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

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Cauliflower (*Brassica oleracea* var. *botrytis* L.)

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. REGION OF ADAPTATION (Area where best adapted in USA)

_ 1 = Northeast 2 = Mid-Atlantic 3 = Southeast 4 = Florida
5 = Great Plains 6 = South Central 7 = Intermountain 8 = Northwest
9 = Pacific Coast 10 = Desert Southwest 11 = Most Regions

LOCATION and YEAR(S) of Data Collection _____

Comparison Variety Name _____

_ Region of Adaptation

2. MATURITY (Main Crop at 50% Harvest)

_ Harvest Season: 1 = Fall 2 = Fall/Winter 3 = Winter/Spring
4 = Spring/Summer 5 = Summer 6 = Summer/Fall

DAYS	HEAT UNITS	
_ _ _	_ _ _ _	From Direct Seeding
_ _ _	_ _ _ _	From Transplanting
_ _ _		Length of Harvest Period
_ _ _		Percent of Total Crop Harvested After 2 Pickings

MATURITY

_ Harvest Season

DAYS	HEAT UNITS	
_ _ _	_ _ _ _	From Direct Seeding
_ _ _	_ _ _ _	From Transplanting
_ _ _		Length of Harvest Period
_ _ _		Percent Harvested after 2 Pickings

3. SEEDLING

_ Cotyledon Color: 1 = Yellow-Green 2 = Light Green 3 = Medium Green
4 = Dark Green 5 = Blue-Green 6 = Purple-Green

Color Chart Name: _____ Color Chart Code _____

_ Cotyledon Anthocyanin: 1 = Absent 2 = Weak 3 = Strong

_ Hypocotyl Anthocyanin: 1 = Absent 2 = Weak 3 = Strong

SEEDLING

_ Cotyledon Color

Color Chart Code _____

_ Cotyledon Anthocyanin

_ Hypocotyl Anthocyanin

4. PLANT (At Harvest)

		Standard Deviation	Sample Size
_ _ _. _	cm Plant Height (from soil line to top of leaves)		
_ _ _. _	cm Curd Height (from soil line to top of curd)		
_	Market Class: 1 = Fresh Market (White Rock) 2 = Processing (Snowball) 3 = Both		

PLANT

Mean		Standard Deviation	Sample Size
_ _ _. _	cm Plant Height		
_ _ _. _	cm Curd Height		
_	Market Class		

Application Variety Data | Comparison Variety Data

Application Variety Data	Comparison Variety Data

5. OUTER LEAVES (at Maturity)

	Standard Deviation	Sample Size
_ _ _ Number of Leaves per Plant		
_ _ _ cm Width (at midpoint of plant including petiole)		
_ _ _ cm Length (at midpoint of plant including petiole)		
_ _ _ cm Petiole Length		

_ Leaf Attachment: 1 = Mostly Sessile 2 = Mostly Petiolate 3 = Equally Sessile and Petiolate

_ Wax Presence: 1 = None 2 = Weak 3 = Intermediate 4=Strong

_ Foliage Color (with wax if present): 1 = Light Green 2 = Medium Green 3 = Dark Green 4 = Grey-Green 5 = Blue-Green 6 = Purple-Green

Color Chart Name: _____ Color Chart Code _____

_ Leaf Shape: 1 = Narrow Elliptic 2 = Elliptic 3 = Broad Elliptic

_ Leaf Base: 1 = Blunt 2 = Pointed

_ Leaf Apex: 1 = Blunt 2 = Pointed

_ Leaf Margins: 1 = Straight 2 = Slightly Wavy 3 = Very Wavy

_ Midrib: 1 = Not Raised 2 = Slightly Raised 3 = Greatly Raised

_ Blistering: 1 = None 2 = Weak 3 = Intermediate 4=Strong

_ Attitude (Leaf Angle from Ground): 3 = Horizontal (0-15 degrees) 5 = Semi-erect (35-55 degrees) 7 = Erect (80-100 degrees) (*See Figure 1 at end of form)

_ Torsion of Leaf Tip: 1 = None 2 = Weak 3 = Intermediate 4=Strong

_ Profile of Upper Side of Leaf: 1 = Concave 2 = Planar 3 = Convex

OUTER LEAVES

Mean		Standard Deviation	Sample Size
_ _ _	No. Leaves		
_ _ _. _	cm Width		
_ _ _. _	cm Length		
_ _ _. _	cm Petiole Length		

_ Leaf Attachment

_ Wax Presence

_ Foliage Color

Color Chart Code _____

_ Leaf Shape

_ Leaf Base

_ Leaf Apex

_ Leaf Margins

_ Midrib

_ Blistering

_ Attitude

_ Torsion of Leaf Tip

_ Profile of Upper Side of Leaf

6. CURD (At Market Maturity)

	Standard Deviation	Sample Size
_ _ _. _ cm Diameter (at widest point)		
_ _ _. _ cm Depth		
_ _ _ _. _ gm Weight (market trimmed)		

_ Coverage by Inner Leaves: 1 = Exposed 2 = Partly Covered 3 = Complete

_ Color: 1 = White 2 = Cream/Ivory 3 = Yellow 4 = Orange 5 = Green 6 = Pink 7 = Purple-Green 8 = Other (specify) _____

Color Chart Name: _____ Color Chart Code _____

_ Shape (Longitudinal Section): 1 = Circular 2 = Transverse Broad Elliptic 3 = Transverse Elliptic 4 = Transverse Narrow Elliptic (*See Figure 2 at end of form)

_ Dome Shape: 1 = Weak Dome (Flattened) 2 = Medium Dome (Shallow) 3 = Strong Dome (Deeply Domed) (*See Figure 2 at end of form)

_ Compactness: 1 = Loose 2 = Medium 3 = Tight

_ Surface Knobbling: 1 = Fine 2 = Medium 3 = Coarse (*See Figure 3 at end of form)

_ _ _. _ Percent of Curds with Anthocyanin Coloration

_ Color of Curd Leaves: 1 = White 2 = Green 3 = Red 4 = Other _____

Color Chart Name: _____ Color Chart Code _____

_ Curd Pubescence: 1 = None 2 = Slight 3 = Heavy

_ Pubescence Color: 1 = White 2 = Green 3 = Red 4 = Purple 5=Other _____

Color Chart Name: _____ Color Chart Code _____

CURD

Mean		Standard Deviation	Sample Size
_ _ _. _	cm Diameter		
_ _ _. _	cm Depth		
_ _ _. _	gm Weight		

_ Coverage by Inner Leaves

_ Color

Color Chart Code _____

_ Shape (longitudinal Section)

_ Dome Shape

_ Compactness

_ Surface Knobbling

_ _ _. _ Percent of Curds with Anthocyanin Coloration

_ Color of Curd Leaves

Color Chart Code _____

_ Curd Pubescence

_ Pubescence Color

Color Chart Code _____

Application Variety Data	Comparison Variety Data

Application Variety Data	Comparison Variety Data
7. FLOWER (at Anthesis)	**FLOWER**
_ Color : 1 = White 2 = Cream 3 = Yellow 4 = Other _____	_ Color
Color Chart Name: _____ Color Chart Code _____	Color Chart Code _____
_ Flower Stalk Color: 1 = Green 2 = Purple 3 = Variegated	_ Flower Stalk Color
Color Chart Name: _____ Color Chart Code _____	Color Chart Code _____
_ Cytoplasmic Male Sterility: 1 = Absent 2 = Present	_ Cytoplasmic Male Sterility
8. DISEASE REACTIONS (Include race if known) (rate on 1 to 9 scale, where 1 = Most Susceptible and 9 = Most Resistant)	
_ Black Leg (*Leptosphaeria maculans*)	_ Black Leg
_ Black Spot (*Alternaria* spp.)	_ Black Spot
_ Bottom Rot (*Rhizoctonia solani*)	_ Bottom Rot
_ Cauliflower Mosaic Virus	_ Cauliflower Mosaic Virus
_ Cerospora Leaf Spot (*Cercospora brassicicola*)	_ Cerospora Leaf Spot
_ Clubroot (*Plasmodiophora brassicae*)	_ Clubroot
_ Downy Mildew (*Peronospora parasitica*)	_ Downy Mildew
_ Erwinia spp.	_ Erwinia spp.
_ Phytophthora Root Rot (*Phytophthora megasperma*)	_ Phytophthora Root Rot
_ Powdery Mildew (*Erysiphe polygoni*)	_ Powdery Mildew
_ Ring Spot (*Mycosphaerella brassicicola*)	_ Ring Spot
_ Turnip Yellow Mosaic Virus	_ Turnip Yellow Mosaic Virus
_ Verticillium Wilt (*Verticillium albo-atrum*)	_ Verticillium Wilt
_ White Blister (*Albugo candida*)	_ White Blister
_ Xanthomonas Campestris	_ Xanthomonas Campestris
_ Yellows (*Fusarium oxysporum*)	_ Yellows
_ Other (Specify) _____	_ Other (Specify) _____
9. INSECT REACTIONS (rate on 1 to 9 scale, where 1=most susceptible and 9=most resistant)	
_ Aphids	_ Aphids
_ Cabbage Looper (*Trichoplusia ni*)	_ Cabbage Looper
_ Cabbage Maggot (*Delia radicum*)	_ Cabbage Maggot
_ Cabbage Webworm (*Hellula rogatalis*)	_ Cabbage Webworm
_ Cutworms	_ Cutworms
_ Diamondback Moth (*Plutella xylostella*)	_ Diamondback Moth
_ Imported Cabbageworm (*Pieris rapae*)	_ Imported Cabbageworm
_ Nematodes	_ Nematodes
_ Other (specify) _____	_ Other (specify) _____
10. OTHER REACTIONS (rate from 1 to 9, where 1 = most susceptible and 9 = most resistant)	
_ Buttoning	_ Buttoning
_ Blindness	_ Blindness
_ Drought	_ Drought
_ Heat	_ Heat
_ Riceyness	_ Riceyness
_ Whiptail	_ Whiptail
_ Insect (Specify) _____	_ Insect (Specify) _____

10. COMMENTS (If more space is needed, continue in Exhibit D)

Figure 1. Leaf Attitude

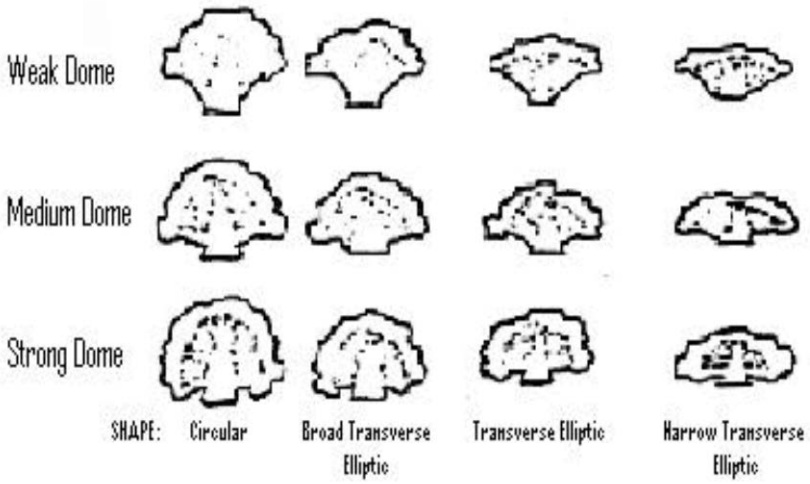

Figure 2. Curd Shape and Dome

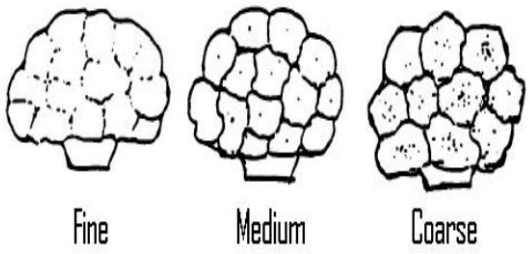

Figure 3. Surface Knobbling