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Enter required information and upon completion, return to nvrbaosca.org
by clicking on this link and attaching the application.**

**ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES
NATIONAL ALFALFA & MISCELLANEOUS LEGUME VARIETY REVIEW BOARD
ALFALFA APPLICATION – PART B – 2021**

This application – Part B – must be submitted along with Part A

(Please remember, you only need to submit ONE Part A application for multiple Part B applications)

**Please email the completed applications to: nvrbaosca.org
Association of Official Seed Certifying Agencies**

All information provided on this application shall be maintained in complete confidence by the Association of Official Seed Certifying Agencies (AOSCA), its staff, and individual members of the AOSCA National Variety Review Board. Each member of the Review Board will be required to sign a statement to this effect prior to receipt of any applications for review. Upon completion of the review process, reviewers will be required to destroy or delete all applications in their possession. One copy of each application will be maintained on file in the AOSCA office.

**APPLICATION FOR REVIEW OF ALFALFA (*Medicago sativa* L.) VARIETIES
FOR CERTIFICATION**

Applicant Big-Time Alfalfa Company

Variety Name NuAlfalfa 101 Experimental Designation(s) BGT XXX-101

**IT IS THE APPLICANT'S RESPONSIBILITY TO SUBMIT AN AMENDMENT APPLICATION
FOR NAME CHANGE WHEN THE PERMANENT VARIETY NAME HAS BEEN SELECTED.**

- I. Origin, breeding history, and varietal maintenance
 - A. Provide a statement of origin describing breeding procedures or methods and selection criteria used in developing the variety. The statement should include the following information:
 1. Breeding method.
 2. Germplasm sources and percentages.
 3. Selection criteria - specific traits. Indicate race/strain of pests used in selection.
 4. Number of clones and plants comprising a synthetic variety.
 5. Breeder seed production:
 - a. How seed was bulked (e.g., equal weight of seed from each clone).
 - b. Synthetic generation of breeder seed (e.g., Syn 1, Syn 2, etc.).
 - c. Location and year of first breeder seed production.

NuAlfalfa 101 is a synthetic variety comprised of six parent clones. The parent clones trace to breeding populations selected for forage yield, forage quality, persistence, and resistance to one or more of the following pests: bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, anthracnose (Race 1), *Phytophthora* root rot, *Aphanomyces* root rot (Race 1 and Race 2), and northern root knot nematode. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various experimental populations developed by Big-Time Alfalfa. Seed was harvested in total on all parents in an isolated block planted near Nampa, ID in 2006 and bulked to form breeder seed.

B. Seed classes to be used, limitations on age of stand, and areas of production for each class.

Seed Class	Synthetic Generation	Length of Stand Allowed	Limitation on Area for Seed Production
Breeder	1	2	San Joaquin Valley
Foundation	2	2	None
Certified	2 or 3	4	None

Only the synthetic generations given for the above seed classes are recognized as representing this variety. **No supporting data should be used in this application from Syn. Generations other than those for the Breeder, Foundation, and Certified classes listed here.**

C. Describe methods or procedures to be used for maintaining breeder and foundation seed stock. State the party to be responsible for maintaining seedstock and where seedstock will be maintained.

Multiple harvests of Syn 1 breeder seed were placed in cold storage at applicant’s research facilities in California. The quantity is sufficient to produce foundation (Syn 2) seed for the anticipated life of the variety. Applicant will contract for production of Syn 2 and Syn 3 seed. Production of Syn 2 foundation seed requires oversight by the applicant.

D. State any additional requirements or limitations considered necessary to maintain varietal characteristics.

None stated.

II. Primary usage, areas of adaptation, and areas of intended culture.

A. Describe the probable primary usage of this variety: **Hay, haylage, greenchop, dehydration, or other uses.** (If for uses other than hay, haylage, greenchop, or dehydration, additional claims will require data in III. D.)

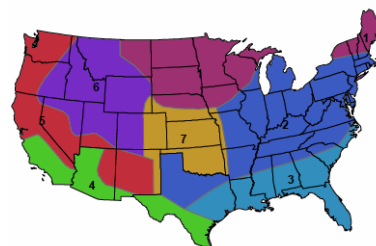
This variety will be suitable for all of the primary uses cited above.

B. List states and/or provinces and countries where this variety has been tested for forage yield, winterhardiness, and/or persistence (Present data in III. A and III. B).

The variety has been tested in Idaho, Wyoming, and Utah

C. Areas of adaptation and intended culture. (Use region map and terminology for areas of adaptation).

- 1 = North Central 2 = East Central 3 = Southeast
- 4 = Southwest 5 = Moderately Winterhardy Intermountain
- 6 = Winterhardy Intermountain 7 = Great Plains
- 8 = Other (*Specify*) _____



1. State areas of adaptation (must be supported by test locations and data).

Moderately winterhardy and winterhardy intermountain

2. State areas of intended culture.

Moderately winterhardy and winterhardy intermountain

III. Provide evidence of agronomic performance, including data on yield (in T/A) and persistence. Data may be from tests conducted by private firms, Agricultural Experiment Stations, or USDA.

A. Forage yield data are required from at least six location-years from **at least** two locations within the stated areas of adaptation. Two locations must be at least 100 miles apart. If the variety is designated for a limited area of use, the 100-mile restriction may be relaxed; however, there must be strong justification and documentation accompanying such a request. Seeding year forage yield data cannot be used to satisfy this requirement. **One location must have at least two harvest years beyond the seeding year.** Each harvest year should be listed separately.

Note: For non-dormant varieties (dormancy level of Moapa 69 or CUF 101), seeding year data may be accepted for up to two of the six location-years when four or more cuttings are made in the seeding year.

Summarize forage yield data below (Insert check variety names in appropriate columns):

-----Total Yield (DM in T/A)-----

Test Location	Date Planted Mo/Yr	Syn Gen	Year Harvested	No. Cuts	This Variety	Check 1 (AAAA)	Check 2 (BBBB)	Check 3 (CCCC)	LSD .05	CV%
Nampa ID	08/06	1	2007	4	7.97	7.80	7.80	6.75	0.35	7.0
			2008	4	6.22	5.90	6.10	5.50	0.40	6.5
			2009	4	7.40	7.10	6.80	6.25	0.30	5.0
Ogden, UT	08/06	1	2007	4	8.20	8.30	7.60	7.15	0.60	5.4
			2008	4	7.70	7.10	7.10	6.45	0.54	6.1
			2009	4	7.40	7.10	6.90	7.00	0.55	5.3
Powell, WY	08/07	1	2008	4	7.50	7.20	7.15	6.10	0.25	5.0
			2009	4	7.60	7.00	7.05	6.75	0.30	4.0
			2010	4	7.40	6.90	6.90	6.80	0.25	5.5

-----Mean Annual Yield-----

Variety names	# of Years Harvested	Total # of Harvests	Tons DM/Acre			
			This Variety	Check 1	Check 2	Check 3
This variety	9	36	7.49			
Check 1 (name)	9	36	7.49	7.16		
Check 2 (name)	9	36	7.49		7.04	
Check 3 (name)	9	36	7.49			6.53

B. Persistence.

Enter dates of both initial and final stand estimates. **Data must come from the area of adaptation and from stands at least 24 months old.** Comparison data are needed on two (2) check varieties.

Test Location	Syn Gen	Date Seeded Mo/Yr	No. of Years Harvested	No. of Harvests	Date of Readings (Mo/Yr) (Initial)(Final)	This Variety Initial/Final	---Check Varieties---		LSD .05	CV%
							AAAA	BBBB		
							Initial/Final	Initial/Final		
Nampa, ID	1	08/06	3	8	(10/06)(10/09)	100/91	100/86	100/83	4	8.3

C. Fall dormancy as determined from spaced plantings relative to three (3) **standard** check varieties; **check varieties must be chosen so as to bracket the dormancy class claimed for this variety.**

1. Test data

Test Location	-----Score or Average Height-----						
	FDC ¹	Dormancy Score or Average Height	Syn Gen	Date of Last Cut (Mo/Yr)	Date Measured (Mo/Yr)	LSD .05	CV%
This Variety	4	21 in	1	09/07	10/07	4.1 in	4.5
Check Varieties – enter data next to appropriate check variety							
Maverick	1.0						
Vernal	2.0						
5246	3.0	15 in					
Legend	4.0	20 in					
Archer	5.0	23 in					
ABI 700	6.0						
Doña Ana	7.0						
Pierce	8.0						
CUF 101	9.0						
UC-1887	10.0						
UC-1465	11.0						

1. Fall dormancy class used by NAFA.

Scoring system used: Regrowth in inches

C. Fall dormancy as determined from spaced plantings with check varieties. **Standard check varieties for comparison must be chosen so as to bracket the Fall Dormancy Class (FDC) claimed for this variety.**

Test conducted by Fred F. Lintstone at Arlington, WI

Date of Last Cut (Mo/Yr): 09/2014 Date Measured (Mo/Yr): 10/2014

Method used to Assign Fall Dormancy Class: Comparison Regression

1. Test data

	Variety	Fall Dormancy Class	Year Tested	Syn Gen	Unadjusted FDR	Regression Adjusted FDR	Fall Dormancy Class
	Test Variety				24		4
VD	Maverick	1					
D	Vernal	2					
D	5246	3					
MD	Legend	4			19		
MD	Archer	5			25		
MD	ABI 700	6			29		
ND	Dona Ana	7					
ND	Pierce	8					
VND	CUF 101	9					
VND	UC-1887	10					
VND	UC-1465	11					
	Test Mean:				23		
	L.S.D. _(0.05%)				2.4		
	C.V. (%)				7.5		
For Regression Method							
					Coefficient of Determination (r ²)		
					t-critical <small>α/2 = 0.025, df = 10</small>	2.228	StErr \hat{Y} =
					t-calculated <small>α/2 = 0.025, df = 10</small>		

Regression Equation (if used): _____

VD (Very Dormant) / D (Dormant) / MD (Moderately Dormant) / ND (Non-Dormant) / VND – Very Non-Dormant)

2. Indicate which of the following fall dormancy classes this variety is most similar to (Insert X).

Very Dormant	Dormant	Moderately Dormant	Non-Dormant	Very Non-Dormant
FD 1 ()	FD 2 ()	FD 4 (X)	FD 7 ()	FD 9 ()
	FD 3 ()	FD 5 ()	FD 8 ()	FD10 ()
		FD 6 ()		FD11 ()

D. Special claims (winter survival, forage quality, grazing tolerance, etc.)

1. Winter survival as determined from spaced plantings relative to standard check varieties; check varieties must be chosen so as to bracket the winter survival data of this variety. Data for check varieties in classes 1 through 6 must be included. This claim must be supported by data from at least two (2) independent trial/location years. A single test run at one location for two (2) consecutive years is insufficient.

Test Location	Syn Gen	Date Planted (Mo/Yr)	Date Measured (Mo/Yr)	This Variety	-----Winter Survival Rating-----						LSD .05	CV%
					1	2	3	4	5	6		
					ZG 9830	5262	WL325 HQ	G-2852	Archer	CUF 101		
Nampa, ID	1	08/06	05/06	3.4	1.5	2.0	2.8	3.5	4.2	5.0	0.44	11.6
Powell, WY	1	08/07	05/08	3.7	1.1	2.1	2.6	3.7	4.4	5.0	0.51	9.0

Indicate the winter survival class to which this variety is most similar by inserting an {X} inside the brackets.

1 { }	2 { }	3 { }	4 { X }	5 { }	6 { }
Extremely Winterhardy (ZG 9830)	Very Winterhardy (5262)	Winterhardy (WL325HQ)	Moderately Winterhardy (G-2852)	Slightly Winterhardy (Archer)	Non-Winterhardy (CUF 101)

2. Forage Quality: applicants wishing to provide quality data should visit www.naaic.org for the standardized test and reporting requirements. Once completed, please cut and paste that information into this application.

IV. Other descriptive characteristics

A. Flower color at full bloom. Syn. generation observed 2
 (See USDA Agriculture Handbook No. 424 - A System for Visually Classifying Alfalfa Flower Color.)

95 % Purple _____ % Cream _____ % Yellow 5 % Variegated _____ % White

- B. Document other distinctive characteristics such as pod, leaf, or root traits, biochemical markers, etc.
 1. Multifoliolate leaf expression as determined on spaced plants relative to standard check varieties. **Check varieties must be chosen so as to bracket the multifoliolate leaf expression data of this variety.**

MULTIFOLIOLATE LEAF EXPRESSION

Test conducted by _____ at _____

Variety	Multifoliolate Leaf Expression Score	Year Tested	Syn Gen	MFI	%MF
Test Variety	Low				
	MFI	Range			
1. Vernal	1.00	1.00-1.05			
2. Legend	1.86	1.40-2.40	Low		
3. MultiKing I	2.55	2.00-3.00	Moderate		
4. Proof	3.35	2.80-3.80	High		

Test Mean:
L.S.D. (.05%)
C.V. (%)

This variety is most similar in multifoliolate leaf expression to the check variety indicated below (X):

<u>High MF</u>	<u>Moderate MF</u>	<u>Low MF</u>	<u>Trifoliolate</u>
Proof ()	MultiKing I ()	Legend (X)	Vernal ()

V. Pest Reaction Characteristics

PLEASE FOLLOW THESE INSTRUCTION CAREFULLY WHEN REPORTING PEST REACTION RESULTS.

Furnish comparative data on the following insects, diseases, and nematodes (include others where applicable) for your variety. Data may be from tests conducted by private firms, agricultural experiment stations, or USDA. Tests must be conducted by standard procedures and scoring systems as described in the most current version of the NAAIC Standard Tests to Characterize Alfalfa Cultivars unless they were either completed or in progress prior to the amendment. Each disease, insect, and nematode test must include designated resistant and susceptible checks. Tests using unadjusted data showing a resistant or susceptible check falling outside of acceptable ranges will not be accepted. Statistics must include the test mean (mean of all entries in test), LSD (.05), and CV (%) for unadjusted % resistance and ASI data that are reported. All data are to be adjusted based on the resistant check. Resistance levels should be characterized using % resistant plants as follows: S = <6%, LR = 6-14%, MR = 15-30%, R = 31-50%, HR = >50%. When tests are characterized as to “tolerance”, that word may be used for the percent resistance reaction. Checks must be characterized based on long term % resistance average published in the most current version of the NAAIC Standard Tests to Characterize Alfalfa Cultivars Use the following formula:

$$\frac{\text{Adjusted \% R Check}}{\text{Unadjusted \% R Check}} \times \text{Unadjusted \% R Variety} = \text{Adjusted \% R Variety}$$

NOTE: If a pest reaction of the variety falls on or just above an adjusted resistance category level ***(+2% for LR, MR, and R; +3% for HR)** and the higher rating is claimed, results of a second test must be reported. If the two tests do not agree, the lower rating is appropriate unless further testing supports the higher rating. Pest resistance data must be approved on at least six of the following pests: anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, stem nematode, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, Aphanomyces root rot (race 1), root-knot nematode. Further traits to characterize the variety may be submitted. Disease ratings should be reported to the nearest whole number. For pests where no data is available enter: **Not Tested**. The six required pests **must** be selected from those that frequently cause significant losses on susceptible cultivars in the area of intended use of this variety. (Visit www.naaic.org for new or updated tests). When multiple standardized tests are available to test for a trait, the test used must be indicated with the data.

Applicants wishing to submit revisions to previous applications should use an approved form entitled Application for Amendment to Original Application.

* (Two agreeing tests are needed for: LR = 6 and 7; MR = 15 and 16; R = 31 and 32; and HR = 51, 52 and 53%)

ANTHRACNOSE DISEASE (Race 1) Kind of test conducted: Greenhouse YesTest conducted by _____ at _____
Name of entity conducting test Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety	HR	2008	2	63	64	
1. Arc	HR			64	65	
2. Saranac AR	R					
3. Saranac	S			0	0	
4.						
Test Mean:				55		
L.S.D. (.05%)				5		
C.V. (%)				8		

BACTERIAL WILT DISEASE Kind of test conducted: Field Yes Greenhouse _____Test conducted by _____ at _____
Name of entity conducting test Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety	HR	2008	2	71	79	
1. Vernal	R			38	42	
2. Narragansett	S					
3. Sonora	S			3	3	
4.						
Test Mean:				40		
L.S.D. (.05%)				5		
C.V. (%)				6		

FUSARIUM WILT DISEASE Kind of test conducted: Field _____ Greenhouse YesTest conducted by _____ at _____
Entity doing testing Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety	HR	2008	2	72	78	
1. Agate	Field HR			50	54	
Agate	GH					
2. Moapa 69	Field HR					
Moapa 69	GH					
3. Narragansett	Field MR					
Narragansett	GH					
4. MNGN-1	S			0	0	
Test Mean:				35		
L.S.D. (.05%)				6		
C.V. (%)				9		

VERTICILLIUM WILT DISEASE**Kind of test conducted:** Greenhouse YesTest conducted by Entity doing testing at Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety	HR	2008	2	56	61	
1. Vertus	R					
2. Oneida VR	HR			55	60	
3. Saranac	S			3	3	
4.						
Test Mean:				41		
L.S.D. (.05%)				4		
C.V. (%)				7		

PHYTOPHTHORA ROOT ROT DISEASE**Kind of test conducted:** Field _____ Greenhouse _____ Seedling _____

Test conducted by _____ at _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1. WAPH-1 (seedling)	HR					
2. MNP-D1 (seedling)	R		NOT TESTED			
3. Agate	R					
4. Saranac	S					
Test Mean:						
L.S.D. (.05%)						
C.V. (%)						

APHANOMYCES ROOT ROT DISEASE**Race 1** X **Race 2** _____**Kind of test conducted:** Greenhouse YesTest conducted by Entity doing testing at Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety	HR	2009	2	56	56	
1. WAPH-1 (Race 1)	R			50	50	
2. WAPH-1 (Race 2)	S					
3. WAPH-5 (Race 2)	R					
4. Saranac (Races 1 & 2)	S			0	0	
Test Mean:				35		
L.S.D. (.05%)				5		
C.V. (%)				7		

PEA APHID INSECT

Kind of test conducted: Greenhouse _____

Test conducted by _____ at _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1. CUF-101	HR					
2. PA-1	HR					
3. Kanza	R			NOT TESTED		
4. Baker	R					
5. Caliverde	S					
6. Moapa 69	S					
7. Vernal	S					
8. Ranger	S					
Test Mean:						
L.S.D. (.05%)						
C.V. (%)						

SPOTTED ALFALFA APHID INSECT

Kind of test conducted: Greenhouse _____

Test conducted by _____ at _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1. CUF-101	HR					
2. Baker	R					
3. Mesa Sirsa	R					
4. Kanza	R			NOT TESTED		
5. Caliverde	S					
6. Arc	S					
7. OK08	S					
8. Ranger	S					
Test Mean:						
L.S.D. (.05%)						
C.V. (%)						

BLUE ALFALFA APHID INSECT

Kind of test conducted: Greenhouse _____

Test conducted by _____ at _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1. CUF-101	HR					
2. OK51	R					
3. PA-1	LR					
4. Arc	S					
5. Caliverde	S					

NOT TESTED

Test Mean:
L.S.D. (.05%)
C.V. (%)

ROOT KNOT NEMATODE – Species Northern (*M. hapla*)

Kind of test conducted: Controlled environment ~ State GH or GC GC

Test conducted by Entity conducting test at Location of test

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
	R	2009	2	36	36	
	<i>M. hapla</i>					
1. Nevada Syn XX	HR			90	90	
2. Nevada Syn YY	HR					
3. Apollo II	S					
4. Lahontan	S			3	3	
	<i>M. incognita</i>					
	<i>M. javanica</i>					
1. Moapa 69	R					
2. Lahontan	S					
3. Caliverde	S					

Test Mean:
L.S.D. (.05%)
C.V. (%)

STEM NEMATODE **Kind of test conducted:** Controlled environment ~~ State GH or GC _____

Test conducted by _____ Company doing testing _____ at _____ Location tested _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1. Vernema	HR					
2. Lahontan	R					
3. Lew	R			NOT TESTED		
4. Ranger	S					
5. Moapa 69	S					
Test Mean: L.S.D. (.05%) C.V. (%)						

OTHER PEST EVALUATIONS **Kind of test conducted:** Field _____ Lab _____

Test conducted by _____ at _____

Variety	Resistance Class	Year Tested	Syn Gen	Unadjusted %R	Adjusted %R	Score
Test Variety						
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
Test Mean: L.S.D. (.05%) C.V. (%)						

Please attach a one-page description/summary of your variety as you wish it published for use by AOSCA member agencies. This description must stand on its own. Use complete sentences, and follow the format provided below, inserting your statements after the headings presented in the template on the next page. PLEASE DELETE THIS INSTRUCTION PAGE BEFORE SUBMITTING THE COMPLETED APPLICATION.

Crop

Variety Name Experimental Designation Name(s)

Origin and Breeding History:

Prepare a statement of origin that describes germplasm, breeding procedures or methods, and selection criteria used in developing the variety. Confidential business information is not required. The statement should include the following:

1. The name of the variety, its experimental designations, and the identity of the developer.
2. The breeding method(s) employed in the variety's development
3. Selection criteria including specific traits. Indicate race/strain of pests used in selection.
4. The year that breeder seed was first produced

Areas of Probable Adaptation:

State the probable geographic area of adaptation of this variety. Report the states where the variety has been tested for yield and proposed areas of intended use.

Agronomic and Botanical Characteristics

Describe the variety in terms of fall dormancy, flower color, and any other morphological or physiological characteristics that may be used as identifying traits. Indicate synthetic generation in which flower color was determined. Unless trace flower colors are present (less than 1%), numerical values must add up to 100%. If trace flowers are present, then numerical values must add up to 99.

Prepare a statement covering the variety's resistance to *Anthracnose* (Race 1), bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Phytophthora* root rot, stem nematode, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, *Aphanomyces* root rot (Race 1), root knot nematode, and other evaluated pests. Races and species should be indicated if known to exist.

Procedures for Maintaining Seed Stock:

Describe procedures for maintaining seed stock, seed classes to be used, limitations on age of stand and generations that may be certified, other requirements or limitations necessary to maintain varietal characteristics, and the entity that will be responsible for maintaining seed stocks of the variety. State the year in which breeder seed was first produced.

Certified seed Availability and Publication of Certified Seed Production

State when certified seed may first be offered for sale if this variety is recommended by official certifying agencies, State whether certified seed production acreage may be published by AOSCA and member agencies.

PVP Information:

State whether application will be submitted for protection under the Plant Variety Protection Act and if so, whether or not the Title V certification option will be requested (to be sold by variety name only as a class of certified seed).

As a means of enhancing varietal protection, state whether or not AOSCA may provide descriptive information about this variety to the PVP office.

Alfalfa

NuAlfalfa 101 BGT XXX-101 (Exp)

Origin and Breeding History

This is a six-clone synthetic variety that was developed using the isolated crossing block method. The selection criteria used in the evaluation of the parent clones comprising this variety included forage yield, persistence, and resistance to one or more of the following pests: anthracnose (Race 1), bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Aphanomyces* root rot (Race 1), and northern root knot nematode.

Areas of Probable Adaptation

NuAlfalfa 101 is adapted to the moderately winterhardy and winterhardy intermountain regions of the U.S. and similar environments. The variety has been tested in Idaho, Utah, and Wyoming.

Agronomic and Botanical Characteristics

NuAlfalfa 101 is moderately dormant, similar to the FD 4 check. It is moderately winterhardy. Flower color (Syn 2) is 95% purple and 5% variegated. It expresses a low degree of multifoliolate leafiness. The variety is highly resistant to *Aphanomyces* root rot (race 1), bacterial wilt, *Fusarium* wilt, and *Verticillium* wilt. It is resistant to northern root knot nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and foundation classes and two generations of the certified seed class. Production of Syn 2 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2006. Big-Time Alfalfa Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 2 and 4 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2020 if NuAlfalfa 101 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 2 years </u>
Registered	<u> </u>
Certified	<u> 4 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

Descriptive information can be provided to the PVP office.