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**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT C**

**OBJECTIVE DESCRIPTION OF VARIETY  
MUSTARD (*Brassica spp.* or *Sinapsis 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. Any other characteristics should be recorded in the Comments Section, and continued in Exhibit D, to help establish uniqueness. 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 years in the region and season of best adaptability. At least one year of trials should be conducted within the United States of America. 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. A second trial of the same size would be needed to establish distinctness based on quantitative data. (Form technical content last updated July 2008.)

Give test area \_\_\_\_\_ conditions \_\_\_\_\_.

<b>1. SPECIES</b> ___ 1= Brassica juncea    2=Sinapsis alba    3=Other (specify _____)	COMPARISON VARIETY _____ ___ Species
<b>2. TYPE</b> ___ 1=Spring    2=Winter	___ Type
<b>3. PLANT HEIGHT (at pod maturity)</b> _____ cm Tall Height Class: ___ Autumn sown 1 = Short                            2 = Medium short 3 = Medium                            4 = Medium tall 5 = Tall Height Class: ___ Spring sown 1 = Short                            2 = Medium short 3 = Medium                            4 = Medium tall 5 = Tall	_____ cm Tall ___ Autumn Sown Height Class ___ Spring Sown Height Class
<b>4. STEM ANTHOCYANIN</b> ___ 1=Absent    2=Weak    3=Medium    4=Strong	___ Stem Anthocyanin
<b>5. SEED COTYLEDONS (maximum width fully developed; mean of 50 graded seeds)</b> ___ 1=Narrow    2=Medium    3=Broad	___ Seed Cotyledons
<b>6. SEEDLING GROWTH HABIT (leaf rosette)</b> ___ 1=Upright    2=Prostrate (short photoperiod)	___ Seedling Growth Habit

<p><b>7. LEAVES</b></p> <p>___ Margins (serration): 1=Absent or Very Weak 2=Weak 3=Medium 4=Strong</p> <p>___ Lobing (fully developed leaf on plant or rosette) 1=Absent or Very Weak 2=Weak 3=Medium 4=Medium Strong 5=Strong</p> <p>___ Leaf Attachment to Stem: 1=Fully clasping 2=Partial clasping 3=No Clasping</p> <p>___ Color: 1=Light Green 2=Medium Green 3=Medium Dark Green 4=Dark Green</p> <p>___ Glaucoisity: 1=Absent 2=Weak 3=Weak to Medium 4=Medium 5=Medium to Strong 6=Strong</p>	<p>___ Leaf Margins (serration)</p> <p>___ Leaf Lobing</p> <p>___ Leaf Attachment to Stem</p> <p>___ Leaf Color</p> <p>___ Leaf Glaucoisity</p>
<p><b>8. FLOWERS</b></p> <p>___ Flower Buds Location: 1=Buds at tip of apical meristem 2=Buds immediately below apical meristem</p> <p>___ Petal Color: 1= White 2 = Pale yellow 3=Yellow 4=Orange</p> <p>___ Anther Dotting 1=Absent 2=Few 3=Medium 4=Many</p> <p>___ % Anther Dotting at opening of flower</p> <p>___ Flowering Class (Autumn sown) 1 = Very early 2 = Early 3 = Medium early 4 = Medium late 5 = Late 6 = Very late</p> <p>___ Flowering Class (Spring sown) 1 = Very early 2 = Early 3 = Medium early 4 = Medium late 5 = Late 6 = Very Late</p>	<p>___ Flower Buds Location</p> <p>___ Petal Color</p> <p>___ Anther Dotting</p> <p>___ % Anther Dotting at opening of flower</p> <p>___ Autumn Sown Flowering Class</p> <p>___ Spring Sown Flowering Class</p>
<p><b>9. PODS (Silique)</b></p> <p>___ Pod Type: 1=Bilateral Single Pod 2=Other (describe _____)</p> <p>___ Silique Beak Length: 1=Short 2=Medium 3=Long</p> <p>___ Pod Length: 1=Short 2=Medium 3=Long</p> <p>___ mm Pod Length</p> <p>___ Pod Width: 1=Narrow 2=Medium 3=Wide</p> <p>___ mm Pod Width</p> <p>___ Pod Habit: 1=Erect 2=Semi-erect to erect 3=Semi-erect 4 = Horizontal to semi-erect 5 = Horizontal</p> <p>___ Pedicel Length: 1=Very short 2=Short 3=Long</p> <p>___ Ripening Class (Autum sown): 1=Very early 2=Early 3=Medium 4=Late 5=Very late</p> <p>___ Days to Maturity</p>	<p>___ Pod Type</p> <p>___ Silique Beak Length</p> <p>___ Pod Length</p> <p>___ mm Pod Length</p> <p>___ Pod Width</p> <p>___ mm Pod Width</p> <p>___ Pod Habit</p> <p>___ Pedicel Length</p> <p>___ Ripening Class (Autum sown)</p> <p>___ Days to Maturity</p>
<p><b>10. SEEDS</b></p> <p>___ g/1000 Unsized Seed</p> <p>___ Weight Class (grams): 1=less than 3.0 2=3.0 – 3.9 3=4.0 – 5.0 4=more than 5.0</p> <p>___ Seeds Per Pod: 1=Low 2=Medium 3=High</p> <p>___ Number of Seeds per Pod</p> <p>___ Testa Color: 1 = Black 2 = Dark brown to black 3 = Reddish-brown to black 4 = Red 5 = Yellow 6 = Other _____</p>	<p>___ g/1000 Unsized Seed</p> <p>___ Weight Class</p> <p>___ Seeds Per Pod</p> <p>___ Number of Seeds per Pod</p> <p>___ Testa Color</p>

**11. CHEMICAL COMPOSITION OF SEED**

\_\_\_ Euric Acid: 1=Low (less than 2%) 2=Intermediate 3=High (more than 50%)

\_\_\_ Glucosinate Content: 1=Low – less than 30 millim/g  
2=High – More than 30 millim/g

\_\_\_ millimoles/g Glucosinate Content

\_\_\_ mg/g Glucosinate Content

\_\_\_ % Oil

\_\_\_ % Protein (oil free meal)

Fatty Acid Composition (%):

\_\_\_ Palmitic 16:0                      \_\_\_ Stearic 18:0

\_\_\_ Oleic 18:1                            \_\_\_ Linoleic 18:2

\_\_\_ Linolenic 18:3                      \_\_\_ Eicosenoic 20:1

\_\_\_ Erucic 22:1

\_\_\_ Euric Acid

\_\_\_ Glucosinate Content

\_\_\_ millimoles/g Glucosinate Content

\_\_\_ mg/g Glucosinate Content

\_\_\_ % Oil

\_\_\_ % Protein (oil free meal)

Fatty Acid Composition (%):

\_\_\_ Palmitic 16:0                      \_\_\_ Stearic 18:0

\_\_\_ Oleic 18:1                            \_\_\_ Linoleic 18:2

\_\_\_ Linolenic 18:3                      \_\_\_ Eicosenoic 20:1

\_\_\_ Erucic 22:1

**12. FROST TOLERANCE** (Late spring frosts)

\_\_\_ Tolerance: 1=Not hardy – susceptible 2=Moderately suscesptible  
3=Moderately resistant 4=Hardy

\_\_\_ Frost Tolerance

**13. LODGING RESISTANCE**

\_\_\_ Resistance: 1=Weak 2=Moderately weak  
3=Moderately strong 4=Strong

\_\_\_ Lodging Resistance

**14. HERBICIDE RESISTANCE**

\_\_\_ Atrazine: 1 = Susceptible 2 = Resistant

\_\_\_ Other: (Specify) \_\_\_\_\_ 1 = Susceptible 2 = Resistant

\_\_\_ Atrazine

\_\_\_ Other (Specify) \_\_\_\_\_

**15. DISEASE RESISTANCE** (0 = Not tested 1 = Susceptible 2 = Low resistance  
3 = Moderate resistance 4 = High resistance)

\_\_\_ Selerotinia Stem Rot (*Scerotinia sclerotiorum*)

\_\_\_ Black Let, Stem Canker (*Leptosphaeria maculans, Plenodomus lingam, Phoma lingam*)

\_\_\_ White Rust (*Albugo candida, A. Cruciferrarum*)

\_\_\_ Light Leaf Spot (*Pyrenopeziza brassicae*)

\_\_\_ Downy Mildew (*Peronospora parasitica*)

\_\_\_ Rhizoctonia Root Rot (*Rhizoctonia solani*)

\_\_\_ Alternaria Black Spot (*Alternaria brassicicola*)

\_\_\_ Other \_\_\_\_\_

\_\_\_ Selerotinia Stem Rot

\_\_\_ Black Let, Stem Canker

\_\_\_ White Rust

\_\_\_ Light Leaf Spot

\_\_\_ Downy Mildew

\_\_\_ Rhizoctonia Root Rot

\_\_\_ Alternaria Black Spot

\_\_\_ Other \_\_\_\_\_

**16. COMMENTS** (Please give any additional comments which characterize the variety) (Continue in Exhibit D)