

To: Dale G. Smeltzer, Chairman
Certification Technical Committee

From: Roland L. Sanchez

Subject: Certification application for Mezcla, a new variety of dry baby lima beans (Phaseolus Lunatus).

Request is here-in made for certification of a new dry baby lima bean variety, Mezcla. All yield trials were conducted by R. L. Sanchez with the cooperation of U. C. Extension Service and Experiment Station personnel. The following information is supplied to comply with the requirements for certification.

A. Origin and Breeding Procedure

This variety was developed by bulk-population breeding. The bulk was started in 1950 by compositing 630 F2 seeds of each of the following crosses:

Henderson Bush	x	Wilbur
Wilbur	x	Hopi 5989
Wilbur	x	Hopi 2000
Westan	x	Hopi 2000
Westan	x	Hopi 5989
Westan	x	Hopi 13
Westan	x	Hopi 12
Hopi 2000	x	Hopi 12

The F2 through F12 generations were composed of approximately 1200 individuals. The F13 to F15 generations were made up of 1800 individuals. The only artificial selection made during this period was to truncate the seed size, that is, seeds that went through a 18/64 screen and seeds that went over a 32/64 screen were discarded. In the F15 generation 250 random plants were removed from the population. Progenies from 225 plants (25 discarded because of small seed numbers and general appearance) were grown in 1965. All 225 progenies were bulked and now compose 144 pounds of breeder's seed for release.

B. Adaptation

The variety is best adapted to areas where deep alluvial soils predominate such as the Yolo and Sorentto type soils. Mezcla has performed well in the baby lima producing area along the west side of the upper San Joaquin Valley. This variety is not recommended for the sub-irrigated areas of the Sutter County region; however, in some sub-irrigated areas it may be adapted since there has been no testing of Mezcla in the San Joaquin-Sacramento delta. This area has a completely different general environment from the northern sub-irrigated regions and may well be suited more to Mezcla than Wilbur, presently the most widely grown variety of baby lima bean.

C. Varietal Description

Mezcla has the following general phenotypic characteristics:

1. Vine type growth
2. Dark green leaves-darker than Wilbur, similar to Westan
3. Average weight of 100 seeds-38.6 grams
4. 120 day crop
5. 5.2 percent greater yield than the check variety, Westan, over a 3 year period in one location and 9.3 percent greater yield than the check Wilbur at another location.

D. Performance Data

The following chart represents average weight yield per acre values over a three year period except where noted:

	Meridian	Davis	Westley	Weighted Mean
Wilbur	29.3	32.2	31.4	31.0
Westan	26.6	31.4	36.5	31.5
Mezcla(B-15)	26.6	35.2*	38.4**	33.4
Primerio(B-66)	27.2	36.2***	33.6	31.8
LSD 5%	N.S.	2.5	1.5	

* Significantly different from Wilbur at the 5% level.

** Significantly different from Westan at the 1% level.

*** 2 years data-significant only from Westan

The yield data was gathered from randomized complete block experiments with plots 0.015 acres in size. A minimum of four replications was used for each test.

Disease and insect reaction has been noted not to be any different than the check variety.

E. Procedure for Maintenance of Stock Seed Classes.

It is suggested that no maintenance of stock seed be made in the classical sense. That is, all the present breeders seed should be increased and no "type" class retained. The agronomic characteristics that now set this variety apart from other varieties of lima beans should be verified at least every four years. The yield of Mezcla in reference to the standard varieties should be checked at least every four years in successive yield trials. Theory pertaining to bulk breeding states that if any change in gene frequency takes place there should be increased yield advantage as the population grows older. Therefore, it is not expected that any degeneration in yield will take place and yield checking will definitely confirm this, and general observation by University of California personnel and growers will keep the earliness in the variety.

F. Acknowledgement

The material for this variety was originated by R. W. Allard. It is due to his foresight that this variety can now be released.