REQUEST FOR RELEASE OF PS110028, GREEN DRY PEA

Cooperating Agencies: USDA-ARS, WSU, U of I, and OSU

A. General Situation:

1. **Need for variety** The dry pea industry is in need of a large-seeded smooth-green dry pea variety that has resistance to powdery mildew and with improved yields when compared to Columbian or Alaska 81. There is also a need for a green dry pea variety that is dark green and has good color retention qualities.

2. **Uses** The variety would be used as whole green peas or for splitting. Most of the crop would be exported.

3. **To supplant** This release would supplant Alaska 81 and possibly replace Columbian. This latter variety is maintained by the Processors.

B. Identification:

1. **Genus and species** *Pisum sativum* L.

2. **Selection number** PS110028

3. **Proposed name** Undecided

4. **Pedigree** F_4 selection made in 1990 from the cross Alaska81/MX1974

5. **Other identification** None

C. Description:

1. **Plant** Plants of PS110028 have a tall habit with long internodes and the flowering is indeterminate. The vine is generally non-branching with straight internodes. Leaflets are green and slightly marbled.

2. **Seed** Seeds of PS110028 are round, smooth and have dark green cotyledons. Seeds of PS110028 weigh an average of 22.0g/100 seeds (Table 6).

D. Testing history:

1. **Years and locations** Three locations (Genesee, Idaho; and Farmington and Pullman in Washington) each year from 1994 to 1996 (Tables 1-4). Preliminary evaluations were made in 1993 at Pullman (Table 5).

2. **Yields and comparison with existing varieties** (Tables 1 - 5). In summary, mean yields of PS110028 were better than the Alaska 81 and Columbian checks in 1994 and 1995, however yields of PS110028 were similar to Columbian in 1996. In preliminary tests in 1993, PS110028 was significantly higher yielding when compared to Columbian and Alaska 81. Yields of PS110028 at Minot, ND and Kalispell, MT were comparable or better than the Columbian check in 1995 (Tables 11 & 12).

3. **Evaluation of quality characteristics**

a. General cooking characteristics - Water uptake and conductivity of the soak water was comparable to the checks (Tables 7 to 8). However, hard seed percentage of PS110028 was somewhat higher than the checks (Table 9). Cooking time was about the same as the checks and the color after cooking was good in 1994, 1995 and 1996.

b. Taste panel evaluation - none

c. Adaptability to reconstitution - excellent

d. Adaptability to splitting - excellent

e. Uniformity of size and color - excellent

4. **Resistance to diseases or insects** PS110028 is resistant to powdery mildew and to race 1 of Fusarium wilt. Virus scores at Corvallis, Oregon (mostly Pea Enation Mosaic Virus) for PS110028 were lower than Alaska 81 or Columbian indicating that the line may have some tolerance to PEMV. Evaluations for resistance to Aphanomyces root rot, conducted at Prosser by John Kraft using pure cultures, indicated some tolerance to the disease.

5. **Winterhardiness** none

6. **Emergence characteristics** excellent

7. **Maturity** (in days from planting as compared to the Columbian check) PS110028 flowered at 61 days after planting or 8 days later than the check in 1994, 57 days after planting or 8 days later than the check in 1995, and 50 days after planting or 6 days later than the check in 1996. Even though PS110028 flowered later than the Columbian check in all three years, days to maturity was virtually the same for PS110028 and the checks at 105, 108 and 86 days in 1994, 1995 and 1996, respectively (Tables 2 - 4).

8. **Weaknesses** Nothing apparent thus far

E. Seed Source, Status and Increase Procedure:

We currently have about 400 pounds of seed of PS110028 that was produced at Spillman Farm in 1996 from seed tracing to single plant selections made in 1995. This seed can be considered Breeder seed that can be used to produce Foundation seed in 1997.

1. It is recommended that Foundation seed be produced in the summer of 1997 from the 400 pounds of seed that is available.

2. Small amounts of seed are available for commercial samples.

F. Other Comments:

This variety will be readily accepted by producers because of its improved quality characteristics and comparable or better yields when compared to Columbian. Quality traits indicate an improvement in size and color over currently used varieties. The selection is resistant to powdery mildew (a disease that was of epidemic proportions in 1993). That resistance should solve a serious problem with the production of dry peas and improve crop quality. The lower virus scores seem to indicate a degree of tolerance to one of the most important aphid transmitted viruses (PEMV) in the Palouse region.

G. Probable date for release would be June, 1997.