"TROY"

REQUEST FOR PRELIMINARY INCREASE OF BREEDER SEED OF CA99901875W SPANISH WHITE KABULI CHICKPEA

Potential Cooperating Agencies: USDA-ARS, WSU, U of I, NDSU and UC-Davis

A. General Situation:

1. Need for variety. The chickpea industry is in need of an Ascochyta blight resistant Spanish White variety with good quality and acceptable yields. This release will fill that need for a high quality, blight resistant variety with exceptionally large and white seeds. The variety will complement the recent release of 'Sierra' Kabuli chickpea. This new variety will make available to producers a different market class of chickpeas that is in demand in the Spanish market. Available varieties of this type are highly susceptible to Ascochyta blight and require repeated applications of fungicides to control the disease.

2. Uses. The variety is a large seeded Spanish white type that will be used mostly for export. This type is used mostly for the packaging trade of large white chickpeas.

3. To supplant. This release is intended to supplant varieties such as 'Spanish White' variety and 'Blanco Lechoso', which are often grown in the Walla-Walla area but are known to be highly susceptible to Ascochyta blight.

B. Identification:

1.	Genus and species.	*Cicer arietinum* L.
2.	Selection number.	CA99901875W
3.	Proposed name.	Undecided "Troy"
4.	Pedigree.	X94C0005 BI Lech/2/CA188163/CA188620
5.	Other identification.	None

C. Description:

1. Plant. Plants of CA99901875W have medium height and are upright with a compound (fern) leaf structure. Plants average 15 inches tall (39 cm) (Table 6) with podding beginning at about 6 inches above ground level.

2. Seed. Seeds of CA99901875W are "ramshead" shaped, wrinkled and averaged 60.5 grams per 100 seeds from 2002 to 2004 and an estimated 750 seeds per pound (Table 7). This variety would be the largest seeded Ascochyta

blight resistant variety available for production. Seeds are white and similar to 'Blanco Lechoso' and 'Spanish White'.

D. Testing history

1. Years and locations. CA99901875W was entered into Western Regional Trials in 2003 and tested at 25 site years from 2003 to 2004 (Table 1).

CA99901875W was entered into the Preliminary Yield trial at Pullman in 2001 and was the highest yielding line in the trial. CA99901875W was entered into Advanced yield trials in 2002, 2003 and 2004 at Pullman, Washington, Walla Walla, Washington and Genesee, ID. CA99901875W did quite well in trials in 2002 but yields were reduced in 2003 because of the unusually hot and dry summer.

2. Yields in comparison with existing varieties (Tables 1, 2 and 3). In summary, yields of CA99901875W were better than the checks, Dwelley, Sanford in 2001 but similar in 2002. In 2003, yields of CA99901875 were inferior to the checks; however, the season was unusually hot and dry and it appeared that most of the fern leaf type selections were at a distinct disadvantage. Additional testing may be needed before a decision can be made about release. The relatively low yields at Walla-Walla may have been due to the extensive deer feeding on the trials in 2002. Plant traits and yield data for the individual sites of testing are presented in Tables 8 thru 15.

3. Evaluation of quality characteristics.

   a. General characteristics - Seed size is larger than Dwelley, and Sierra (Table 7). Seed size appears to be similar to that of Spanish White and Blanco Lechoso; however, we have not made a direct comparison of seed sizes of these latter varieties when grown at the same location.

   b. Taste panel evaluation - none

   c. Uniformity of size and color - very good

   d. Canning tests - being conducted

4. Resistance to diseases. The bulk population used to select CA99901875W was screened in the ascochyta blight nursery for several generations and seed was harvested from plants that survived the disease and used for further screening in subsequent years. CA99901875W was included in the Ascochyta blight screening nursery from 2001 to 2003 and was not particularly good in 2001; however, in 2002 and 2003, scores indicated a good level of resistance (Table 4). Scores for 2004 were similar to the Dwelley check.

5. Emergence characteristics. Excellent. Stands have not been a problem; however, the exceptional large seed size may cause problems with planting operations.

6. Flowering and Maturity. CA99901875W flowered an average of 63 days after planting compared to 66 days for Dwelley and 64 days for Sierra (Table 5). Days to maturity averaged one day later than Dwelley and Sierra (Table 5).

7. Weaknesses. Nothing apparent but the line is shorter than Dwelley.

E. Seed Source, Status and Increase Procedure.

1. The procedure being used to develop Breeder seed is from individual plant progeny rows that have been selected for uniformity of the plants and seed.

2. CA99901875W can be increased in the summer of 2005 from about 100 pounds of pre-breeder seed that is available. Further increases of Breeder seed can be made in the summer of 2006 and Foundation seed would be available to producers in spring 2007.

3. Based on the amount of seed available, there is a limited amount of seed available for commercial samples.

F. Other Comments. Producers should readily accept this variety because it has resistance to Ascochyta blight in a large seeded Spanish White type. The variety has exceptionally large and white seeds, which are desirable for the Spanish market. The need to replace blight susceptible Spanish White type varieties with resistant derivatives is an overriding factor in the release of CA99901875W.

G. Probable date for official release would be July 2006.

H. Plant Variety Protection is not recommended.

UPDATE June 14, 2007: Troy – A large seeded Spanish White type chickpea released in 2007 by USDA-ARS. Troy has improved resistance to Ascochyta blight when compared to Sanford and Dwelley and is a replacement for the earlier Ascochyta blight susceptible Spanish White type varieties. Its' extremely large seed size and bright white seed coat color are desirable quality traits and distinguish this variety from other releases. (ibid: WSU Extension publication "2007 Field Day Abstracts: Highlights of Research Progress, Novel Solutions to Traditional Problems")

USDA

United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

August 3, 2009

Ron Whittum
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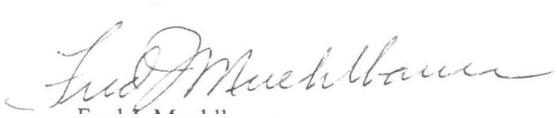
Dear Ron:

The purpose of this letter is to provide you with a supplemental description for the kabuli type chickpea 'Troy'. The variety description for Troy should include a tolerance for simple leaf type. Typical plants of Troy have medium height and are upright with compound (fern) leaf structure. However Troy has been found to contain small percentage of simple leaf type plants. This may be due to out-crossing as the seed from such plants looks typical of the kabuli type typical for Troy.

Reselections for plant type will continue to be made during the production of future generations of breeder and foundation seed. Until the percentage of simple leaf type plants can be reduced or eliminated through reselection, the variety description for Troy will include a variant description of up to .02% simple leaf type plants for all classes of certified seed. Other variation from the original description of this variety should not be considered true-to-type.

Best regards,



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