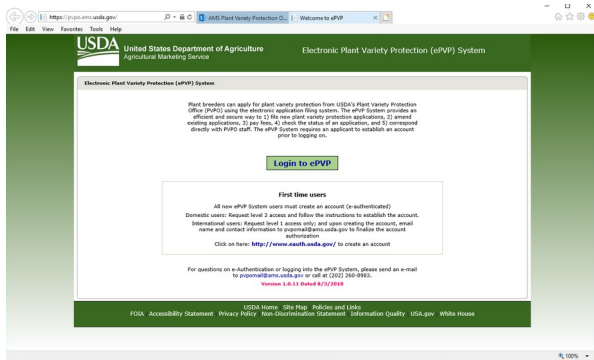
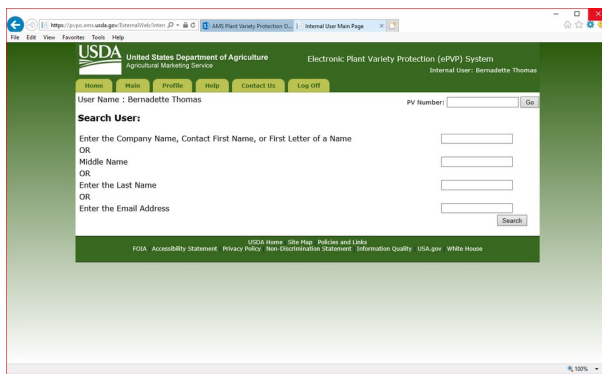


Welcome page.



Internal User Main Page



External User Main Page (Copy sent by user)



Application (ST-470)

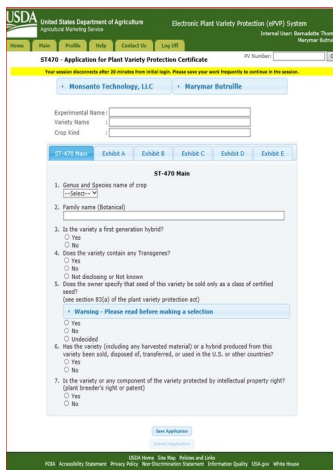


Exhibit A

The screenshot shows the USDA Electronic Plant Variety Protection (EPVP) System application form. The user is logged in as 'Internal User: Monsanto Technology, LLC' and 'Marymar Buttrille'. The application is for 'Monsanto Technology, LLC' and 'Marymar Buttrille'. The form is titled 'ST470 - Application for Plant Variety Protection Certificate'. The user is currently on 'Exhibit A - Origin and Breeding History'. The form includes fields for 'Experimental Name', 'Variety Name', and 'Crop Year'. The main section contains five numbered questions: 1. Describe the genealogy (back to land including public and commercial varieties, lines, or crosses used) and the breeding methodology. 2. Give the details of subsequent stages of selection and multiplication. 3. Is the variety uniform? (Yes/No) with a sub-question 'How did you test for uniformity?'. 4. Is the variety stable? (Yes/No) with a sub-question 'How did you test for stability? Over how many generations?'. 5. Are genetic variants observed or expected during reproduction and multiplication? (Yes/No). There are 'Attach Document' and 'Browse...' buttons, and a 'Save Application' button at the bottom.

Exhibit B

The screenshot shows the USDA Electronic Plant Variety Protection (EPVP) System application form. The user is logged in as 'Internal User: Monsanto Technology, LLC' and 'Marymar Buttrille'. The application is for 'Monsanto Technology, LLC' and 'Marymar Buttrille'. The form is titled 'ST470 - Application for Plant Variety Protection Certificate'. The user is currently on 'Exhibit B - Statement of Distinctness'. The form includes fields for 'Experimental Name', 'Variety Name', and 'Crop Year'. The main section contains five numbered questions: 1. Based on overall morphology, Applicant's new variety is most similar to Comparison Variety 1. Applicant's new variety most clearly differs from the comparison variety in the following traits, name the specific trait below and enter the value for that trait. Submit appropriate supporting evidence (see the Guidelines for Providing Evidence in Support of Variety Distinctness in the instructions). 2. Application Variety Traits. 3. Comparison Variety 1 Additional Comments. 4. Comparison Variety 2 Additional Comments. 5. Comparison Variety 3 Additional Comments. There are 'Attach Document' and 'Browse...' buttons, and a 'Save Application' button at the bottom.

Exhibit C

USDA United States Department of Agriculture Electronic Plant Variety Protection (EPVP) System
 Internal User: Bernadette Thomas Marymar Buttrille

ST470 - Application for Plant Variety Protection Certificate

Monsanto Technology, LLC Marymar Buttrille

Experimental Name: _____
 Variety Name: _____
 Crop Kind: Barley

ST-470 Main Exhibit A Exhibit B Exhibit C Exhibit D Exhibit E

Barley

A. GROWTH HABIT
 1. Growth Habit
 2. Early Growth
 3. Late Growth

B. MATURITY (50% Flowering)
 1. Maturity Class

C. PLANT HEIGHT (Height From Soil Level to Top of Head)
 1. Plant Height at Anthesis
 2. Plant Height at Maturity

D. STEM
 1. Section (Flag to Spike at Anthesis)
 2. Stem Architecture
 3. No. of Heads (Emerging from Node Above Ground)
 4. Color (Green)
 5. Shape of Head
 6. Shape of Neck

E. LEAF
 1. Best Leaf Sheath Pubescence (Seedling)
 2. Position of Flag Leaf (At Boot Stage)
 3. Leaf Anthesis
 4. Area Width (From Leaf Below Flag Leaf)
 5. Leaf Length (From Leaf Below Flag Leaf)
 6. Anthesis to Leaf Sheath

F. HEAD
 1. Head Type
 2. Head Density
 3. Head Shape
 4. Head Structure
 5. Length of Head
 6. Beak (Yes or No)
 7. Beak Length

Could not capture the entire Exhibit C form in one snapshot.

Exhibit D

USDA United States Department of Agriculture Electronic Plant Variety Protection (EPVP) System
 Internal User: Bernadette Thomas Marymar Buttrille

ST470 - Application for Plant Variety Protection Certificate

Monsanto Technology, LLC Marymar Buttrille

Experimental Name: _____
 Variety Name: _____
 Crop Kind: Barley

ST-470 Main Exhibit A Exhibit B Exhibit C Exhibit D Exhibit E

Exhibit D - Additional Descriptive Information

1. Please enter the additional descriptive question / text in the box below :
 Please enter additional descriptive answer / information in detail in the box below :

Attach Document

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Exhibit E

USDA United States Department of Agriculture Electronic Plant Variety Protection (EPVP) System
 Internal User: Bernadette Thomas Marymar Buttrille

ST470 - Application for Plant Variety Protection Certificate

Monsanto Technology, LLC Marymar Buttrille

Experimental Name: _____
 Variety Name: _____
 Crop Kind: Barley

ST-470 Main Exhibit A Exhibit B Exhibit C Exhibit D Exhibit E

Exhibit E - Statement of the Basis of Ownership

1. Does the applicant own all rights to the variety?
 Yes No

2. Is the applicant a U.S. national or a U.S. based entity?
 Yes No

3. Is the applicant the original owner?
 Yes No

4. Additional explanation on ownership (Trace ownership from original breeder to current owner):

PLEASE NOTE:
 Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

- If the rights to the variety are owned by the original breeder, that breeder must be a U.S. national, national of a USPO member country, or national of a country which affords similar protection to nationals of the U.S., for the same genus and species.
- If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a USPO member country, or owned by nationals of a country which affords similar protection to nationals of the U.S., for the same genus and species.
- If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41UJ(2) of the Plant Variety Protection Act for definitions.

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Pay Fees page contain a list of applications that require fee payments. You select from that list and Continue to the pay.gov section.

Pay.gov – the user is redirected to a page in pay.gov. The only information is returned to epvp is the information on the image below which is stored in the CRM part of the system.

APPLICATION FEE : INFORMATION

Application Fee

General

Name *	Application Fee		
ST-470 *	BEAN Application from Syngenta Participations AG : 201900009		
Payment Status	Paid		
Fee	--		
Amount Due	--	Due Date	--
Amount Paid	\$4,382.00	Authorization Code	--
Late Fee (if any)	--	Transaction Number	2019PV0013
Paid By	Leah Houg	Pay.Gov Reference N	26D70H17
Paid Date	10/30/2018 8:00 AM	Check Doc Number	--
Comments	--		

Workplace

ST 470 with DropDown sections

The screenshot shows the Microsoft Dynamics CRM interface for a specific application. The browser address bar shows the URL: <http://amsdccc38bdc0p/PVPD/main.aspx#86287576>. The page title is "AMS Plant Variety Protection Online Payment" and the current record is "ST-470: BARL Application fr...".

The main content area displays "ST-470: INFORMATION" and "BARL Application from Highland Speci...". It includes a table with the following data:

For Official Use Only		PVP Number	Filing Date	Assigned To*
PVP Number	201600111	201600111	3/2/2016	Mark Hameling
Parent PVP Number if different	201600111	Filing Date	3/2/2016	
Submitted by*	Michael McKay	Issue PVP Inquiry?	No	
Assigned To*	Mark Hameling	Variety Name *	Oreana	
Application Status	I	Created On	3/2/2016	

Below the table, there are two sections: "Z - Certificate Expired" and "F1 - Certificate Withdrawn or Voluntarily Abandoned".

On the left side, there is a navigation menu with the following items: Applicant Details, Application Fees, Crop Information, PVACNT, Application Status History, Exhibit A, Exhibit B, Exhibit C, Exhibit D, Exhibit E, Request for Information, Search, and Notes.

At the bottom of the page, it shows "Modified By: Bernadette Thomas" and "Modified On: 10/31/2018 3:07 PM". The status bar at the very bottom indicates "Active" and a zoom level of "75%".

Exhibit C crop data from Portal submission

SAVE SAVE & CLOSE NEW DEACTIVATE DELETE EMAIL A LINK RUN WORKFLOW

EDHBIT C - CROP DATA - INFORMATION

Exhibit C

General

Name: **Exhibit C**

ST 470: **BARL Application from Highland Specialty Grains, Inc., 201600111** External User: **--**

Created On: **3/15/2017 4:47 PM** Modified On: **3/15/2017 4:47 PM**

Survey Status: **Work in Progress** Exhibit C Survey: **Barley**

Sufficiently describe: **--**

Crop Data

Question	Name	Text Answer	Exhibit C	ST 470 (Exhibit C)	Answer Type	Created On
Erection (Flag to Spike at Maturity)	00-00m	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
No. of Nodes (Originating from No.)	04	2	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Glume Length	1/2 of Lemma	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Stem Antrorrhynch	Absent	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Antrorrhynch in Leaf Sheath	Absent	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Lemma Hair	Absent	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Hairs on Venter Furrow	Absent	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Leaf Hairiness	Absent (Glumes)	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Head Hairiness	Absent (Glumes)	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Primary Use	Animal Feed	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Color Shape	Closed	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
cm Length (First Leaf Below Flag L.)	cm Length (First Leaf Below Flag L.)	25	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Colopelte Elongation	Colopelte Elongation	Champion	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Aleurone Color	Colorless (leukia or yellow)	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Glume Hair Covering	Completely Covered	6	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Seed Type	Covered	2	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Glume Awn Length	Equal to Length of Glume	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Head Density	Erect (dense)	1	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM
Primary Use	Feed (animal)	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	7/25/2016 7:57 AM
Rachis (Hair on Edge)	Few	3	Exhibit C	BARL Application from Highland Specialty Grains, Inc.,	Text	3/15/2017 4:47 PM

1 - 20 of 79 Page 1

Notes

Status: **Active**

ST 470 Application information from Portal data entry

SAVE SAVE & CLOSE NEW DEACTIVATE ADD TO QUEUE QUEUE ITEM DETAILS SHARE SECURED FIELDS

ST-470 : INFORMATION

BARL Application from Highland Specialty Grains,...

PVPO Number: **201600111** Filing Date: **3/2/2016** Assigned To: **Mark Herm**

Crop Information

Crop Kind: **BARL** Genus and Species: **Hordeum vulgare L.**

Variety Name: **Oreana** All Crops - Common: **BARLEY**

Family Name (Botan): **Poaceae** Capacity or Title: **N**

First Generation Hyb: **No** Temporary Designat: **E2509-448 TR12735**

Sold Only as a Class: **No** Declaration Agreed: **No**

Does the Variety Co: **No**

Seed of This Variety be Limited as to Number of Classes

Seed is Limited as to: **No**

Seed is Limited as to Number of Generations?

Seed is Limited as to: **No**

Has the Variety or a Hybrid Produced from This Variety been Sold, Disposed of, Transferred, or Used?

Was Sold, Disposed: **No**

Protected by Intellectual Property Right (Plant Breeder's Right or Patent)

Breeder's Right or P: **Yes**

Description: **Plant Breeders Rights Canada: March 5, 2015, 15-8337
United States Patent Application: December 16, 2015, App. No. 14/971,905**

DVA/CNT