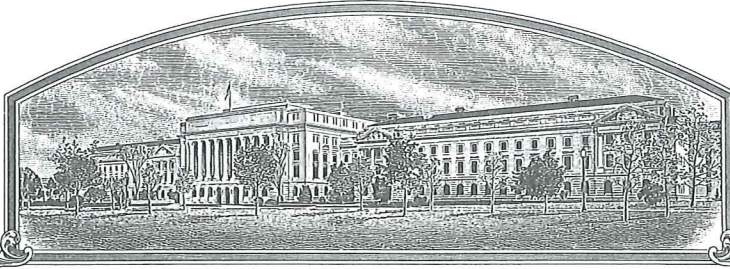


No.

201000280



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The Board of Trustees of the University of Arkansas, N.A.

Whereas, THERE HAS BEEN PRESENTED TO THE

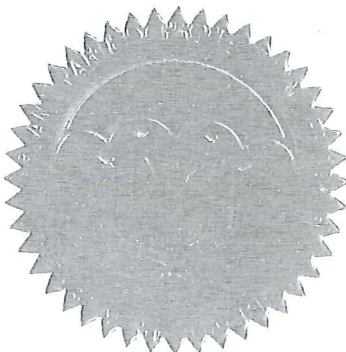
Secretary of Agriculture

An application requesting a certificate of protection for an alleged distinct variety of sexually reproduced, or tuber propagated plant, the name and description of which are contained in the application and exhibits, a copy of which is hereunto annexed and made a part hereof, and the various requirements of LAW in such cases made and provided have been complied with, and the title thereto is, from the records of the PLANT VARIETY PROTECTION OFFICE, in the applicant(s) indicated in the said copy, and Whereas, upon due examination made, the said applicant(s) is (are) adjudged to be entitled to a certificate of plant variety protection under the LAW.

Now, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of TWENTY years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety therefrom, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

RICE

'CL142-AR'



In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this nineteenth day of June, in the year two thousand and thirteen.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE <i>(Instructions and information collection burden statement on reverse)</i>		The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995. Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).	
1. NAME OF OWNER The Board of Trustees of the University of Arkansas, N.A.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME STG05IMI-01-113	3. VARIETY NAME CL 142 AR CL142-AR
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 2404 North University Avenue Little Rock, Arkansas 72207-3608		5. TELEPHONE (include area code) (479) 575-6884	FOR OFFICIAL USE ONLY <hr/> PVPO NUMBER #201000280 <hr/> FILING DATE April 8, 2010
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Land grant University		6. FAX (include area code) (479) 575-8646	
8. IF INCORPORATED, GIVE STATE OF INCORPORATION Land grant University		9. DATE OF INCORPORATION April 8, 2010	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Jondle & Associates, P.C. Attn: Barbara Campbell, Esq. 858 Happy Canyon Road, Suite 230 Castle Rock, Colorado 80108		FILING AND EXAMINATION FEES: \$ 4382.00 DATE April 8, 2010 CERTIFICATION FEE: \$ DATE	
11. TELEPHONE (Include area code) (303) 799-6444	12. FAX (Include area code) (303) 799-6898	13. E-MAIL bcampbell@jondlelaw.com	
14. CROP KIND (Common Name) Rice	16. FAMILY NAME (Botanical) Poaceae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION. _____	
15. GENUS AND SPECIES NAME OF CROP Oryza sativa L.	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) 	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (if "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (if "no", go to item 23) <input type="checkbox"/> UNDECIDED	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
SIGNATURE OF OWNER 	SIGNATURE OF OWNER		
NAME (Please print or type) Mark J. Cochran, Ph.D.	NAME (Please print or type)		
CAPACITY OR TITLE Associate VP for Research, U. of Arkansas Division of Agriculture	DATE 12/18/2009	CAPACITY OR TITLE	DATE

#S01000580

2010 APR 8 PM 3:34

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give:
 - (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
 - (2) the details of subsequent stages of selection and multiplication;
 - (3) evidence of uniformity and stability; and
 - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
 - (1) identify these varieties and state all differences objectively;
 - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- 20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
- 23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- 24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).) A US patent application was filed on September 22, 2009, 12/564,212.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Exhibit A – Origin and Breeding History of ‘CL 142-AR’

‘CL 142-AR’ originated from the cross ‘Francis’//‘Wells’/‘CL161’ made at the Rice Research Station at Crowley, Louisiana in 2002. ‘Francis’ (U.S. PVP No. 2003000066) is a high yielding, long grain rice cultivar described by Moldenhauer et al., in 2007. ‘Wells’ (U.S. PVP No. 200000077) is a high-yielding, long-grain rice described in and protected by U.S. Patent No. 6,281,416 issued August 28, 2001. ‘CL161’ is a Clearfield® rice variety released by Louisiana State University and BASF Corporation and is a mutation line from Cypress. ‘CL161’ is described in and protected by PVP Certificate No. 200200198.

The breeding history of ‘CL 142-AR’ is shown below.

2002 to 2003

Winter cross made with ‘Francis’//‘Wells’/‘CL161’ in Crowley, Louisiana.

2003

Summer F₁ grown in a greenhouse in Crowley, Louisiana.

2003 to 2004

Winter F₂ advanced a generation in a greenhouse in Crowley, Louisiana.

2004

F₃ bulk rows in Crowley, Louisiana.

2005

F₄ panicle row (designated IMI-01-113) grown in Stuttgart, Arkansas and harvested in bulk

2006

IMI-01-113 grown in Stuttgart, Arkansas IMI test (2 repetitions, 1 location)

2007

Arkansas Rice Performance Trials (6 locations) and Disease Monitoring Plots (10 locations); uniform and stable; selection based on rough rice and milling yields, Newpath resistance, height, maturity, straw strength and disease resistance.

2008

Arkansas Rice Performance Trials (5 locations) and Disease Monitoring Plots (10 locations); 1440 head rows Stuttgart Arkansas; selection continued based on rough rice and milling yields, Newpath resistance, height, maturity, straw strength and disease resistance.

2009

Foundation seed increase; uniform and stable.

‘CL 142-AR’ was developed involving a variety of plant breeding methods including hybridization, backcrossing, and a combination of modified pedigree and bulk breeding methods.

‘CL 142-AR’ was uniform and stable in the F₅ generation and remained so through 5 additional generations of reproduction through and including foundation seed production.

Variants, less than 1 per 5000 plants, may include the following in any combination: taller, shorter, earlier, later, glabrous or pubescent plants, as well as intermediate or long-grains and grains with long awns. Other atypical plants may still be encountered in the variety.

Exhibit B - Statement of Distinctness for 'CL 142-AR'

Rice cultivar 'CL 142-AR' is similar to rice cultivar 'Wells' (U.S. PVP No. 200000077); however, there are differences. 'CL 142-AR' has a larger kernel size (20.4 mg/seed milled rice) than 'Wells' (18.9 mg/seed milled rice). 'CL 142-AR' rates moderately susceptible for sheath Blight while 'Wells' rates susceptible. Rice cultivar 'CL 142-AR' is resistant to the herbicide Newpath. 'CL 142-AR' is an "herbicide-resistant" rice plant that is tolerant or resistant to imidazolinone herbicides at a level that normally kills, or inhibits the growth of normal rice plants. 'CL 142-AR' differs from 'Wells' in that 'Wells' does not have the AHAS gene which inhibits imidazolinone herbicides and consequently dies when sprayed with the herbicide. The mutation responsible for imidazolinone tolerance in 'CL 142-AR' is due to a point mutation of a single nucleotide in the AHAS gene. The AHAS gene in PWC16 (from Cypress mutation) contains a single amino acid change that is due to a single nucleotide change in the coding sequence for AHAS. This is the gene that is in 'CL 142-AR'. AHAS is a critical enzyme for the biosynthesis of branched-chain amino acids (leucine, isoleucine, and valine) in plants and microorganisms. Without these amino acids, plants wither and die (Croughan, 2003). The mutation alters the binding site for the imidazolinone herbicides on the enzyme expressed by AHAS gene while allowing the normal functioning of the enzyme (Tan et al., 2005). Croughan, T.P. 2003. Clearfield rice: It's not a GMO. Louisiana Agric. 46(4):24-26. Tan, S., B.K. Singh, D.L. Shaner, R.R. Evans, and M.L. Dahmer. 2005. Imidazolinone-tolerant crops: History, current status, and future. Pest Manage. Sci. 61:246-257.

Rice cultivar 'CL 142-AR' is similar to rice cultivar 'CL161' (U.S. PVP No. 200200198); however, there are differences. Rice cultivar 'CL 142-AR' has a longer average panicle length (24.0 cm) and larger seed size (20.4 mg/seed milled rice) than 'CL161' (17.0 cm panicle length and 16.9 mg/seed milled rice). Additionally, 'CL 142-AR' is moderately susceptible to Sheath Blight (*Rhizoctonia solani* Kühn), susceptible to Stem Rot (*Sclerotium oryzae*), while 'CL161' has is very susceptible to both Sheath Blight and Stem Rot.

Additionally, Table 1 compares the reactions of selected rice varieties and hybrids with 'CL 142-AR' to various diseases.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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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
Rice (*Oryza sativa*)**

NAME OF APPLICANT (S) Board of Trustees of the University of Arkansas, N.A.	TEMPORARY OR EXPERIMENTAL DESIGNATION STG05IMI-01-113	VARIETY NAME CL 142-AR
ADDRESS (Street and No. or RD No., City, State, and Zip Code, Country) 2404 N. University Avenue Little Rock, Arkansas 72207-3608		FOR OFFICIAL USE ONLY PVPO NUMBER <h1 align="center">#201000280</h1>

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the character of this variety in the spaces provided below. These numbers are also code numbers corresponding to descriptors developed by IBGR-IRRI Rice Advisory Committee and the US Rice Crop Advisory Committee. Breeders will demonstrate distinctness more readily by describing as many characters as is possible.

1. MATURITY: Days to Heading (Seedling to 50% Heading) (average across 5 locations, 4 years, 3 reps/location/year)

A. South: (Location: Stuttgart, Arkansas) at 150 kg/ha (Nitrogen Rate)

90 Number of Days (range is 84-95 for two years and five locations)

4 Days Earlier Than Check Variety: 'Banks'

 Days Same As Check Variety: 'Wells'

1 Days Later Than Check Variety: 'Francis'

2 Maturity Class 1 = Very Early (85 Days or Less) 2 = Early (86 - 100)
 3 = Intermediate (101 - 115) 4 = Late (More Than 115)

B. California: (Location: _____) at _____ kg/ha (Nitrogen Rate)

 Number of Days

 Days Earlier Than Check Variety: _____

 Days Same As Check Variety: _____

 Days Later Than Check Variety: _____

 Maturity Class 1 = Very Early (90 Days or Less) 2 = Early (91 - 97)
 3 = Intermediate (98 - 104) 4 = Late (More Than 104)

2. CULM:

1 Angle (Degrees from Perpendicular after Flowering):

1 = Erect (Less than 30°) 3 = Intermediate (About 45°) 5 = Open (About 60°)

7 = Spreading (More than 60° but the culms do not rest on the ground)

9 = Procumbent (The culm or its lower part rests on the ground surface)

2. CULM: (continued)

LENGTH

1 1 2 • 0 cm (Soil level to top of extended panicle on main stem) (range is 99 cm to 122 cm, 2 years, 5 locations and 3 reps/location)

3 • 0 cm Shorter Than Check Variety: 'LaGrue'

Length Same as Check Variety: 'Drew'

8 • 0 cm Longer than Check Variety: 'Wells'

2 Height Class: 1 = Short (≤ 95 cm) 2 = Medium (96-114 cm) 3 = Tall (≥ 115 cm)

1 Internode Color: (After Flowering): 1 = Green 2 = Light Gold 3 = Purple Lines 4 = Purple

3 Strength (Lodging Resistance): 1 = Strong (no Lodging) 3 = Moderately Strong (Most Plants Leaning)
5 = Intermediate (Most Plants Lodged) 7 = Weak (Most Plants Flat)
9 = Very Weak (All Plants Flat)

3. FLAG LEAF: (At Maturity)

3 4 • 8 cm Length (range 22 cm to 56 cm) 1 7 • 6 mm Width (range is 12 mm to 23 mm)

1 Pubescence: 1 = Glabrous 2 = Intermediate 3 = Pubescent

1 Leaf Angle (After Heading): 1 = Erect 3 = Intermediate 5 = Horizontal 7 = Descending

2 Blade Color (At Heading): 1 = Pale Green 2 = Green 3 = Dark Green 4 = Purple Tips
5 = Purple Margins 6 = Purple Blotch 7 = Purple

1 Basal Leaf Sheath Color (At Heading): 1 = Green 2 = Purple Lines 3 = Light Purple 4 = Purple

4. LIGULE:

3 • 9 mm Length (From base of collar to the tip, at late vegetative stage) (range is 2 mm to 6 mm)

1 Color: (Late Vegetative Stage): 1 = White 2 = Purple Lines 3 = Purple

2 Shape: 1 = Acute to Acuminate 2 = 2-Cleft 3 = Truncate

1 Collar Color (Late Vegetative Stage): 1 = Pale Green 2 = Green 3 = Purple

1 Auricle Color (Late Vegetative Stage): 1 = Pale Green 2 = Purple

5. PANICLE:

2 4 • 0 cm Length (range is 19.2 cm to 35.4 cm)

5 Type: 1 = Compact 5 = Intermediate 9 = Open

3 Secondary Branching: 1 = Absent 2 = Light 3 = Heavy 4 = Clustering

2 Exsertion (Near Maturity): 1 = Less than 90% 2 = 90 - 99% 3 = 100% Exserted

1 Shattering (At Maturity): 1 = Low ($\leq 5\%$) 5 = Moderate (6 - 25%) 9 = High (More than 25%)

2 Threshability: 1 = Difficult 2 = Intermediate 3 = Easy

6. GRAIN: (Spikelet) (in general absent but can have tip awns at high fertility)

0 Awns (After Full Heading): 0 = Absent 1 = Short and Partly Awned 5 = Short and Fully Awned
(but may have tip awns at high fertility) 7 = Long and Partly Awned 9 = Long and Fully Awned

2 Apiculus Color (At Maturity): 1 = White 2 = Straw 3 = Brown (Tawny) 4 = Red
(and some purple often fading to straw at maturity) 5 = Red Apex 6 = Purple 7 = Purple Apex

2 and 6 Apiculus Color (After Full Heading): 1 = White 2 = Straw 3 = Brown (Tawny) 4 = Red
5 = Red Apex 6 = Purple 7 = Purple Apex

1 and 5 Stigma Color: 1 = White 2 = Light Green 3 = Yellow 4 = Light Purple 5 = Purple

6. GRAIN: (Spikelet)

0 Lemma and Palea Color (At Maturity):

- 0 = Straw
- 3 = Brown Furrows on Straw
- 6 = Purple Spots on Straw
- 9 = Black
- 1 = Gold and/or Gold Furrows on Straw Background
- 4 = Brown (Tawny)
- 7 = Purple Furrows on Straw
- 10 = White
- 2 = Brown Spots on Straw (Piebald)
- 5 = Reddish to Light Purple
- 8 = Purple

1 Lemma and Palea Pubescence: 1 = Glabrous 2 = Hairs on Lemma Keel 3 = Hairs on Upper Portion 4 = Short Hairs 5 = Long Hairs (Velvety)

1 Spikelet Sterility (At Maturity): 1 = Highly Fertile (> 90%) 3 = Fertile (75 - 90%) 5 = Partly Sterile (50 - 74%) 7 = Highly Sterile (< 50% to Trace) 9 = Completely Sterile (0%)

7. GRAIN: (Seed)

2 Seed Coat (Bran) Color: 1 = White 5 = Red 2 = Light Brown 6 = Variable Purple 3 = Speckled Brown 7 = Purple 4 = Brown

1 Endosperm Type: 1 = Nonglutinous (Nonwaxy) 2 = Glutinous (Waxy) 3 = Indeterminate

1 Endosperm Translucency: 1 = Clear 5 = Intermediate 9 = Opaque

1 Endosperm Chalkiness: 0 = None 5 = Medium (10 - 20% of Sample) 1 = Small (Less than 10% of Sample) 9 = Large (More than 20% of Sample)

0 Scent (Aroma): 0 = Nonscented 1 = Lightly Scented 2 = Scented

Shape Class (Length/Width Ratio):

3 Paddy 1 = Short (2.2:1 and Less) 2 = Medium (2.3:1 to 3.3:1) 3 = Long (3.4:1 and More)

3 Brown 1 = Short (2.0:1 and Less) 2 = Medium (2.1:1 to 3.0:1) 3 = Long (3.1:1 and More)

3 Milled 1 = Short (1.9:1 and Less) 2 = Medium (2.0:1 to 2.9:1) 3 = Long (3.0:1 and More)

Measurements: Grain Form

Grain Form	Length (mm)	Width (mm)	Thickness (mm)	LW Ratio	1000 Grains (grams) note: milligrams
Paddy	9.08	2.64	2.01	3.44	26.9
Brown	7.28	2.38	1.76	3.06	23.3
Milled	6.80	2.24	1.70	3.04	20.4

17 Milling Quality (% Hulls) 537 Milling Yield (% White Kernel (head) Rice to Rough Rice)

% Protein 21-23% Amylose

Alkali Spreading Value: 1.5% KOH Solution or 3 to 5 1.7% KOH Solution

5 Gelatination Temperature Type: 1 = High 5 = Intermediate 7 = Low

Amylographic Paste Viscosity (RVA)

Peak	Trough	Hot Paste	Cooled Paste	"Breakdown" "Setback"	Final
234	159			74 / 266	32

8. RESISTANCE TO LOW TEMPERATURE:

NA Germination and Seedling Vigor: 1 = Low 2 = Medium 3 = High

NA Flowering (Spikelet Fertility): 1 = Low 2 = Medium 3 = High

9. SEEDLING VIGOR NOT RELATED TO LOW TEMPERATURE:

2 Vigor: 1 = Low 2 = Medium 3 = High

10. BLAST RESISTANCE: (*Pyricularia oryzae*). (International races found under References)

Group	0 = Immune		1 = Resistant		3 = Moderately Resistant		5 = Intermediate		7 = Moderately Susceptible		9 = Susceptible		
	IB		IC		ID		IE		IG		IH		Others:
Number	1	5	45	49	54	1	17	1	13	1	1	1	IE-1k and IB-33
Resistance	9	—	—	9	—	—	9	—	—	7	1	1	9 9

11. RESISTANCE TO OTHER DISEASES:

0 = Immune 1 = Resistant 3 = Moderately Resistant 5 = Intermediate 7 = Moderately Susceptible 9 = Susceptible

<u>7</u> Narrow Brown Leaf Spot (<i>Cerospora oryzae</i>)	___ Aggregate Sheath Spot (<i>Rhizoctonia oryzae-sativae</i>)
___ Leaf Smut (<i>Entyloma oryzae</i>)	<u>7</u> Straight Head
___ Brown Leaf Spot (<i>Helminthosporium oryzae</i>) (= <i>Bipolaris oryzae</i>) (= <i>Drechslera oryzae</i>)	<u>9</u> Kernel Smut (<i>Neovossia horrida</i>) (= <i>Tilletia barclayana</i>)
___ Leaf Scald (<i>Gerlachia oryzae</i>)	___ White Tip Nematode (<i>Aphelenchoides besseyi</i>)
___ Hoja Blanca Virus	<u>9</u> Stem Rot (<i>Sclerotium oryzae</i>)
___ Sheath Rot (<i>Sarocladium oryzae</i>)	
___ Pythium Seedling Blight (<i>Pythium</i> sp.)	<u>9</u> Bacterial Blight (<i>Xanthomonas campestris</i> pv. <i>oryzae</i>)
___ Sheath Spot (<i>Rhizoctonia oryzae</i>)	<u>7</u> Sheath Blight (<i>Rhizoctonia solani</i>)
___ Other: <u>Susceptible to False smut and Crown (black) sheath rot</u>	

12. INSECT RESISTANCE:

0 = Immune 1 = Resistant 3 = Moderately Resistant 5 = Intermediate 7 = Moderately Susceptible 9 = Susceptible

___ Grasshopper	___ Rice Stink Bug (<i>Oegalus pugnax</i>)
___ Rice Leafhopper	___ Swarm Caterpillar
___ Rice Hispa	___ Rice Water Weevil (<i>Lissorhoptrus oryzophilus</i>)
___ Rice Midge	___ Rice Stalk Borer (<i>Chilo plejadellus</i>)
___ Least Skipper	___ Sugarcane Borer (<i>Diatraea saccharalis</i>)

13. OTHER DESCRIPTORS: If there are other characters that describe this variety, please indicate below:**REFERENCES**

- C. R. Adair *et al.* 1972. Rice in the United States: Varieties and Production. USDA Handbook No. 289 (Rev.), 124 pp.
- J. G. Atkins *et al.* 1967. An International Set of Rice Varieties for Differentiating Race of *Pyricularia Oryzae*. Phytopath. 57:297-301.
- IBPGR-IRRI Rice Advisory Committee. 1980. Descriptors for Rice *Oryzae Sativa* L. International Rice Research Institute. 21 pp.
- K. C. Ling and S. H. Ou, 1969. Standardization of the International Race Numbers of *Pyricularia Oryzae*. Phytopath. 59:339-342.
- B. D. Webb *et al.* 1985. Utilization Characteristics and Qualities of United States Rice. In Proceedings on Rice Grain Quality and Marketing. International Rice Research Institute (IRRI), Los Branos, Philippines. P. 25-35.

Table 1 - Rice variety reactions¹ to diseases (2009)

Variety/ Hybrid	Sheath Blight ¹	Blast ²	Straighthead	Bacterial Panicle Blight	Narrow Brown Leaf Spot	Stem Rot ³	Kernel Smut	False Smut	Brown Spot	Lodging	Black Sheath Rot
Catahoula	VS	R	MS	S	MR	S	S	S	R	MR	MS
Cheniere	S	S	MR	S	S	S	S	S	R	MR	S
CL 261	MS	MS	S	S	S	S	MS	S	R	MR	MS
CL 111	VS	S	S	S	VS	VS	S	S	R	MS	S
CL 131	VS	MS	VS	VS	VS	VS	S	S	R	MR	S
CL 142-AR	MS	S	MS	S	S	S	S	S	R	MS	S
CL 151	S	VS	VS	VS	S	VS	S	S	R	S	S+
CL 161	VS	S	MS	S	S	VS	S	S	R	MS	S
CL 171AR	VS	S	MS	S	S	VS	S	S	R	MS	S
CL 181AR	VS	S	MS	VS	S	VS	S	S	R	MR	S
Cocodrie	S	S	VS	S	S	VS	S	S	R	MR	S
Cybonnet	VS	R	R	S	S	VS	S	S	R	MS	S
Francis	MS	VS	MR	VS	S	S	VS	S	R	MS	MS
Taggart	MS	S	R	MS	MS	S	S	S	R	MS	MS
Templeton	MS	R	S	S	S	MS	S	S	R	MS	MS
Wells	S	S	MS	S	S	VS	S	S	R	MS	MS

¹ Reaction: R = Resistant; MR = Moderately Resistant; MS = Moderately Susceptible; S = Susceptible; VS = Very Susceptible. Reactions were assigned based on cultivar assessment data collected across multiple locations and years in Arkansas, and data from the LSU rice pathology program (D. Groth, were also utilized). In general, assessment data were collected using published 0-9 severity scales for the respective disease, and from sites where conditions favored uniform disease severity across varieties. Locations included on-farm rice disease monitoring program test sites, URRN test plots, ARPT test plots, grower fields, rice disease nurseries at the Rice Research and Extension Center near Stuttgart and the Pine Tree Branch Experiment Station near Colt and fungicide test plots in Arkansas; and the LSU Rice Station (Crowley, LA). Reactions above would be expected in commercial fields where conditions strongly favor development of one or more of the listed diseases.

² Based on reaction to common races of the rice blast fungus in Arkansas. Race IE-1k of the blast pathogen is relatively rare in the state, but can attack all varieties with primary resistance conferred by the Pi-ta blast resistance gene (e.g. Banks). Because of the ability of the blast fungus to develop new races and overcome host resistance, all rice varieties (including hybrids) should be monitored annually for blast symptoms and suspect samples submitted to the Cooperative Extension Service Plant Health Clinic thru the local county extension office for testing and confirmation.

³ Other Notes: Most cultivars will be susceptible to stem rot under low K and high N conditions. Bengal and certain other cultivars become very susceptible to brown spot under low K conditions. Low soil K may also increase other diseases, including sheath blight, narrow brown leaf spot, etc. Most cultivars are susceptible to false smut under high N, late planted conditions. Kernel smut, false smut and many other diseases are increased by excessive nitrogen fertilization, especially when applied at pre-flood.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E
 STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S) Board of Trustees of the University of Arkansas, N.A.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER STG05IMI-01-113	3. VARIETY NAME CL 142-AR
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 2404 N. University Avenue Little Rock, Arkansas 72207-3608	5. TELEPHONE (Include area code) (479) 575-6884	6. FAX (Include area code) (479) 575-8646
7. PVPO NUMBER		#201000280

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. YES NO

9. Is the applicant a U.S. national or a U.S. based entity? If no, give name of country. YES NO

10. Is the applicant the original owner? YES NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)? YES NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company? YES NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

PLEASE NOTE:

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

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. 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 UPOV 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.
3. 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 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

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

**EXHIBIT F
DECLARATION REGARDING DEPOSIT**

NAME OF OWNER (S) The Board of Trustees of the University of Arkansas, N.A.	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 2404 North University Avenue Little Rock, Arkansas 72207-3608	TEMPORARY OR EXPERIMENTAL DESIGNATION STG05IMI-01-113
		VARIETY NAME 'CL 142-AR'
NAME OF OWNER REPRESENTATIVE (S) Jondle & Associates, P.C. Attn: Barbara Campbell, Esq.	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 858 Happy Canyon Road, Suite 230 Castle Rock, Colorado 80108	FOR OFFICIAL USE ONLY PVPO NUMBER #201000280

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Mal Jone
Signature

12-18-04
Date