

Chapter 12

Patents and Technology Transfer

This chapter covers the ARS guidelines set forth for reporting inventions; obtaining patents and Plant Variety Protection Certificates; licensing; and distribution of license income (including awards to inventors). Technology Transfer Agreements with ARS provide access to research information and assist in the development and commercialization of new knowledge and technology.

Acronyms: See [Chapter 22](#) for a comprehensive list of commonly used acronyms.

References: [P&P 141.2](#) – Technology Transfer in ARS
[P&P 324.0](#) – Reimbursable and Trust Fund Agreements
[P&P 601.2](#) – Transfer of Biological Agents and Related Information to Non-USDA Locations and Individuals
[NPA-PM 03-003](#) – Use of High Consequence Livestock Pathogens and Toxins, Listed Plant Pathogens and Select Agents and Toxins
[NPA-PM 05-003](#) – Submission of ARS Plant Material Release Notices
Partnering – Technology Transfer Offices Brochure
Booklet – Patents in ARS, A Plain Language Guide

Cross References: [Chapter 16](#) – Agricultural Research Information System (ARIS)

Web Sites: **Program Aid 1706: Forming Partnerships with the Agricultural Research Service**
<http://www.ars.usda.gov/is/np/formingpartnerships>
USDA-ARS Partnering
www.ars.usda.gov/business

Attachment 1: Instrument Selection
Attachment 2: CRADA Review Procedures
Attachment 3: ARIS Instructions Plant Material Docket 03-04-10
Attachment 4: ARIS Template Plant Material Docket
Attachment 5: ARIS Example Disclosure
Attachment 6: ARIS Example Invention

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TECHNOLOGY TRANSFER IN ARS

The role of a government scientist has experienced a significant change in the past decade. Historically, expectations were often limited to publication and the exchange of technical information among peers. With the advent of the Technology Transfer Act in the mid 1980's, the goals of federal research programs began a fundamental shift toward the development of tangible benefit for the public.

In this new environment, emphasis has now been placed upon the scientist to create interactive relationships with corporate counterparts, where their research supports such. The thinking is that in many cases the public will not directly (and measurably) benefit from federal research without an industrial champion who will carry the beginning technology through the stages of refinement and marketing, for which the federal lab is both ill-equipped and does not possess an accepted mandate.

IMPACT

At the agency level the goals of technology transfer manifest themselves to the scientist in the form of the RPES, wherein it is requisite that the researchers show the "impact" of their work. Several "tools of the trade" in the technology transfer process are useful in substantiating this "impact" for the scientist. These include patents, licenses, and Cooperative Research and Development Agreements (CRADA's).

Through the experience of the last several years, it has been found that pickup of Agency developments by the corporate sector is critical in order to bring about maximal public use and benefit.

PATENT PROCESSING PROCEDURES

Generally, it is ARS policy not to delay public release of research results because of patents. Instead, scientists are urged to notify Patent Advisors (PA's) of potentially patentable inventions and discoveries at the time they are recognized and preferably no later than when manuscripts are prepared for peer review. This generally allows time for the patent to be filed at the U.S. Patent and Trademark Office before the publication becomes (in patent parlance) a statutory bar.

Refer to "Patents in ARS, A Plain Language Guide," revised October 1997, for general information on patenting in ARS and Directive 141.2, "Technology Transfer in ARS," for important details.

The formal process begins with an Invention-Patent Docket Disclosure Report (IR) which is submitted electronically on the Agricultural Research Service Licenses/Inventions module in ARIS. The IR proceeds electronically through line management clearance procedures. Send an e-mail to the Area Extramural Agreements Specialist for alert to process file in ARIS Licenses/Inventions.

The IR should be submitted as early in the research progress as possible, preferably no later than when a formal scientific manuscript reporting the relevant research has been prepared. The requirement remains that prior to submitting the manuscript to a journal an ARS-115 must be entered into ARIS with the appropriate patent coding as well as the IR.

It is important to remember that as a separate act, a hard copy of the IR must be printed, signed and dated by inventor(s), witnessed (signed and dated), and forwarded immediately to your Area Patent Advisor (PA), address on front page.

Inventors are encouraged to conduct a literature search including both domestic and foreign patents before preparing the IR and, if possible, forward it to the PA with a statement as to how the invention is different from the most relevant known technology and that technology found during the search.

PATENT CLEARANCE PROCEDURES

The Agency decision process with regard to patents is as follows:

1. Scientists should notify their RL, Technology Transfer Coordinator (TTC), and PA as soon as possible after they achieve what they believe to be a patentable invention. While domestic rights are available for one year after a scientist's own disclosing publication, foreign rights for the same invention are less instantaneously with disclosure, whether oral or written.
2. If the RL, TTC, and PA agree that a patentable invention may have been achieved, the PA will request a formal IR and such other written documentation as may be appropriate. The IR, upon entry in ARIS, is electronically forwarded through the Research Leader and Center Director to the PA.
3. If after reviewing the information provided, the PA still believes the research achievement may be patentable, the PA will put it on the agenda for the next appropriate Patent Committee (PC) meeting. In urgent cases, the PA may distribute the information immediately to the members of the PC and then poll them by telephone for a recommendation. Another alternative is to request that one of the other Patent Committees meeting earlier be asked to handle the urgent case. The PA will place each case in one of three categories: APPROVED (recommended for filing a patent application); DEFERRED (to be held until one or more deficiencies are met); or SUSPENDED (recommended for publication in lieu of patenting).
4. After the PC meeting or polling by telephone, the PA will place inventions recommended for patents on the IR docket and send the Area Director (AD) and Inventor(s) a report of the PC's recommendations and each IR under the AD's jurisdiction.
5. No action is required by an AD who agrees with the recommendations of the PC. If the AD disagrees with any of the recommendations, the AD should contact the Assistant Administrator, OTT (name and address on front). Additional information will be requested, as needed, e.g., from the appropriate NPS members, to make a final decision.

6. When a PA sends a completed patent application forward to the USDA patent attorney for filing in the U.S. Patent and Trademark Office, a copy of the transmittal memo should be sent to the AD of each inventor. After a serial number is assigned to the application (usually 6-8 weeks later), a copy of the application will be forwarded to the AD.

PENDING CASES FOR PATENT COMMITTEE MEETING

Patent Committee meetings are now scheduled on approximately a quarterly basis, with one meeting a year done in person and the others handled through telephonic conferencing. Cases needing speedy review may be transferred to another committee or handled on an ad hoc basis.

The following criteria are used by the Patent Committees in assisting PA in evaluating invention reports:

1. Is there current commercial interest in the invention or a high probability of commercialization in the future?
2. Is the magnitude of the market relative to the costs of commercialization large enough to warrant a patent?
3. Would the patent likely play a significant role in transferring the technology to the user beyond what could be achieved through publication?
4. Would a patent on this invention be enforceable, i.e., is the invention drawn to, or does it employ, a unique and readily identifiable material or device which could be bought or sold?
5. Is the invention of sufficient scope to justify patenting?

PATENT LICENSING

ARS no longer favors royalty-free license arrangements. Only those ARS patents licensed previously as domestic, non-exclusive royalty-free and where the licensee is active will be maintained as such until the patent expires or the license is terminated. It has been proven that inventions made available freely to all have been used by only a few.

As a general policy, all patents will be licensed on a fee-bearing basis with some form of an incentive to exclusivity to assure product availability to the public. Patents involving technologies where the industry investment is minimal are sometimes considered on a non-exclusive basis.

ARS inventors will be contacted as a source of expertise by the Agency licensing team when patents are being considered for licensing. Inventors, however, are not allowed to participate in the negotiation process to avoid conflict of interest issues.

License application forms are maintained and distributed to industry by the License Coordinator and Technology Transfer Coordinators. ARS strives to negotiate fair licensing terms and conditions, considering both the interest of the U.S. Government in promoting commercialization of Federal research results and the need to provide a proper reward to the inventor(s)

PATENT LICENSE AWARDS

ARS Inventors of a given invention collectively receive the first \$2,000 of any licensing fee and 25 percent of the Agency's share of license income up to a maximum of \$150,000 per inventor per year. In situations with multiple inventors, the income is shared equally.

CONFIDENTIALITY AGREEMENTS

<http://www.ars.usda.gov/business/docs.htm?docid=771&page=3>

It is important for the scientist to realize that a potential cooperator needs to be given sufficient information so that they can make an informed decision as to whether or not a particular technology is for them. The Confidentiality Agreement, in addition to protecting potential patent rights, should give the scientist a measure of comfort in knowing that by sharing early information, others won't run off with it and either misrepresent it or claim it as their own. The Confidentiality Agreement does not however create an obligation for the scientist to "tell all." Sometimes being "coy" with critical details is desirable - they may not be necessary for a sound business decision and, if the arrangement breaks down, it is preferable that the party not know enough so as to successfully engineer around our technology.

Copies of the agreement may be obtained from your TTC. The TTC will prepare the agreement and send it to the scientist for signature. Any full time scientist or engineer may sign this agreement. If a company provides an ARS scientist or engineer with the company's confidentiality agreement, it must be reviewed and approved by the Area Technology Transfer Office before it is signed.

MATERIAL TRANSFER AGREEMENTS (MTA)

<http://www.ars.usda.gov/business/docs.htm?docid=771&page=2>

In some situations, the exchange of information may include the transfer of material from one party to the other. For these instances, another form of document has been created - the Material Transfer Agreement. This document states that whatever materials that are transferred must be destroyed and/or returned upon completion of their testing and that no commercial usage may be made of them without permission by the Agency. There are special restrictions regarding the transfer of pathogenic organisms to non-USDA institutions. Contact your TTC to obtain a MTA.

Agricultural Research Service (ARS) employees frequently receive or send research materials to universities or private companies in the course of their work. Usually requests are made by research scientists, but requests may also involve technical and administrative support personnel. If the

materials are patented or could be at some future date, the sender will often require that the recipient sign an acceptance statement, sometimes called a Material Transfer Agreement (MTA).

Many institutions, both private and public sector, use Material Transfer Agreements to limit use of the material to the specific research at hand and also claim ownership of improvements made during the research. One purpose of a MTA is to convey to the recipient of the materials that, if the material is patented, a license will be needed for commercial development of the technology. The difficulty encountered in exchanging materials between university scientists is described in Science Vol. 278, page 212, 10 October 1997.

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

<http://www.ars.usda.gov/business/docs.htm?docid=771>

Directive 141.2 “Technology Transfer in ARS” furnishes policy guidelines and a sample agreement. These multi-page agreements are too lengthy to be included here, but copies may be obtained by calling the Area Technology Transfer Office.

AGRICULTURAL RESEARCH SERVICE

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT REVIEW PROCEDURES

Cooperative Research and Development Agreements (CRADAs) have provided a valuable mechanism to form partnerships with private sector organizations. This authority has allowed the rapid development and transfer of many Agricultural Research Service (ARS) discoveries to solve critical problems. The success of this program has also led to an examination of the procedures used to review and approve a CRADA and to assure that the public mission of ARS research is not altered through the partnership.

This document describes the current review procedure that is given to each CRADA before approval by ARS. Also, an additional review procedure is described to allow early identification of research areas requiring specific agency policy review. The roles of the ARS Office of Technology Transfer (OTT), National Program Staff (NPS), Area Directors (AD), and other line managers are described.

CRADA Review Procedures: The current ARS CRADA review and approval process involves NPS, AD, line management, and OTT. The ARS scientist and OTT Technology Transfer Coordinator (TTC) discuss the CRADA requirements and the proposed plan of research with the potential cooperator. The Unit Research Leader and or scientist, other line managers, and the NPS are first consulted to assure that the collaboration is appropriate to the approved research program and that sufficient resources are available to complete the planned research. This process occurs prior to entry of the incoming agreement into ARIS for CRADA project line management approval. CRADAs may or may not have incoming funds, but both partners must actively participate in the research. In addition to intellectual input and proprietary information, such participation may involve contributions of personnel, equipment, supplies, materials, facilities, etc. CRADAs cannot be used simply as a means to bring in outside funds, nor should they be used to test, develop, or validate a company's product. CRADAs are appropriate vehicles for 1) transfer and/or further development of ARS technology, 2) collaboration using the cooperator's intellectual property, or 3) merging of ARS discoveries with the cooperator's technology. CRADAs are developed by scientists and TTCs, approved by NPS, the AD, and line managers, and signed by OTT on behalf of ARS. Each CRADA also has documented approval by the incoming agreement project clearance procedures.

INFORMATION REQUIRED FOR REVIEW OF A CRADA:

- A. Title, Laboratory, Lead Scientists, Location, Proposed Cooperator.
- B. Summary of Proposed Research: A brief description describing the problem, research objectives, methods, etc.

C. Criteria to be considered when evaluating a CRADA:

1. How does the proposed research further the ARS mission?
2. What technology, expertise, financial resources, etc., would be contributed by the
cooperator?
3. What are the possible end products of the research?
4. How will the end products be used?

Instrument Selection Criteria Chart/Northern Plains Area, Extramural Agreements Section

Jim Quaratino, Authorized Departmental Officer
(970)492-7029 or jim.quaratino@ars.usda.gov

Marcie Currie-Gross, Extramural Agreements Specialist
(970)492-7022 or marcie.currie-gross@ars.usda.gov

	Purpose	Relationship/Benefit to ARS Programs	ARS Involvement during Performance
Use a Contract When:	Acquiring Service or Property	Direct Benefit/Use	No Involvement
Use a Project Grant When:	Transferring Anything of Value	To Support or Stimulate a Public Purpose	No Involvement
Use an Assistance Type Cooperative Agreement (ACTA) When:	Transferring Anything of Value	To Support or Stimulate a Public Purpose	Substantial Involvement
Use a Specific Cooperative Agreement (SCA) When:	ARS is Paying and Mutual Interest and Contributions toward Research Effort exists	Direct Benefit to ARS in-house research	Substantial Involvement
Use a Research Support Agreement (RSA) When:	Procuring Service/Supplies Directly from a College or University	Direct Benefit to ARS in-house research	Substantial Involvement
Use a Non-Funded Cooperative Agreement (NFCA) When:	Describing Research Work with No Obligation of Funds	Direct Benefit to ARS in-house research	Substantial Involvement
Use a Technology Transfer Cooperative Research and Development Agreement (CRADA) When:	Receiving Funds under Federal Technology Transfer Act	Direct Benefit to ARS in-house research	Substantial Involvement
Use a Reimbursable or Trust Fund Agreement When:	ARS Receives Funds to Perform Research Work	Direct Benefit to ARS in-house research	Substantial Involvement

Each project involving cooperation must be assessed individually to ascertain the agreement instrument most appropriate for the project.

Please contact Dr. Bryan Kaphammer for assistance related to Cooperative Research and Development Agreements CRADA's). bryan.kaphammer@ars.usda.gov or 970-492-7028.

April 11, 2000

SUBJECT: CRADA Review Procedures

TO: ARS Administrator's Council

FROM: Floyd P. Horn /s/ Floyd P. Horn Administrator

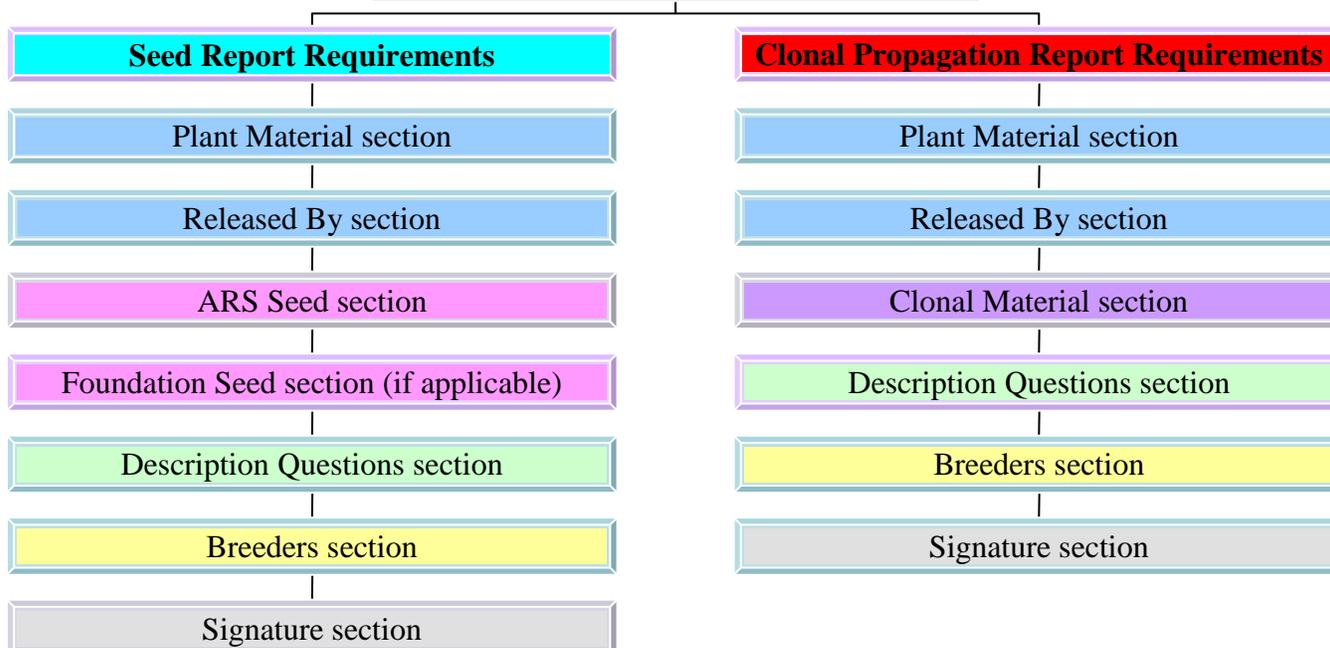
At the February meeting of the Administrator's Council, we discussed a proposal for the review of Cooperative Research and Development Agreements (CRADAs). Based on that discussion, the review procedures have been revised (see enclosure). Effective immediately, these procedures should be used for all CRADA documents.

The Office of Technology Transfer has the primary role in negotiating and assuring the timely review of these agreements. However, this can be accomplished with the active participation of ARS scientists, line managers, and the National Program Staff using the outlined procedures. The CRADA program has proven to be a successful mechanism to rapidly develop ARS discoveries into products benefiting agriculture. The CRADA Review Procedures will allow oversight of this process to assure that collaborative research fits within the public mission of the Agency's program.

Enclosure

cc: Technology Transfer Coordinators

Plant Material Docket (PMD) Decision Tree

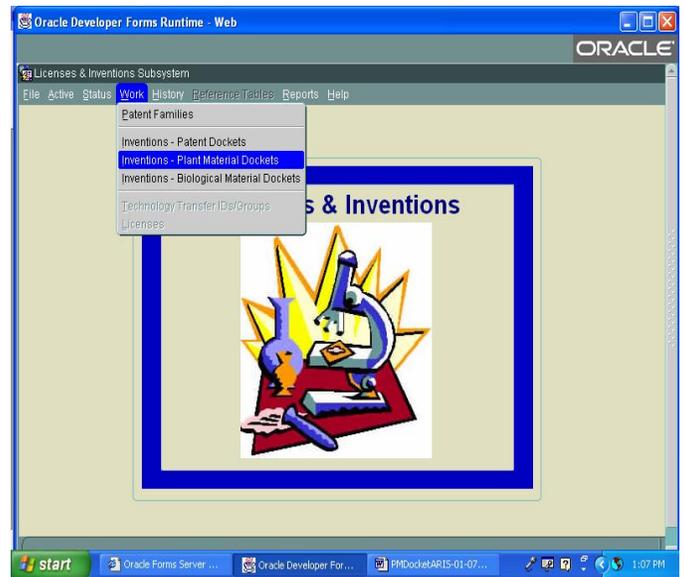


TIPS:

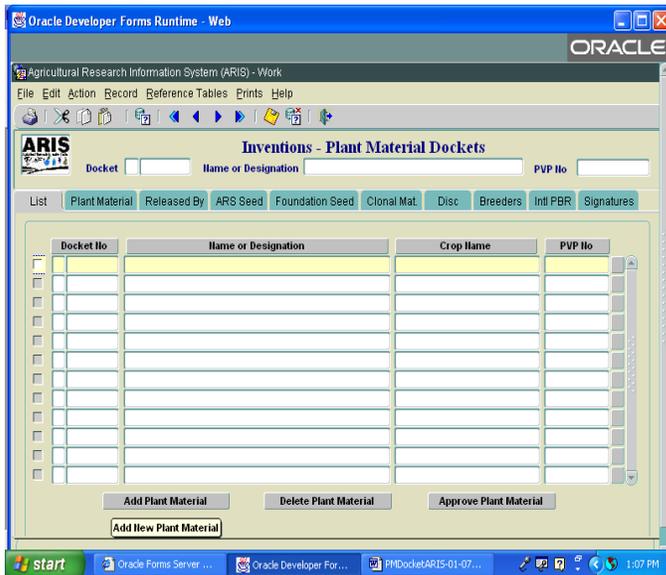
- Title, Phone and Fax numbers, and Email addresses are needed for all Breeders listed on a report.
- OTT will complete information related to Plant Variety Protection (PVP).
- Only one ARS employee may be designated as the Primary Contact.
- Question #6: List countries where there might an International market for the Plant Material; or if the Plant Material has been sent to a foreign country for testing or breeding.
- The Intl PBR section is restricted to HQ/OTT use. It does not apply to the response in Question #6.
- There is no line limitation to the responses for Questions 1 - 6; use the copy/paste feature of Word (Use Ctrl C (copy) and Ctrl V (paste), instead of the copy/paste icons in ARIS).
- Look for SAVE buttons at the bottom of some screens. The Save icon at the top of the screen will not work whenever there is a SAVE button located within a screen.
- Always highlight the line of information you want to select or delete. Check boxes do not exist for marking and defining selections (as in other ARIS modules).
- Use the View/Modify feature when changes are necessary within the different data components. The system does not allow for "unchecking" and "checking" once a selection is made (such as Primary Contact identification).
- Only one Project Number can be selected when filing a Plant Material Docket report.
- There are two data bases used for ARS employees: Current and Former. Select • Both when searching for an employee who may have recently retired from ARS. It takes time for employees to be revised from Active to Obsolete in the Personnel database, which is where the information is generated.



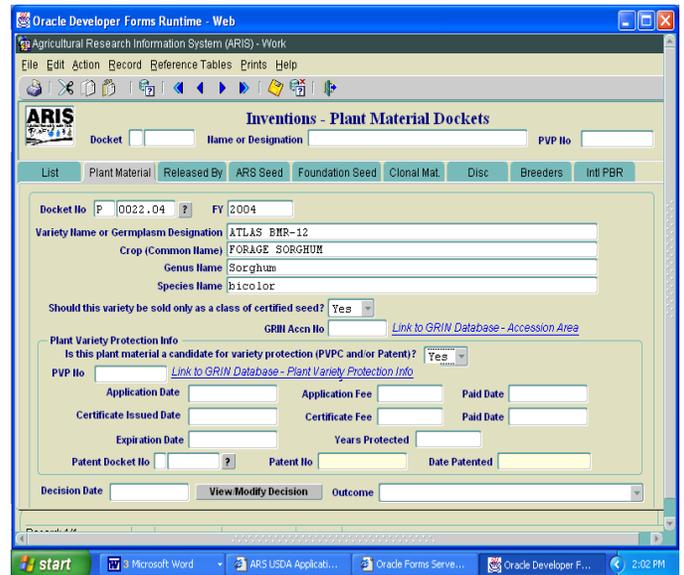
- Click on the **Licenses/Inventions** icon



- Select **Work**
- Select **Inventions-Plant Material Dockets**

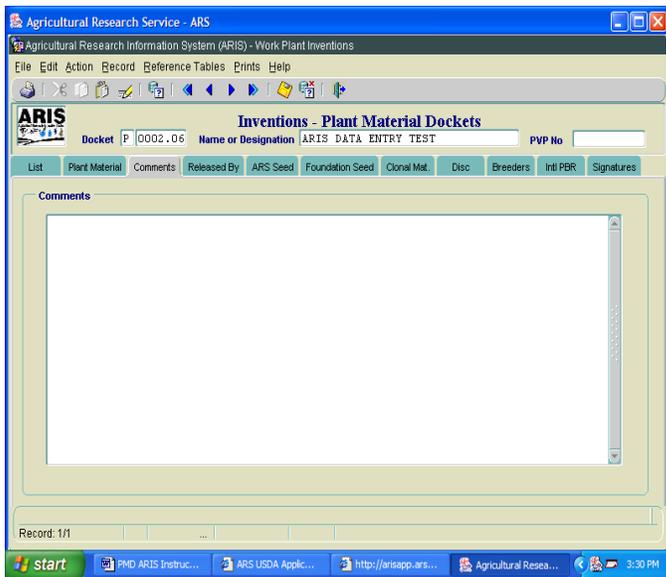


- Click the **Add Plant Material** button

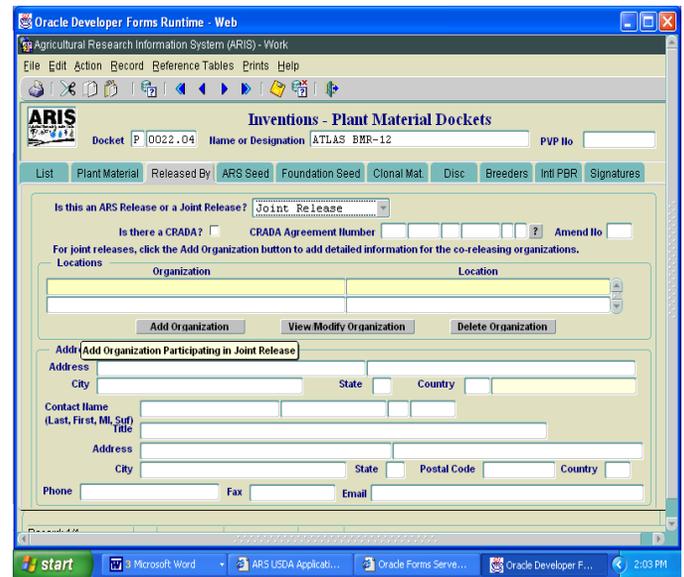


- Enter the Variety Name/Germplasm Designation, Crop (Common Name), Genus Name and Species Name
- **Certified Seed question:**
 - Click the ▼ button & Select Yes or No
- **Plant Variety Protection question:**
 - Click the ▼ button & Select Yes or No

- ◆ Docket No. and FY will automatically default into their respective blocks when the screen is saved
- ◆ OTT staff will complete the remaining data entry blocks in the Plant Variety Protection Info section



Use the Comments section for any special information or details not included elsewhere in the PMD. Use this section to relay information to the National Program Leader (NPL) or the OTT Staff.



ARS Release or Joint Release question:

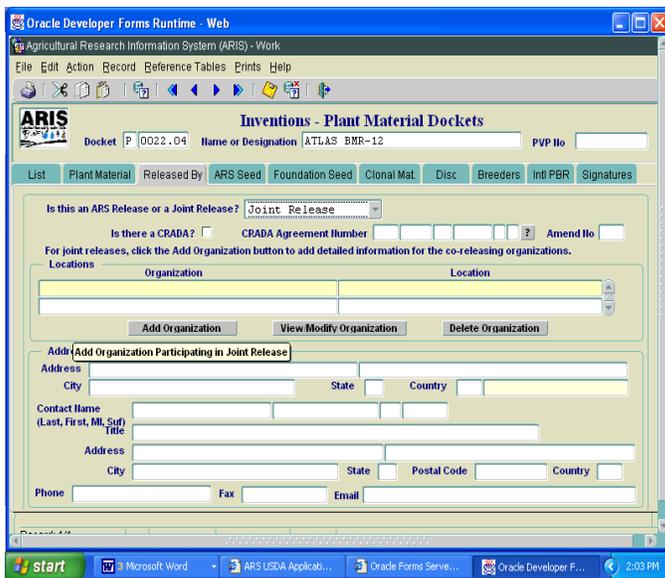
- Click the ▼ button & Select **ARS or Joint Release**

TIP: ARS Release/Joint Release is a required field; it cannot be blank.

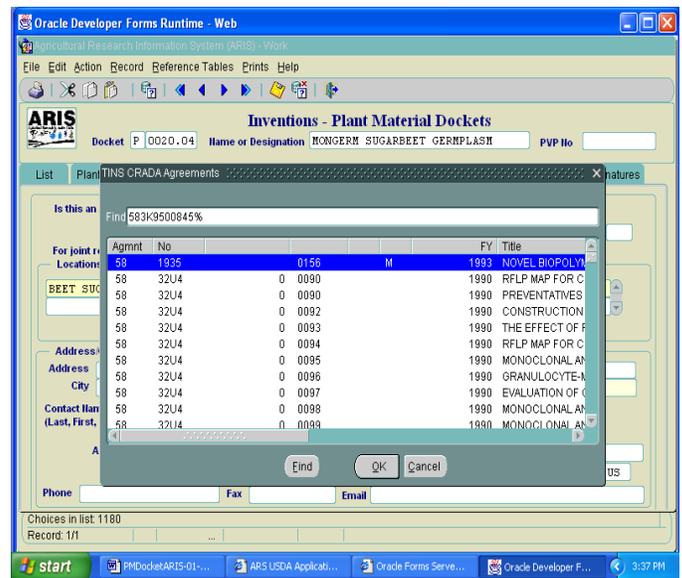
FOR AN ARS ONLY RELEASE:

- ◆ Select ARS Release and leave the remaining blocks on this screen empty.
- ◆ Click on the **ARS Seed** tab to continue (Go to Page 5 for the instructions when it is an ARS Only Release).

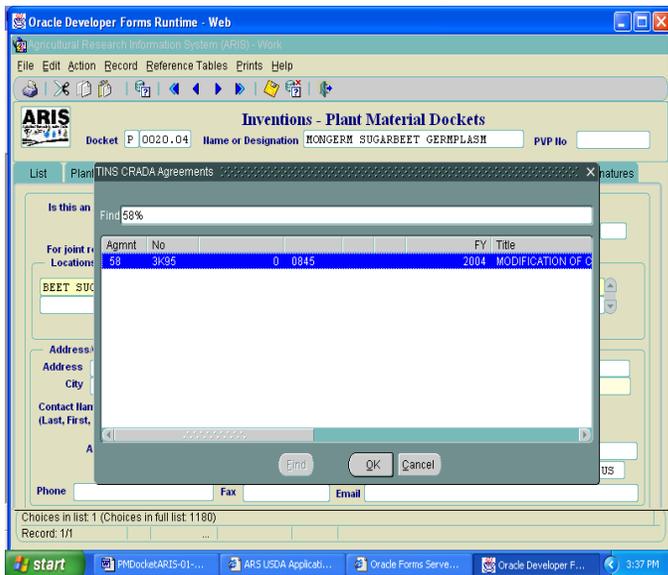
If the CRADA Agreement Number is not applicable, but it is a Joint Release: Go to Page 4 for the instructions.



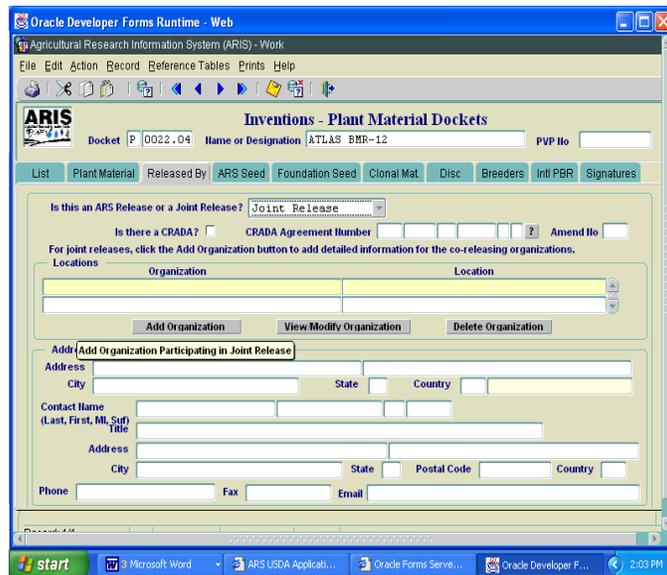
- Click the to enter a ✓ for Yes
- Click the **LOV ? button** to search for the CRADA Agreement Number



- Enter the CRADA Agreement Number in **front** of the **LOV % symbol** (do not use spaces or dashes)
- Click the **Find button** or hit the Enter key
- **TIP:** CRADA No. format = 583K95XXXX (the 58-3K95-X-xxxx is the standard numbering for CRADAs).

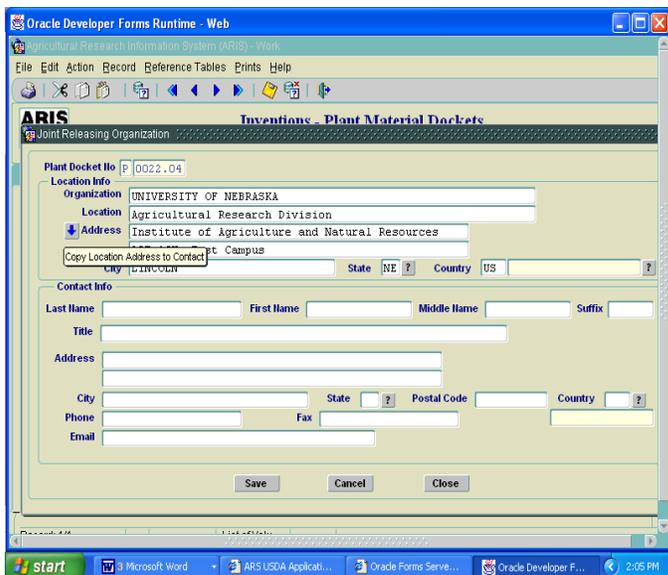


- The CRADA Agreement Number entered into the search block will appear (as shown above).
- Click the **OK** button

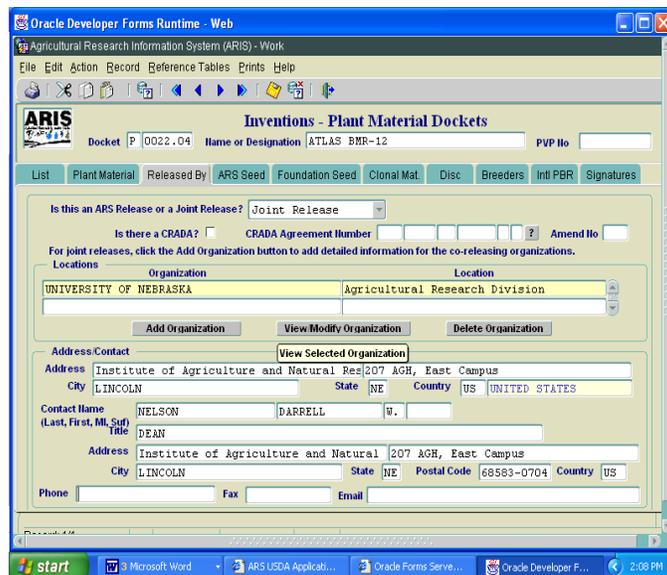


TIP: Joint Release Organization info in this section **must** be completed when a CRADA Agreement Number is entered.

- Click the **Add Organization** button (not used for ARS)

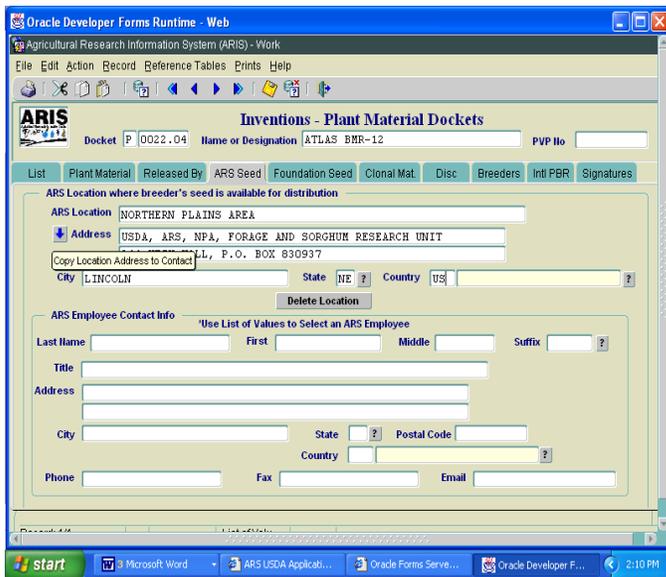


- Enter the Joint Release Org. info
- Click on the  button to left of the Address line in the upper part of the screen to copy the Address info into the Contact Info section in the lower part of the screen (it saves typing and reduces errors).
- Complete the Contact Info data entry by entering the Contact's Name, Title, Phone, Fax and Email
- Click on the **Save** button (don't click on the Close button until after the screen/data entry has been saved).

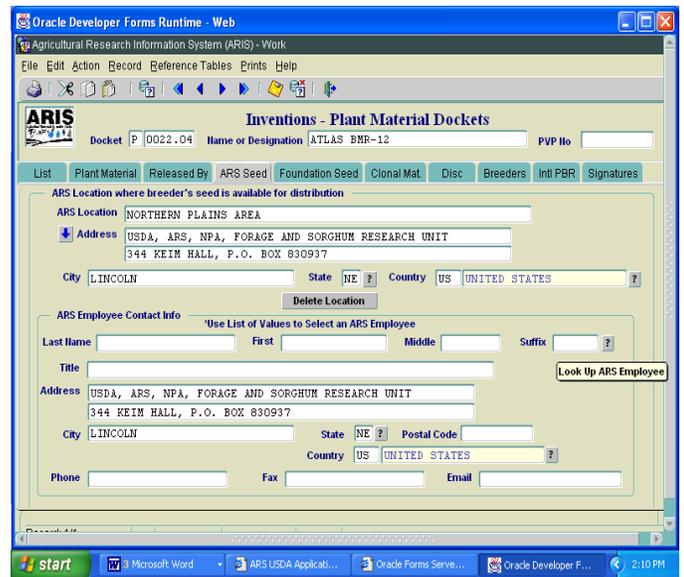


View/Modify Organization button: Allows for revisions or corrections to the information previously entered, such as adding phone and fax numbers or an Email address.

- Click the **View/Modify Organization** button if a revision is needed.
- Click the **Add Organization** button to add more than one entity participating in the joint release.



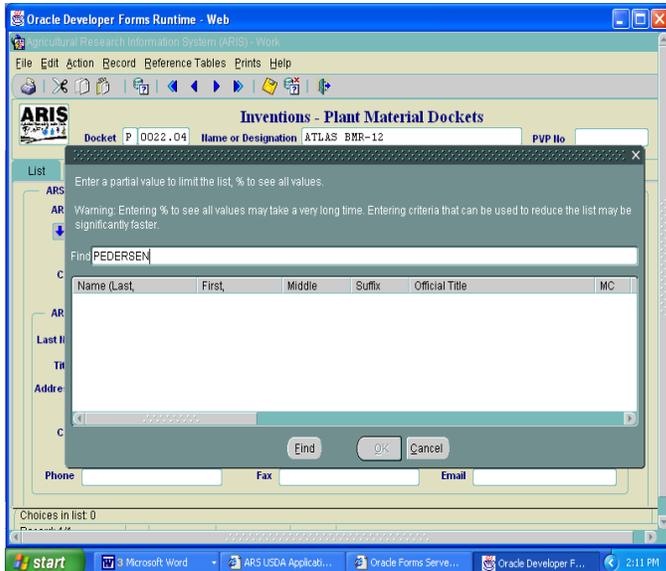
- Click the **ARS Seed** tab
- Enter the ARS Location, Address, City, State, Country information
- Click the **↓ Address** button to copy the Address info into the Contact Info section below. **TIP:** The address info will also pop into the blocks in the lower portion of the screen when the ARS Employee is selected via the **LOV ? button**).



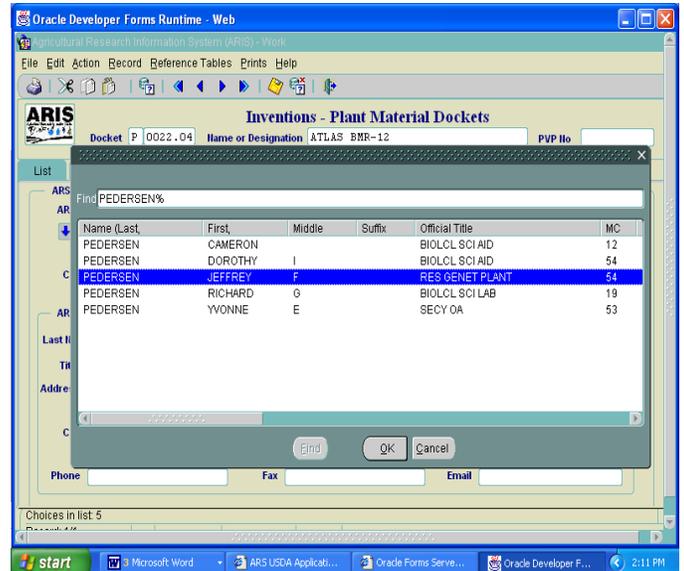
- Click the **LOV ? button** to search for the ARS employee who will be the Primary Contact for this release

TIP: Only one ARS employee may be designated and entered as the Primary Contact.

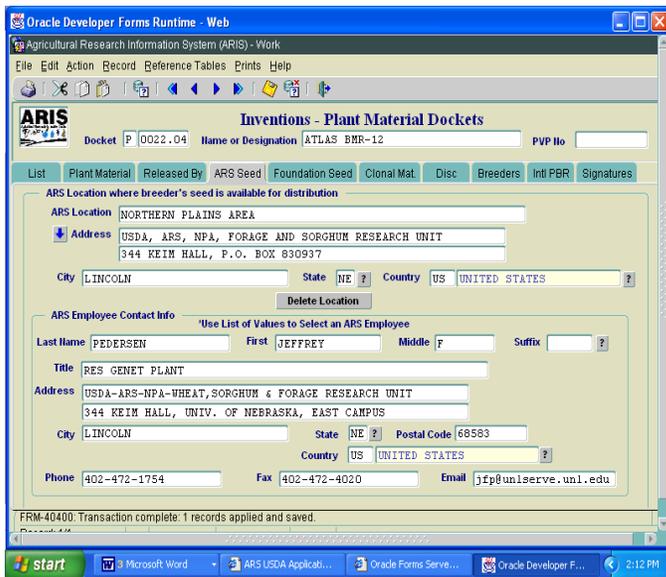
The LOV ? button must be used to identify the ARS employee. Attempting to manually enter the First/Last Name will result in an error message.



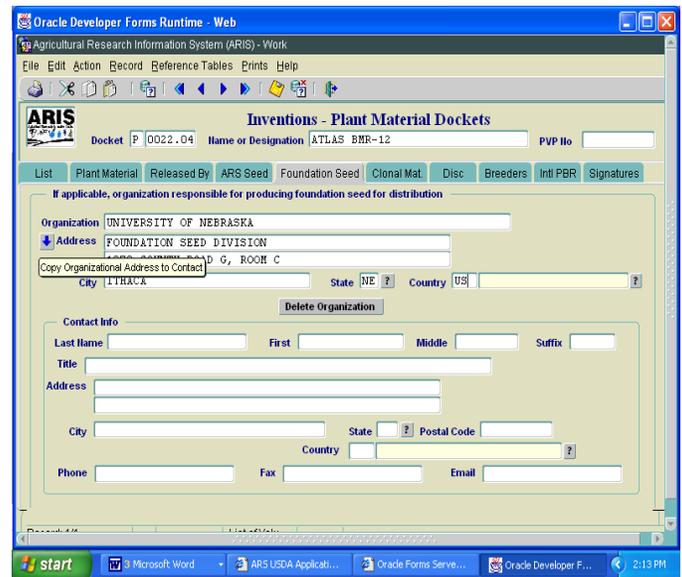
- Enter the Last Name of the ARS scientist in the **Find** line
- Click the **Find** button or hit the Enter key



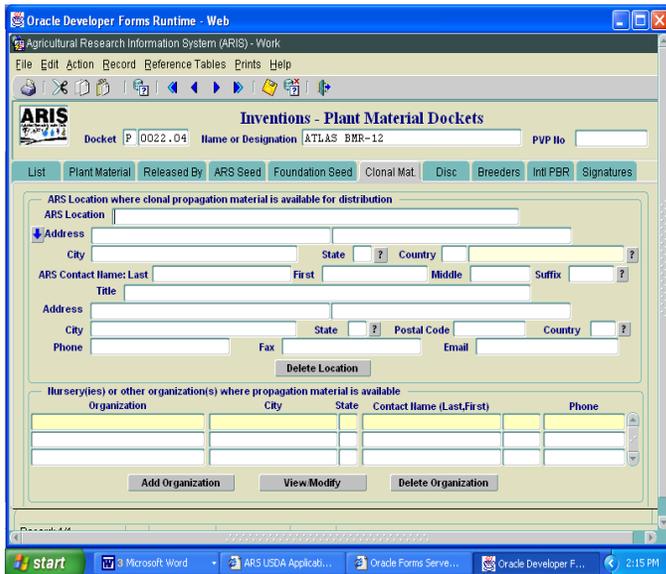
- **Highlight** the correct name
- Click the **OK** button



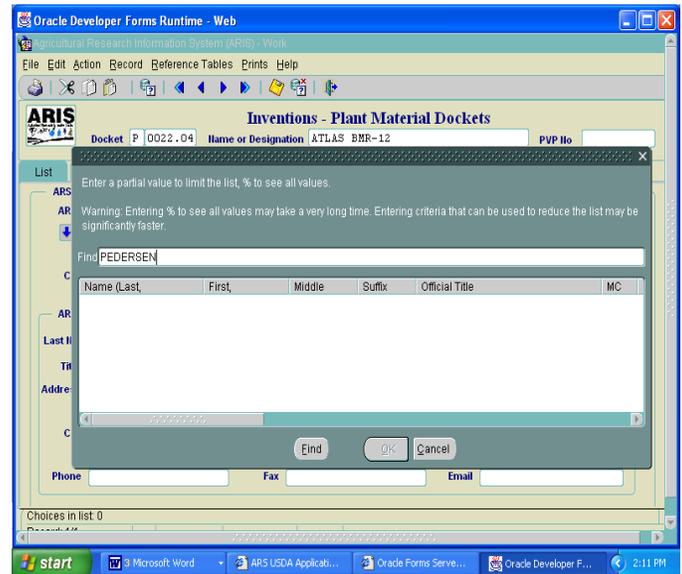
- Enter the Phone, Fax and Email information to complete the ARS Employee Contact Info section.
- Click the **SAVE icon**



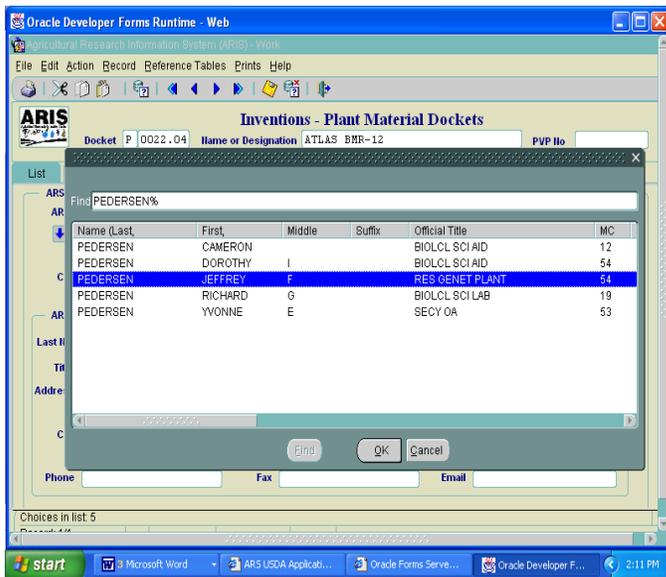
- Click the **Foundation Seed** tab
- Enter the Foundation Seed Organization Name, Address, City, State, Country info
- Click the ↓ to copy data into the Contact Info section.
- Complete the screen by entering the Name, Title, Phone, Fax, Email info for the Foundation Seed Contact



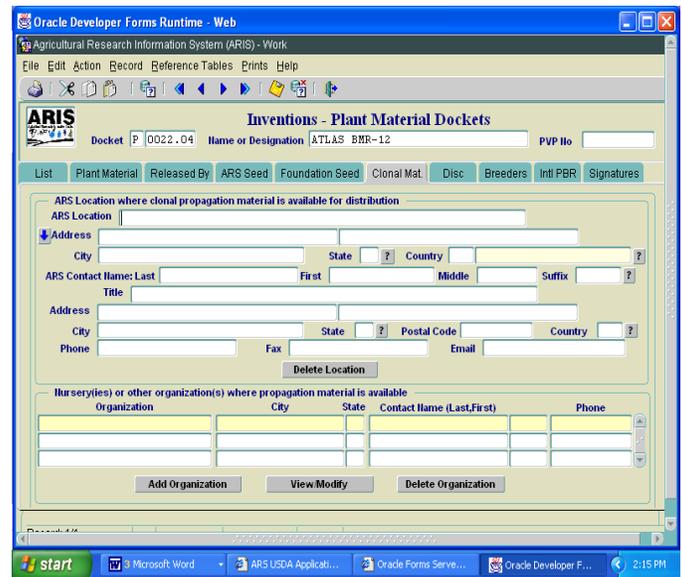
- Click the **Clonal Mat.** tab
- Enter the ARS Location, Address, City, State, Country
- Click the ↓ to copy the Address info into the Contact Info section (or complete the screen by identifying and selecting the ARS Contact (enter Phone, Fax, Email))
- Click on **LOV ?** button to search for the ARS Contact



- Enter the Last Name of the ARS scientist in the **Find** line
- Click the **Find** button or hit the Enter key



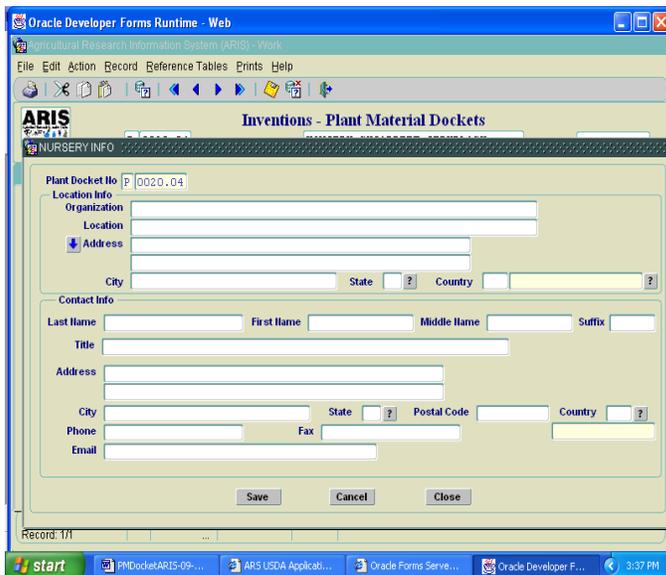
- Highlight the correct name
- Click the **OK** button



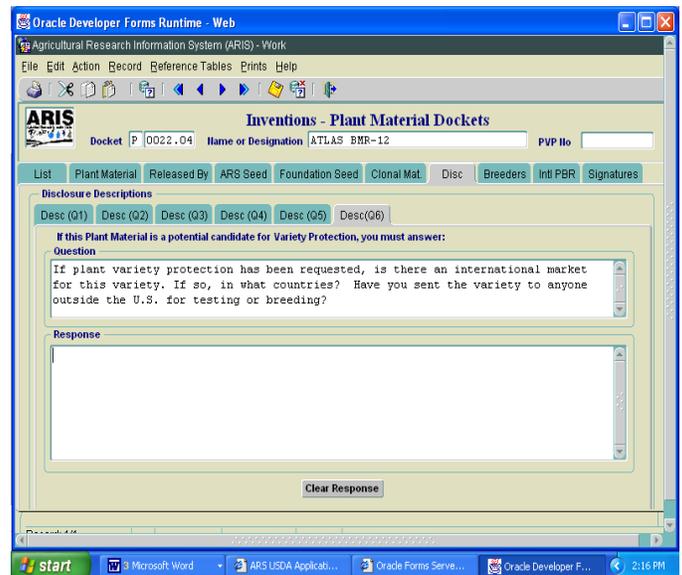
TIP: Complete the ARS Location section (top part of the screen) **ONLY** if ARS is holding the clonal propagation material.

If a nursery or other organization is holding the clonal propagation material: Complete the lower portion of this screen with their information.

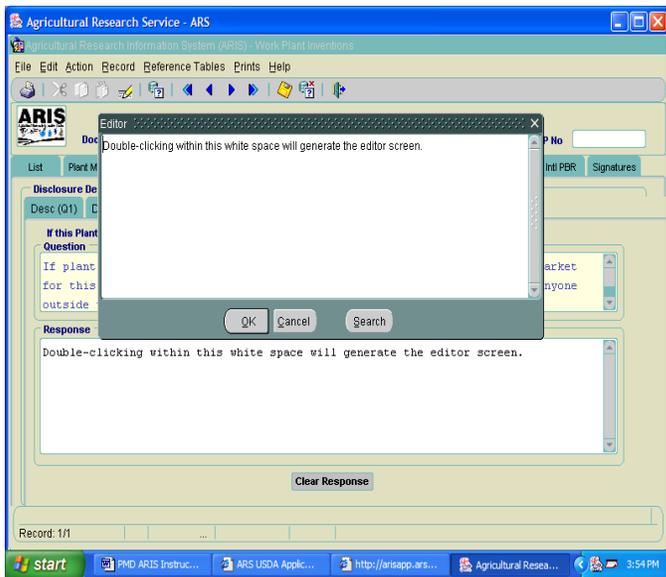
- Click the **Add Organization** button for a Non-ARS entry (nursery or other organization).



- Enter the non-ARS Nursery/Organization Name, Address, City, State, Country
- Click the ↓ to copy the information into the Contact Info section. Complete the screen by entering the Name, Title, Phone, Fax, Email info
- Click the **Save** button

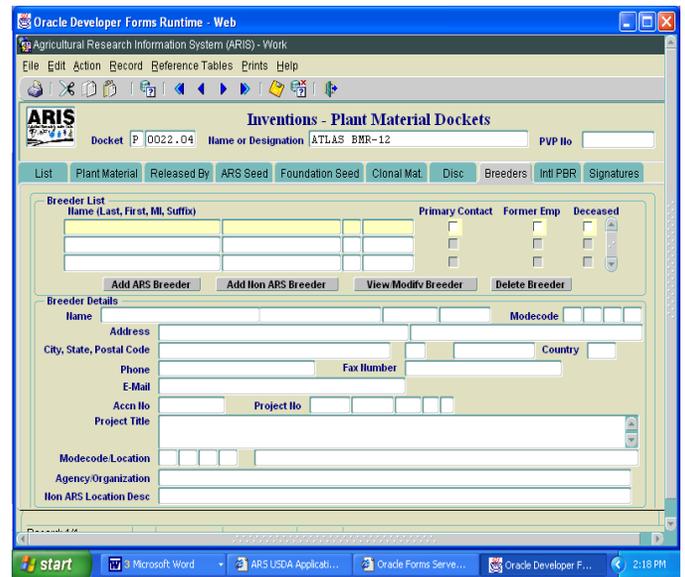


- Click the **Disc** tab & then click the **Desc (Q#)** tab to respond to each question
- Answer Questions 1-6 by using the Copy/Paste feature (Ctrl C/Ctrl V) from a Word document
- There is no line limitation in any of the response blocks
- Click the **Save icon** at the top of the screen after entering the response for each Question

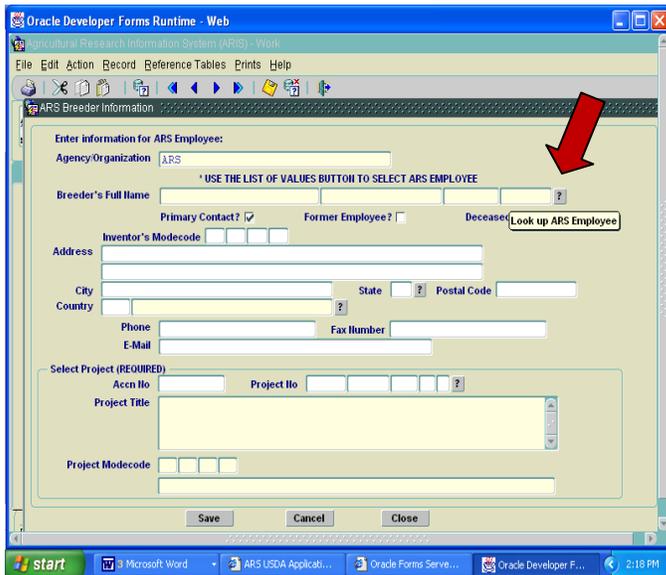


- **OPTIONAL:** Double-click within the white space to generate the Editor screen. Copy/Paste the response to the question.
- Click on the **OK** button to save the information.

TIP: Using the *Editor* feature in ARIS is always optional. Data can be typed into the response block (or use Ctrl C/Ctrl V to copy/paste from Word).

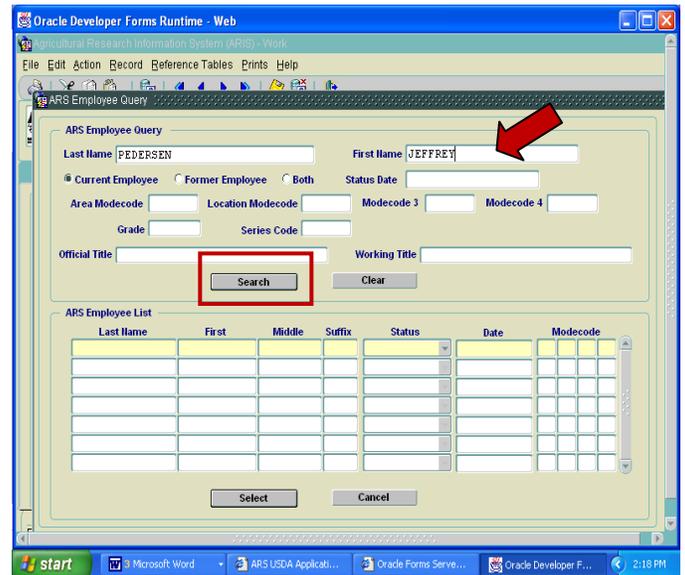


- Click the **Breeders** tab
- Click the **Add ARS Breeder** button



- Click the **LOV ?** button to the right of the **Breeder's Full Name** line to search for the Primary ARS Breeder to be identified and selected for entry.

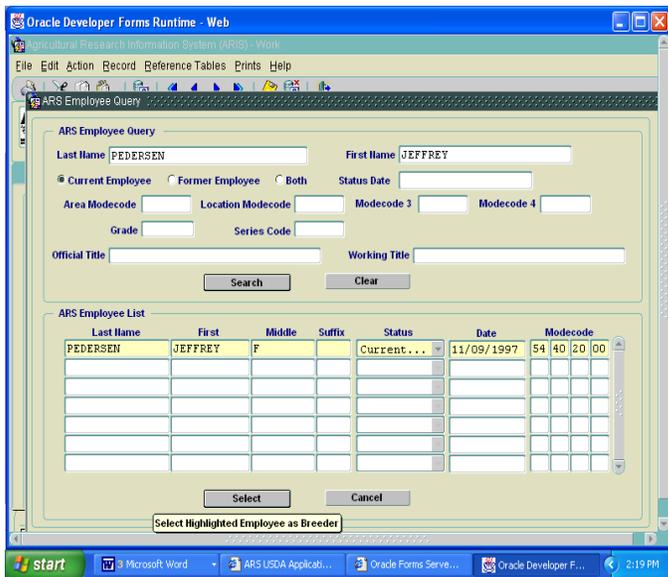
TIP: Don't try to select/enter anything else on this screen until the Breeder is selected. It's imperative that the step-by-step instructions be followed in order to obtain the correct data in the appropriate sequence.



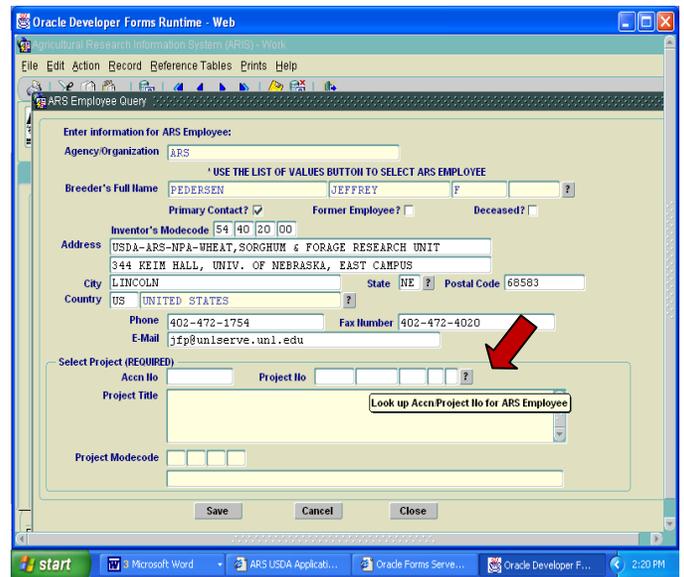
- Enter the Last Name and First Name
- Click the **Search** button

TIP: Selecting • Both will search for Current and Former employees.

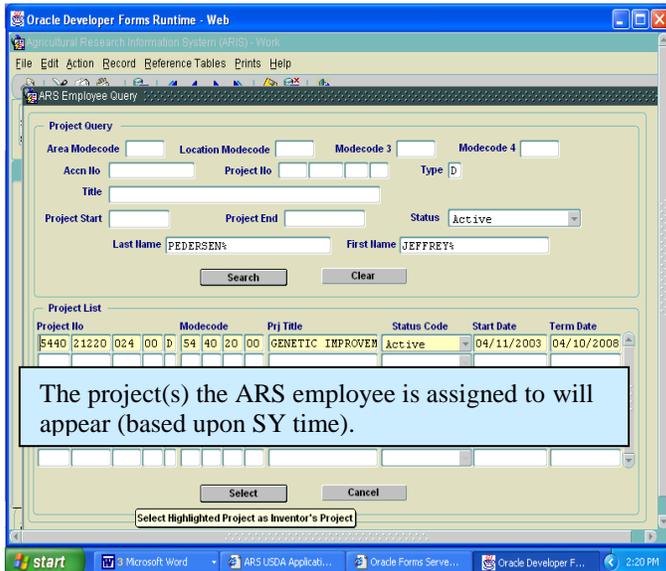
Using the Mode Code numbers, Grade, Series, Official Title, etc. is optional. The database search will work without that info.



- Highlight the employee
- Click the **Select** button

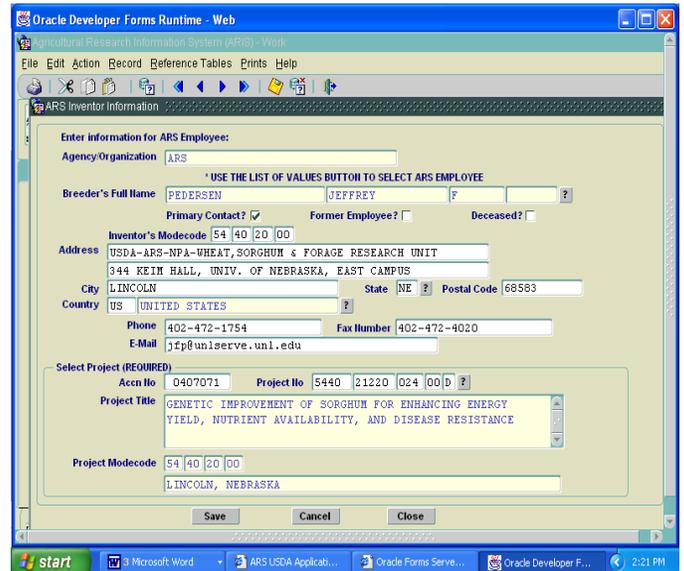


- Enter the ARS employee's Phone, Fax and Email
- Click the **LOV ?** button to the right of the Project No

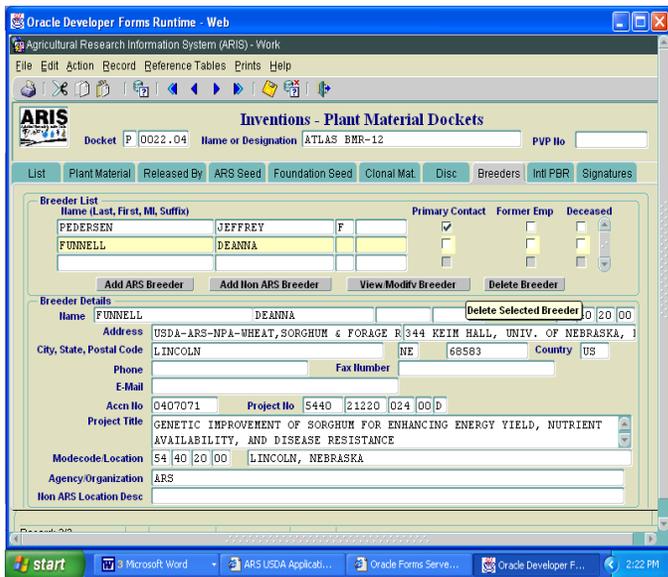


The project(s) the ARS employee is assigned to will appear (based upon SY time).

- Highlight the correct project
- Click the **Select** button

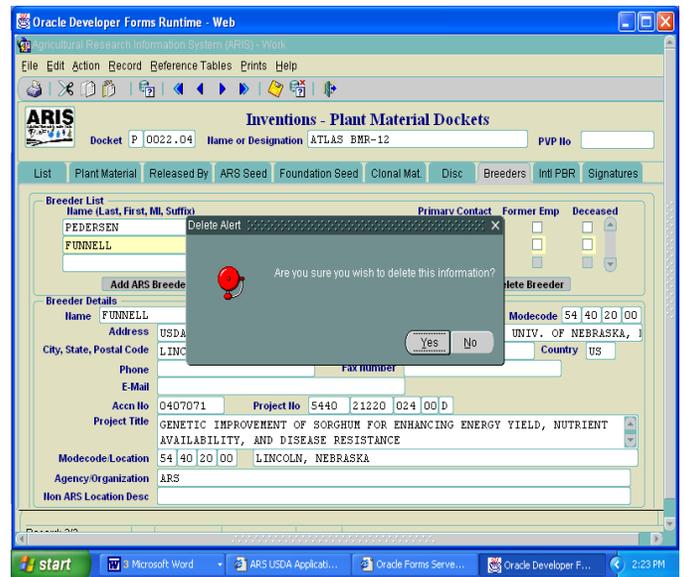


- Click the **Save** button
- Repeat the steps to add additional ARS breeders.



To Delete a Breeder entry:

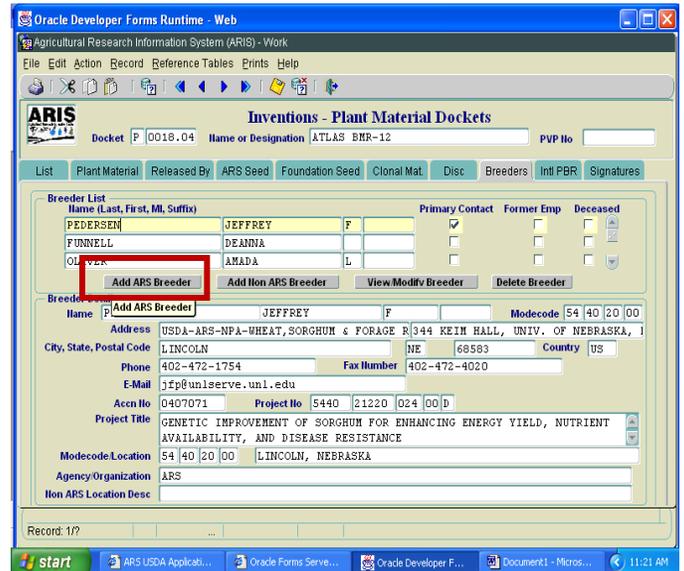
- Highlight the line/name of the Breeder to be deleted
- Click the **Delete Breeder** button



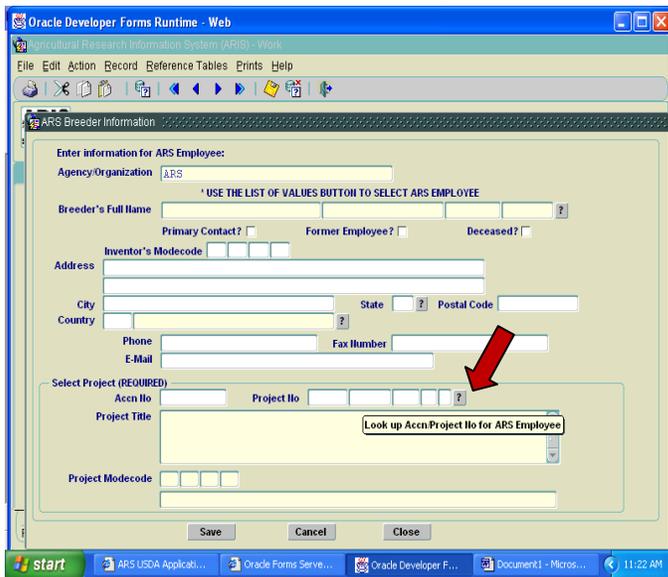
- Click the **Yes** button to confirm deletion of the highlighted Breeder entry

TIP: There are special steps required in order to add an ARS employee to the ARS Breeder list when that employee is not a Cat. 1 or 4

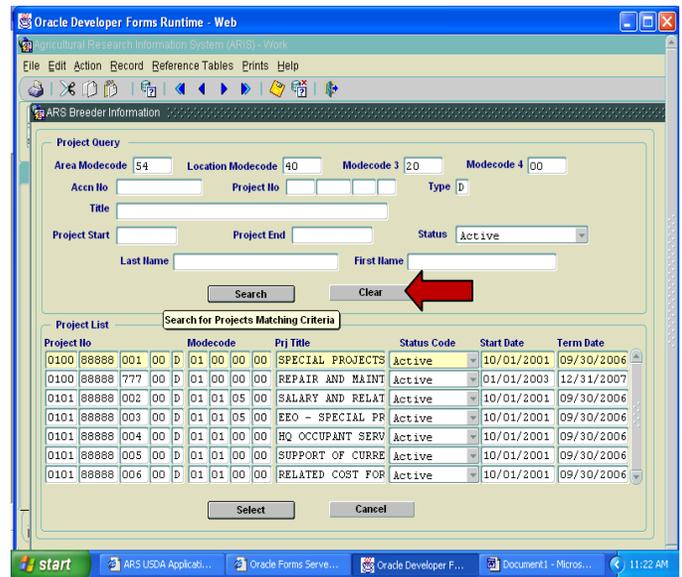
These steps must be followed to add an ARS Lab Technician or other non-Cat. 1 or 4 ARS employee having a role in the Plant Material release.



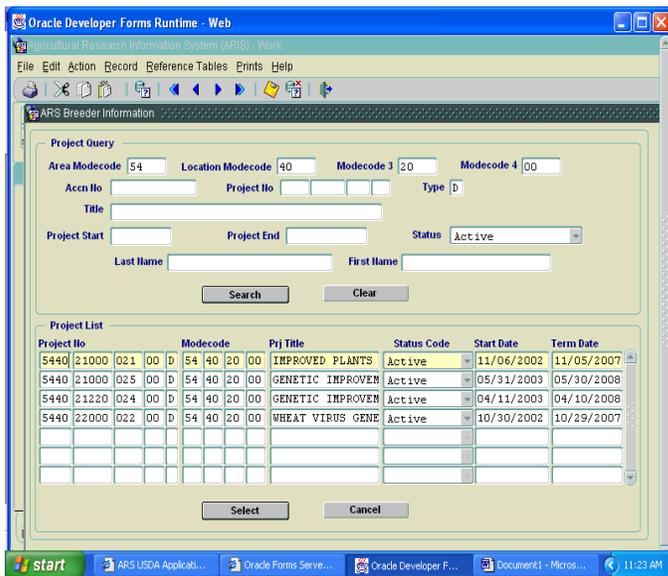
- Click the **Add ARS Breeder** button



- Click the **LOV ?** button to the right of the Project No.



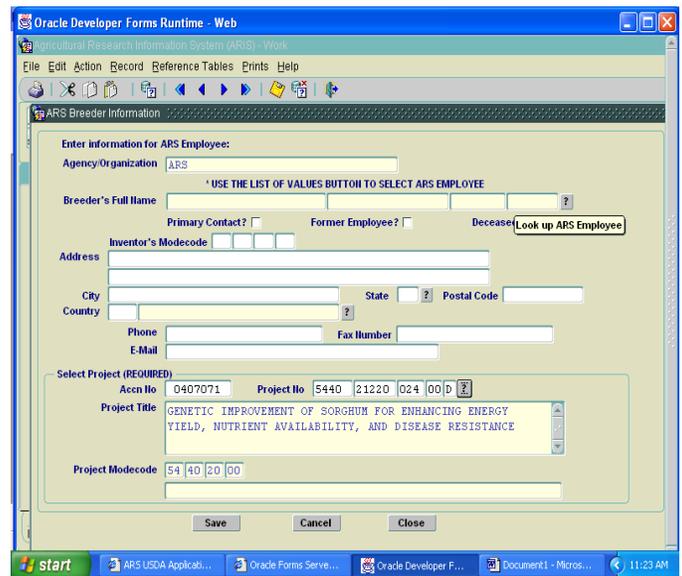
- **VERY Important:** Click on the **Clear** button first
- Enter the Unit Mode Code (two digits per box)
- Accession and/or Project #'s can be entered if known, but if they are not known it is okay to leave those two blocks blank as long as the next steps are completed
- Enter D in the Type box
- Click on the Status ▼ drop down menu button and select **Active** for Project Status
- Click the **Search** button (middle of the screen)



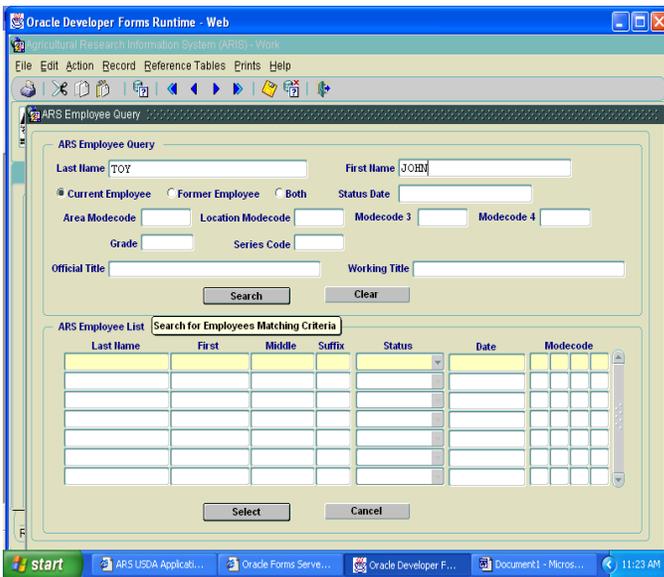
A list of the Active D projects under the Unit's mode code will appear.

- **Highlight** the correct Project No.
- Click the **Select** button

TIP: The project number **must** be identified and selected **PRIOR** to entering the rest of info (Name, Address, Phone, etc.), for the Non-Cat. 1 or 4 ARS employee (i.e., Lab Tech)

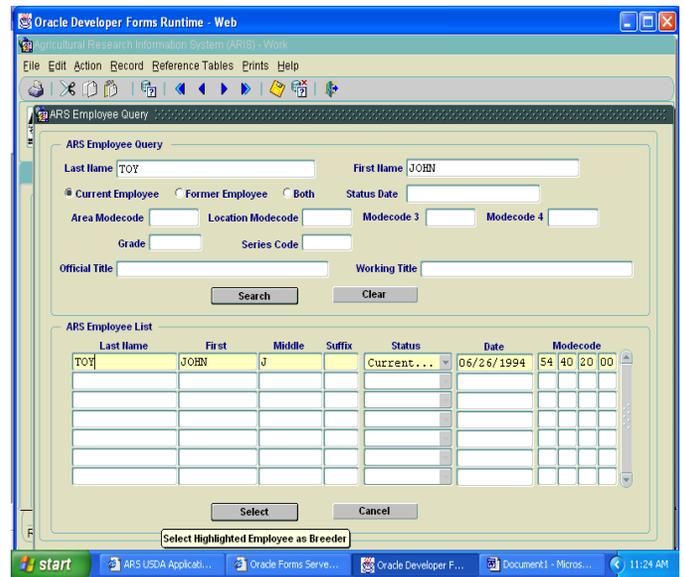


- Click the **LOV ?** button to the right of the **Breeder's Full Name** line

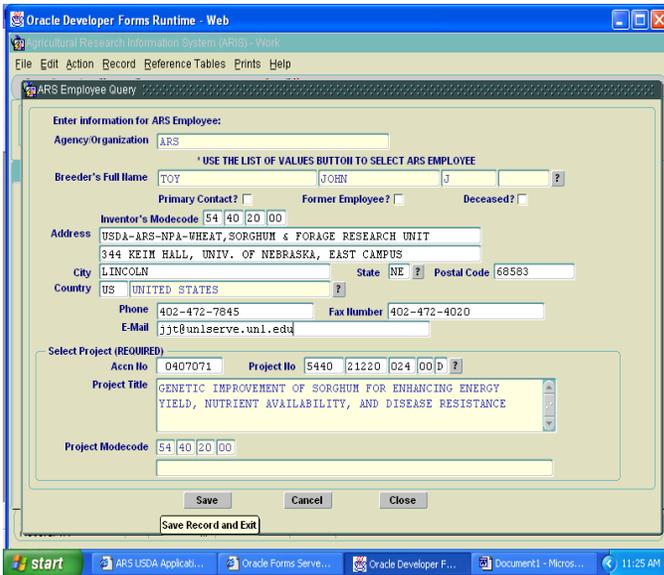


- Enter the ARS Employee's Last and First Name
- Click the **Search** button

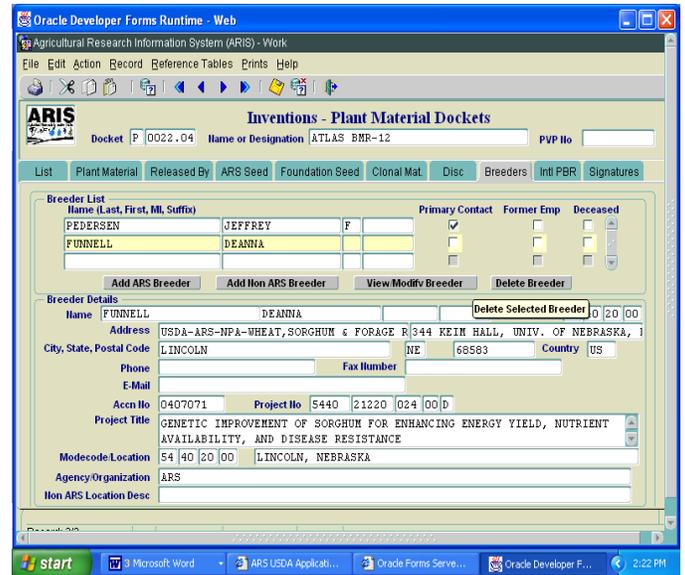
TIP: When **Both** is marked it will search the database for Current **and** Former employees.



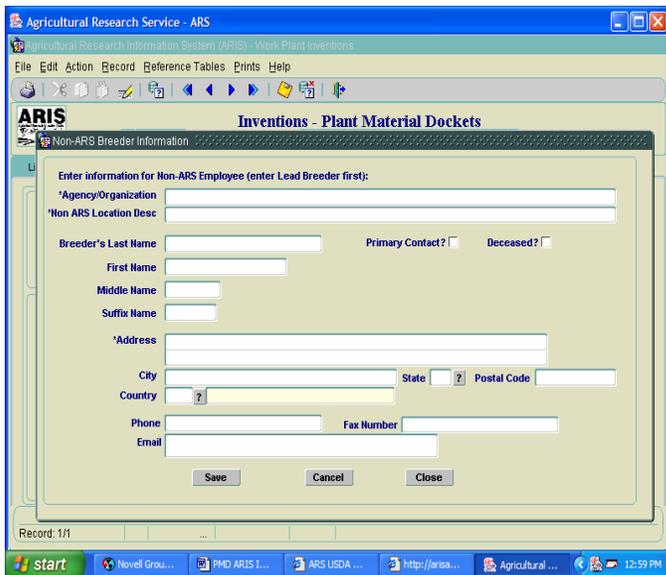
- **Highlight** the employee
- Click the **Select** button



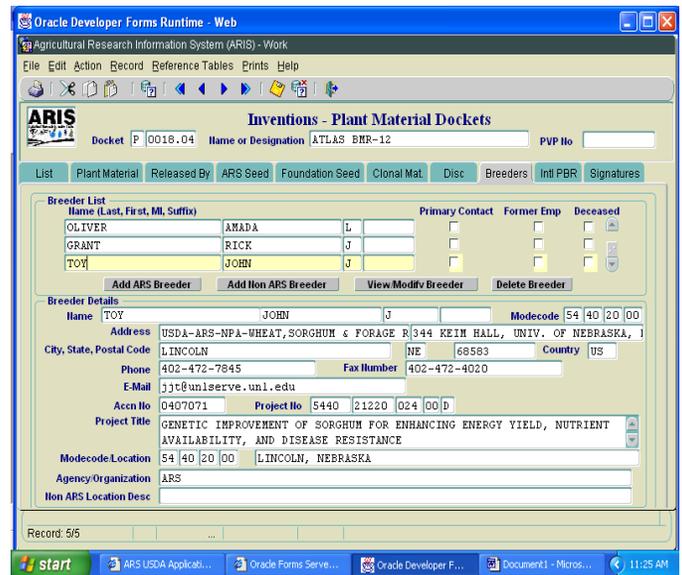
- Enter the Employee's Phone, Fax and Email
- Click the **Save** button



- Click on the **Add Non-ARS Breeder** button (if applicable) to add Non-ARS people involved in the Plant Material Docket release.

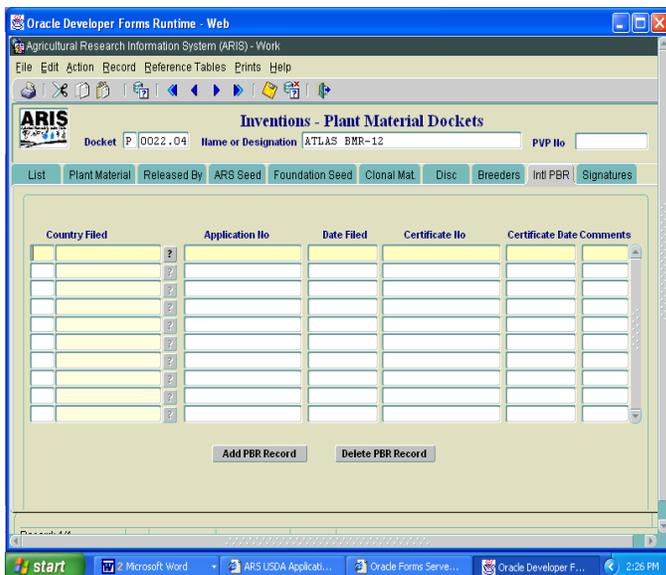


- Complete the information requested on this screen for Non-ARS Breeders.
- Click the **Save** button



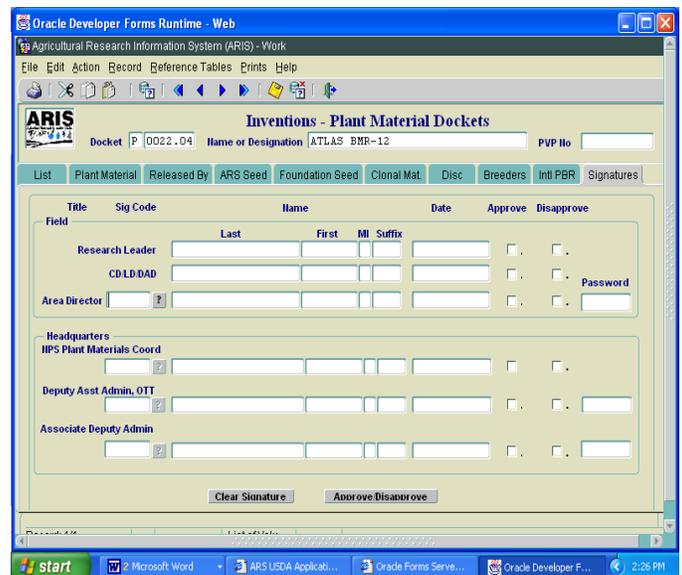
The screen above shows how the listing for all Breeders will appear (check names/information for accuracy by using the scroll bar to the right).

Modify/Delete by highlighting the desired name and clicking the applicable action button.



DO NOT use the Intl PBR tab, it is restricted to OTT data entry.

NOTE: The Intl PBR tab serves a separate purpose from the response given in Question #6 in the Desc tab section.



- Click the **Signature** tab
- Enter the Research Leader or CD/LD/DAD name
- Click on the under the Approve column (a Y or ✓ will appear in the Approve box)
- Click the **Approve/Disapprove** button to save and release to the next approval level. The Date of approval is generated by clicking on the Approve button

NOTE: The Save icon at the top of the screen does not work on this application.

Data required to complete the ARIS PMD entry	Enter responses to each piece of information in this column and send the template to the ARIS staff via e-mail.
All are required: <ul style="list-style-type: none"> •Variety Name or Germplasm designation •Crop (Common Name) •Genus Name •Species Name 	
Should this Variety be sold only as a class of certified seed? Yes or No	
Plant Variety Protection Information: Is this plant material a candidate for variety protection (PVPC and/or Patent)? Yes or No	
Comments block: Enter any special information for the Office of National Programs (<i>i.e.</i> , Experimental Germplasm; Certifiable Germplasm; Development material for evaluation purposes, etc.).	
Is this an ARS Release or a Joint Release? (Check one)	ARS Release Joint Release
Is there a CRADA? If Yes, list CRADA Agreement Number	No Yes: CRADA Agreement No.: 58-3K95- -
If a Joint Release, name of the co-releasing organization(s): If there is more than one co-releasing organization use a separate sheet of paper and list all co-releasing organizations. Include the same information for each one as shown here. <ul style="list-style-type: none"> •Name of co-releasing organization •Contact's Name (Last, First, MI, Suffix) •Title (<i>i.e.</i>, Vice Pres., Executive Director) •Mailing address (include PO and/or Suite #) •City, ST, Postal Code, Country •Phone & Fax with Area Code, e-mail address 	
ARS Location where breeder seed is available for distribution: <ul style="list-style-type: none"> •ARS Location (Name of your Area) •Mailing address (include PO and/or Suite #) •City, ST, Country 	
ARS Employee Contact Info: <ul style="list-style-type: none"> •Contact Name (Last, First, MI, Suffix) •Mailing address (include PO and/or Suite #) •City, ST, Postal Code, Country •Phone & Fax with Area Code, e-mail address 	
Foundation Seed information: Complete this section if applicable (organization responsible for producing Foundation Seed for distribution) <ul style="list-style-type: none"> •Organization name 	

<ul style="list-style-type: none"> •Mailing address (include PO and/or Suite #) •City, ST, Country 	
<p>Contact Information for distribution of Foundation Seed (if applicable):</p> <ul style="list-style-type: none"> •Contact Name (Last, First, MI, Suffix) •Title (<i>i.e.</i>, Vice Pres., Executive Director) •Mailing address (include PO and/or Suite #) •City, ST, Postal Code, Country •Phone & Fax with Area Code, e-mail address 	
<p>Clonal Material: ARS Location where clonal propagation material is available for distribution.</p> <ul style="list-style-type: none"> •ARS Location (Name of your Area) •Mailing address (include PO and/or Suite #) •City, ST, Country <ul style="list-style-type: none"> •Contact Name (Last, First, MI, Suffix) •Title of ARS contact person •Mailing address (include PO and/or Suite #) •City, ST, Postal Code, Country •Phone & Fax with Area Code, e-mail address 	
<p>Nursery(ies) or other organization(s) where propagation material is available. (If there is more than one use a separate sheet of paper and list all nurseries/organizations. Include the same information for each one as shown below).</p> <ul style="list-style-type: none"> •Organization Name •City, ST, Country •Contact Name (Last, First, MI, Suffix) •Mailing address (Include PO and/or Suite #) •City, ST, Postal Code, Country •Phone & Fax with Area Code, e-mail address 	
<p>Clonal Material Description/Questions (ARIS Staff: Use Ctrl C/Ctrl V to copy/paste). Contact the Area OTT/TTC or the <i>Technology Transfer Handbook for ARS Plant Breeder's</i> for assistance with the questions.</p>	
<p>Q. 1: Was this plant material developed in cooperation with a university experiment station or other organization? What resources were contributed by the cooperator (<i>e.g.</i>, technicians, breeders, land, facilities, services, test date, etc.). List all cooperator employees who were directly involved in the breeding and selection of this material.</p>	
<p>Q. 2: Provide a full description of the plant material to be released. Please include the complete text of the proposed release notice. Detailed instructions available. (<i>Technology Transfer Handbook for ARS Plant Breeder's</i> at http://www.ars.usda.gov/SP2UserFiles/Place/00000000/OTTGeneral/ARSPlantBreedersHandbook.pdf)</p>	
<p>Q.3: Discuss who is expected to use the released plant material and how they will use it? What public or private organizations have requested this material for research, breeding or testing purposes? Have you consulted with any commodity groups?</p>	

Q.4: List any publications and/or public use of this plant material. Has the material been provided to anyone outside of USDA for field testing purposes? Have seeds, cuttings, fruit or other materials been sold by cooperators?

Q. 5: If plant variety protection has been requested, explain how such protection will facilitate technology transfer that would otherwise not occur if the variety is publicly released. Does the variety have any special characteristics that would make protection desirable (e.g., niche market use, transgenic plant incorporating proprietary technology owned by others, requires identity preservation, etc.).

Q. 6: If plant variety protection has been requested, is there an international market for this variety? If so, in what countries? Have you sent the variety to anyone outside of the U.S. for testing or breeding?

Breeder's information for ARS Breeders: List each ARS Breeder involved. Include the same information for each one as shown below.

- Name (Last, First, MI, Suffix)
- Mailing address (include PO and/or Suite #)
- City, ST, Postal Code, Country
- Phone & Fax with Area Code, e-mail address
- In-house D project for each ARS Breeder

Breeder's information for Non-ARS Breeders: List each Non-ARS Breeder involved. Include the same information for each one as shown below.

- Name of Non-ARS Agency/Organization
- Name (Last, First, MI, Suffix)
- Mailing address (include PO and/or Suite #)
- City, ST, Postal Code, Country
- Phone & Fax with Area Code, e-mail address

Agricultural Research Information System
Inventions-Plant Materials Dockets Disclosure

Attachment 1

Docket No: 0005.05 FY: 2005

Variety Name or Germplasm Designation: PUEBLO

Crop(Common Name): BOTTLEBRUSH SQUIRRELTAIL

Genus: Elymus Elymoides [raf.]

Species: swezey ssp. brevifolius

Certified Seed? Yes

PVP No:

Is or was there a CRADA? No

ARS CRADA No:

1. Was this plant material developed in cooperation with a university experiment station or other organization? What resources were contributed by the cooperator. e.g. technicians, breeders, land, facilities, services, test date, etc. List all cooperator employees who were directly involved in the breeding and selection of this material

The Upper Colorado Environmental Plant Center; United States Department of Agriculture, Natural Resources Conservation Service; United States Department of Agriculture, Agricultural Research Service; and Colorado State Agricultural Experiment Station announce the release of a selected class of bottlebrush squirreltail (*Elymus elymoides* [Raf.] Swezey ssp. *brevifolius*) for the revegetation of disturbed sites within the natural range of this subspecies.

Because this is a selected class release (natural track), this plant will be referred to as Pueblo Germplasm bottlebrush squirreltail. This collection was assigned the Natural Resources Conservation Service (NRCS) accession number 9040187. Pueblo Germplasm is released as a selected class of certified seed (natural track).

This alternative release is justified because there is no release of the subspecies *E. elymoides* ssp. *brevifolius* from a single source. Tusas Germplasm bottlebrush squirreltail, released by Los Lunas PMC, is a composite of eight accessions originating in New Mexico. Pueblo Germplasm, along with Wapiti Germplasm, will represent the only releases of ssp. *brevifolius* from single sources. Furthermore, the subspecies *brevifolius* is the most prevalent subspecies in the Rocky Mountains. Bottlebrush squirreltail germplasms Fish Creek and Toe Jam Creek represent *E. elymoides* ssp. *elymoides* and *E. elymoides* ssp. *californicus* respectively. Seed increase of specific ecotypes, especially for use in the central Rocky Mountains, is needed for increased opportunities for site specific and site-adapted products.

Collection Site Information: Pueblo Germplasm bottlebrush squirreltail (accession 9040187) was originally collected August, 1976 by Larry Klock of the Natural Resources Conservation Service. The collection site is southwest of Pueblo, Colorado in Pueblo County (SE 1/4, SW1/4, Sec. 19, T22S, R68W). The landform consists of steep side slopes of benches, mesas and mountains. The site elevation is approximately 7200 feet and the soils are shallow and gravelly. Associated species included western wheatgrass, cheatgrass, yellow sweetclover, annual sunflower and Gambel oak.

2. Provide a full description of the plant material to be released. Please include the complete text of the proposed release notice. Detailed instructions available.

Bottlebrush squirreltail, *Elymus elymoides*, is a cool-season native perennial bunchgrass. The plant grows 8-25 inches tall, and occurs primarily on dry, gravelly or saline soils and is common on hillsides and alkaline flats. The stiff, involute leaf blades expand up to 3/16 of an inch in width and often become smooth or softly pubescent. The spikes of the inflorescence have long divergent awns and are commonly enclosed at the upper part of

Agricultural Research Information System
Inventions-Plant Materials Dockets Disclosure

Docket No: 0005.05

FY: 2005

the sheath. The spikelets are two flowered at each node of a disarticulating rachis with the rachis breaking at the base of each joint. The spikelets drop from the seed head and are disseminated by the wind into surrounding areas.

Bottlebrush squirreltail is widely distributed spanning from Mexico to British Columbia and from the west coast to the Dakotas and south to Oklahoma and Texas. It also occupies a wide range of elevations from 4,000 to 10,500 feet. As a species, *Elymus elymoides* has good drought resistance and tolerance to saline-alkali soils. The plant is also useful for erosion control and has become an important tool for oil shale restoration and coal mine reclamation. It establishes easily and creates a good environment for succession. Bottlebrush squirreltail is also quite resistant to fire. The tussocks of squirreltail have low densities and burn quickly and at relatively low temperatures when compared to other perennial bunchgrasses such as needle-and-thread and bluebunch wheatgrass. As a result, meristematic crown tissue of burned squirreltail plants generally survives. Bottlebrush squirreltail is valuable winter forage for many domestic and wildlife species because of its long green period. Pueblo Germplasm bottlebrush squirreltail obtains a height of 12 to 18 inches, and initiates growth and matures approximately 10 days to two weeks later than the Wapiti selection of bottlebrush squirreltail.

Method of Breeding and/or Selection: A total of 8 bottlebrush squirreltail accessions were collected from sites along the east and west side of the Rocky Mountains and eastern Utah. These collections were established and initially evaluated in 1983 for survival, overall forage production, potential seed production, and seedling vigor. In 1984, the accessions were evaluated for percent stand, leaf height, vigor, leaf abundance, stem height and seed production. In 1987, the last year of the initial evaluation, two accessions were identified for further testing and seed increase. Pueblo bottlebrush squirreltail and another top accession, Wapiti, were the two chosen for further development.

Ecological Considerations and Evaluation: Pueblo Germplasm bottlebrush squirreltail was produced from 1990 to 2001 in UCEPC seed production fields and did not demonstrate a cultural concern during production. Because the seed is dispersed quite easily by wind, open, fallow fields may be subject to bottlebrush squirreltail invasion. However, the selection has met the criteria for releasing as per the Environmental Evaluation of NRCS Plant Releases (attached). This release is of a native species that is widely distributed throughout western North America, and of a subspecies that is an important range component in the central Rocky Mountains with recognized benefits to domestic livestock, wildlife and for use in reclamation and revegetation.

3. Discuss who is expected to use the released plant material and how they will use it? What public or private organizations have requested this material for research, breeding or testing purposes? Have you consulted with any commodity groups?

Conservation Use: The potential uses of Pueblo Germplasm bottlebrush squirreltail include erosion control and domestic livestock and wildlife forage production. The plant establishes easily, remains green for a long period and is palatable throughout the winter. Bottlebrush squirreltail is also an important source for fire restoration. It is quick to establish, has a proficient seed dispersal mechanism, and is resistant to fire damage. Bottlebrush squirreltail has also shown that it can become a good competitor with undesirable annual weed species. Bottlebrush squirreltail is recognized as being one native perennial bunchgrass that has potential for broad-scale application in range seedings where introduced products such as crested and Siberian wheatgrasses and Russian wildryes have been used traditionally. Excellent seed dispersal, ability to tolerate fire, and excellent seedling vigor are all attributes that will allow this selection of bottlebrush squirreltail to be used in many conservation applications.

Anticipated Area of Adaptation: Bottlebrush squirreltail is a perennial bunchgrass, commonly found on south facing slopes with a wide topographic range from the desert plains to mountain slopes. It inhabits dry, gravelly soils, but is also found on heavier

Agricultural Research Information System
Inventions-Plant Materials Dockets Disclosure

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soils such as saline-alkali sites, and is well adapted to harsh environments and extreme conditions. The Natural Resources Conservation Service range site descriptions for Colorado lists bottlebrush squirreltail as occurring naturally on 46 of 64 sites. Range sites supporting high densities of bottlebrush squirreltail are generally found to receive 7 to 15 inches of precipitation. The soils can be loamy, calcareous, gravelly, shallow, or salty, and the most commonly associated plant species are western wheatgrass, Indian ricegrass, galleta grass, and winterfat. Squirreltail exceeds 10 to 15 percent of the total production on range sites titled Mountain Loam, Limy Bench, Mountain Outwash, Shallow Slopes, and Salt Desert Breaks. Pueblo bottlebrush squirreltail is potentially adapted for use throughout the above areas.

Availability of Plant Materials: The Upper Colorado Environmental Plant Center will maintain G1 and G2 seed. G2 seed will be available to growers. Growers may produce one generation (G3) beyond G2 Pueblo Germplasm seed. Any seed used for certified seed production of Pueblo Germplasm must be obtained from UCEPC.

4. List any publications and/or public use of this plant material. Has the material been provided to anyone outside of USDA for field testing purposes? Have seeds, cuttings, fruit or other materials been sold by cooperators?

5. If plant variety protection has been requested, explain how such protection will facilitate technology transfer that would otherwise not occur if the variety is publicly released. Does the variety have any special characteristics that would make protection desirable, e.g. niche market use, transgenic incorporates proprietary technology owned by others, requires identity preservation, etc.

6. If plant variety protection has been requested, is there an international market for this variety. If so, in what countries? Have you sent the variety to anyone outside the U.S. for testing or breeding?

IF YOU ARE A USDA EMPLOYEE, By signing this form you acknowledge that:

a. The invention described herein (1) was made during working hours, or (2) was made with a contribution by the Government of facilities, equipment, materials, funds, or information, or of time or services of other Government employees on official duty, or (3) bears a direct relation to, and/or was made in consequences of your official duties. (If it meets NONE of these criteria, contact the Office of General Counsel and do NOT sign this form.)

b. You may be entitled to foreign rights in the invention, and foreign rights may be jeopardized by publishing or disclosing the invention before a patent application is filed in the U.S. Patent and Trademark Office.

Inventors:

Docket No: 0005.05 FY: 2005

Inventors:

ROBINSON SCOTT
5538 RBC 4
MEEKER CO 81641

Phone:
Email:
UPPER COLORADO ENVIRONMENTAL PLANT CENTER (UC

Recommend:	Date	Approval
RL:		
CD/LD/DAD:		
AD:		

Approve/Concur:
 NPS Plant
Materials Coord:

Deputy Admin:

Deputy Asst
Admin, OTT:

**** UNOFFICIAL ****

Docket No P 0005.05 FY: 2005

Plant Variety Name: PUEBLO
 Crop(Common Name): BOTTLEBRUSH SQUIRRELTAIL
 Genus Name: Elymus Elymoides [raf.]
 Species Name: swezey ssp. brevifolius
 Certified Seed: Yes
 Grin Accn No:

Plant Variety Protection Info

Candidate for Variety Protection (PVPC and/or Patent)?	No	Pvp No:
Application Date:	Application Fee:	Paid Date:
Certification Issued Date:	Certification Fee:	Paid Date:
Expiration Date:	Years Protected:	
Patent Docket No:		

Decision Date: Outcome:
 Decision Memo:

ARS or Joint Release: Joint
 Crada: Agreement No: Amendment No:

Contacts: Joint Release

Organization: UPPER COLORADO ENVIRONMENTAL PLANT CENTER

Location: Meeker, Colorado

5538 RBC 4

MEEKER

CO US

Contact: ROBINSON SCOTT

Address: 5538 RBC 4

MEEKER

CO US

81641

Phone Nos:

Fax:

Email:

Organization: NATURAL RESOURCES CONSERVATION SERVICE

Location: Washington, DC

Ecological Sciences Division

WASHINGTON

DC US

Contact: GELBURD DIANE

Address: Ecological Sciences Division

WASHINGTON

DC US

Phone Nos:

Fax:

Email:

Docket No P 0005.05

FY: 2005

was originally collected August, 1976 by Larry Klock of the Natural Resources Conservation Service. The collection site is southwest of Pueblo, Colorado in Pueblo County (SE 1/4, SW1/4, Sec. 19, T22S, R68W). The landform consists of steep side slopes of benches, mesas and mountains. The site elevation is approximately 7200 feet and the soils are shallow and gravelly. Associated species included western wheatgrass, cheatgrass, yellow sweetclover, annual sunflower and Gambel oak.

2. Provide a full description of the plant material to be released. Please include the complete text of the proposed release notice. Detailed instructions available.

Bottlebrush squirreltail, *Elymus elymoides*, is a cool-season native perennial bunchgrass. The plant grows 8-25 inches tall, and occurs primarily on dry, gravelly or saline soils and is common on hillsides and alkaline flats. The stiff, involute leaf blades expand up to 3/16 of an inch in width and often become smooth or softly pubescent. The spikes of the inflorescence have long divergent awns and are commonly enclosed at the upper part of the sheath. The spikelets are two flowered at each node of a disarticulating rachis with the rachis breaking at the base of each joint. The spikelets drop from the seed head and are disseminated by the wind into surrounding areas.

Bottlebrush squirreltail is widely distributed spanning from Mexico to British Columbia and from the west coast to the Dakotas and south to Oklahoma and Texas. It also occupies a wide range of elevations from 4,000 to 10,500 feet. As a species, *Elymus elymoides* has good drought resistance and tolerance to saline-alkali soils. The plant is also useful for erosion control and has become an important tool for oil shale restoration and coal mine reclamation. It establishes easily and creates a good environment for succession. Bottlebrush squirreltail is also quite resistant to fire. The tussocks of squirreltail have low densities and burn quickly and at relatively low temperatures when compared to other perennial bunchgrasses such as needle-and-thread and bluebunch wheatgrass. As a result, meristematic crown tissue of burned squirreltail plants generally survives. Bottlebrush squirreltail is valuable winter forage for many domestic and wildlife species because of its long green period. Pueblo Germplasm bottlebrush squirreltail obtains a height of 12 to 18 inches, and initiates growth and matures approximately 10 days to two weeks later than the Wapiti selection of bottlebrush squirreltail.

Method of Breeding and/or Selection: A total of 8 bottlebrush squirreltail accessions were collected from sites along the east and west side of the Rocky Mountains and eastern Utah. These collections were established and initially evaluated in 1983 for survival, overall forage production, potential seed production, and seedling vigor. In 1984, the accessions were evaluated for percent stand, leaf height, vigor, leaf abundance, stem height and seed production. In 1987, the last year of the initial evaluation, two accessions were identified for further testing and seed increase. Pueblo bottlebrush squirreltail and another top accession, Wapiti, were the two chosen for further development.

Ecological Considerations and Evaluation: Pueblo Germplasm bottlebrush squirreltail was produced from 1990 to 2001 in UCEPC seed production fields and did not demonstrate a cultural concern during production. Because the seed is dispersed quite easily by wind, open, fallow fields may be subject to bottlebrush squirreltail invasion. However, the selection has met the criteria for releasing as per the Environmental Evaluation of NRCS Plant Releases (attached). This release is of a native species that is widely distributed throughout western North America, and of a subspecies that is an important range component in the central Rocky Mountains with recognized benefits to domestic livestock, wildlife and for use in reclamation and revegetation.

3. Discuss who is expected to use the released plant material and how they will use it? What public or private organizations have requested this material for research, breeding or testing purposes? Have you consulted with any commodity groups?

Conservation Use: The potential uses of Pueblo Germplasm bottlebrush squirreltail include erosion control and domestic livestock and wildlife forage production. The plant establishes easily, remains green for a long period and is palatable throughout the winter. Bottlebrush squirreltail is also an important source for fire restoration. It is quick to establish, has a proficient seed dispersal mechanism, and is resistant to fire damage. Bottlebrush

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squirreltail has also shown that it can become a good competitor with undesirable annual weed species. Bottlebrush squirreltail is recognized as being one native perennial bunchgrass that has potential for broad-scale application in range seedings where introduced products such as crested and Siberian wheatgrasses and Russian wildryes have been used traditionally. Excellent seed dispersal, ability to tolerate fire, and excellent seedling vigor are all attributes that will allow this selection of bottlebrush squirreltail to be used in many conservation applications.

Anticipated Area of Adaptation: Bottlebrush squirreltail is a perennial bunchgrass, commonly found on south facing slopes with a wide topographic range from the desert plains to mountain slopes. It inhabits dry, gravelly soils, but is also found on heavier soils such as saline-alkali sites, and is well adapted to harsh environments and extreme conditions. The Natural Resources Conservation Service range site descriptions for Colorado lists bottlebrush squirreltail as occurring naturally on 46 of 64 sites. Range sites supporting high densities of bottlebrush squirreltail are generally found to receive 7 to 15 inches of precipitation. The soils can be loamy, calcareous, gravelly, shallow, or salty, and the most commonly associated plant species are western wheatgrass, Indian ricegrass, galleta grass, and winterfat. Squirreltail exceeds 10 to 15 percent of the total production on range sites titled Mountain Loam, Limy Bench, Mountain Outwash, Shallow Slopes, and Salt Desert Breaks. Pueblo bottlebrush squirreltail is potentially adapted for use throughout the above areas.

Availability of Plant Materials: The Upper Colorado Environmental Plant Center will maintain G1 and G2 seed. G2 seed will be available to growers. Growers may produce one generation (G3) beyond G2 Pueblo Germplasm seed. Any seed used for certified seed production of Pueblo Germplasm must be obtained from UCEPC.

Breeders:**ROBINSON SCOTT**Current Employee
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