = None 2 = Shallow 3 = Deep	___ Farrows
___ Surface: 1 = Smooth 2 = Rough 3 = Spiny	___ Surface
___ Attachment End: 1 = Not Expanded 2 = Slightly Expanded 3 = Expanded	___ Attachment End
___ Detaches: 1 = Easily 2 = With Difficulty	___ Detaches
___ Color: 1 = Light Green 2 = Medium Green 3 = Dark Green	___ Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
14. SEEDS:	
___ ___ mm Length	___ ___ mm Length
___ ___ mm Width	___ ___ mm Width
___ ___ mm Thickness	___ ___ mm Thickness
___ Face Surface: 1 = Smooth 2 = Wrinkled 3 = Slightly Pitted 4 = Scaly 5 = Creased	___ Face Surface
___ Color: 1 = White 2 = Cream 3 = Buff 4 = Brown	___ Color
Color Chart Name _____ Color Chart Value _____	Color Chart Value _____
___ Luster: 1 = Dull 2 = Glossy	___ Luster
___ Margin: 1= Straight 2 = Curved 3 = Twisted	___ Margin
___ Margin Edge: 1 = Rounded 2 = Wedge-like	___ Margin Edge
___ Separation from pulp: 1 = Easy 2 = Moderately Easy 3 = Difficult	___ Separation from pulp
___ ___ gms per 100 Seeds	___ ___ gms per 100 Seeds
___ ___ ___ No. Seeds per Fruit	___ ___ ___ No. Seeds per Fruit
___ Seed Coat: 1 = Normal 2 = Naked	___ Seed Coat: 1 = Normal 2 = Naked
Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
15. DISEASE RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)	
___ Powdery Mildew	___ Powdery Mildew
___ Cucumber Mosaic	___ Cucumber Mosaic
___ Squash Mosaic	___ Squash Mosaic
___ Watermelon Mosaic	___ Watermelon Mosaic
___ Other (Specify) _____	___ Other (Specify) _____
16. INSECT RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)	
___ Squash Bug	___ Squash Bug
___ Squash Borer	___ Squash Borer
___ Other (Specify) _____	___ Other (Specify) _____

17. Attach at least ONE photographic print of the application variety and the comparison variety described above, indicating the identity of each variety. This photograph should show fruit rind and flesh of each variety at a magnification sufficient to identify most of the verbal descriptors given above. (Additional information and photographs in support of this application may be supplied as part of the Exhibits B or D.)

REFERENCES:

1. Currence, T. M. 1954. *Vegetable Crops Breeding*, Department of Horticulture, University of Minnesota.
2. Tapley, W.T., Enzie, W.D. and Van Eseltine, G. P., 1937. *Vegetables of New York: The Curcurbits 1 (4)*. J. B. Lyon Company, Albany, New York
3. USDA Farmess Bulletin No. 1086. 1969. *Growing Pumpkins and Squashes*.
4. Whitaker, T.W. and G. N. Davies. *Curcurbits*. Interscience Publications, Inc., New York, NY

Color: Munsell Book of Color, Royal Horticultural Society Colour Chart, Nickerson's or any recognized color fan may be used to determine the color of the variety.