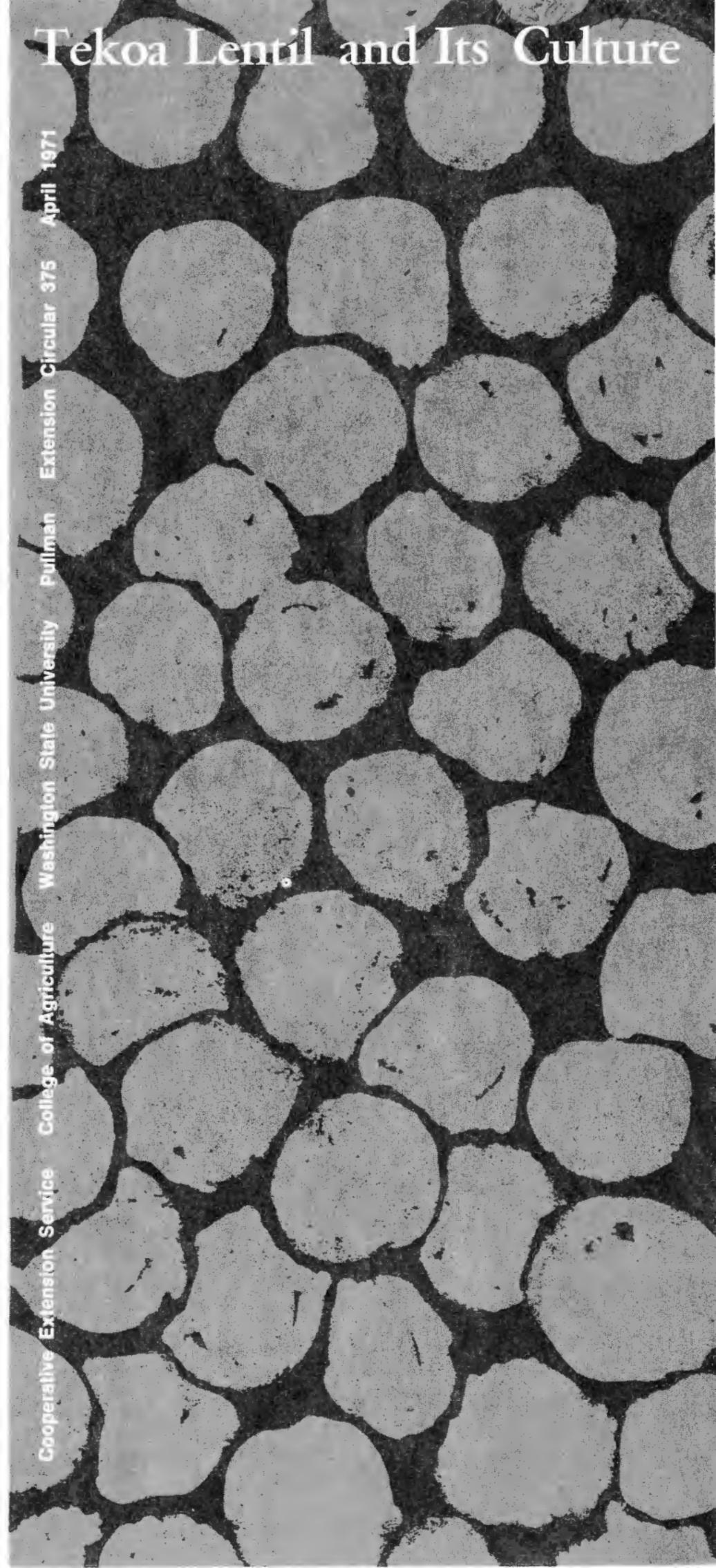


Tekoa Lentil and Its Culture

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Tekoa is the first improved lentil variety developed in the United States. It was released in 1969 by the U.S. Department of Agriculture in cooperation with the state agricultural experiment stations of Washington and Idaho.

Compared to Chilean, the most commonly grown lentil, Tekoa has larger seed size, a uniform seed coat color, and is void of seed coat mottling. Tekoa also produces greater seed yields (see the table), develops a vigorous root system and canopy, and gives better stands in cool, wet springs. Maturity, height, seed shattering, and threshability of Tekoa are similar to Chilean.

Sixty to eighty thousand acres of lentils are grown each year, and 95 per cent of the United States production comes from the Palouse area of eastern Washington and northern Idaho. Lentils are adapted to cool springs and fit well into rotations of winter wheat, barley, and dry peas.

Seed Yields and Agronomic Data Collected on Tekoa and Chilean Lentils During 1966-1968*

Variety	Seed yield (lbs/A)	Seed size (mm)	Vine height (in.)	Days to maturity	Laboratory germination (%)
Tekoa	1220	7.5	14	91	88
Chilean	1130	5.5	13	91	84

* Averages of three locations for each of three years in eastern Washington.

Seedbed Preparation and Seeding

Firm weed-free seedbeds on southern and eastern slopes, prepared and seeded early in the spring, generally are preferred for lentil production. It is usually best to plow in the fall and firm with a rod weeder or spring tooth harrow in the spring. When it is not possible to fall plow, spring plowing and harrowing should be completed as early as possible. Avoid deep cultivation that causes excessive moisture loss from the soil.

Since the seed is larger, seed Tekoa at about 70-80 pounds per acre compared to 60-



70 pounds per acre for Chilean lentils. Lentils planted early develop better, as they take advantage of early spring moisture and cool temperatures. Lentils are planted about 1 to 1½ inches deep when soil moisture is high and up to 2½ inches when soil moisture is lower.

Weed Control

Wild oats and broadleaf weeds are common in lentil fields. Although there is no herbicide cleared for use on broadleaf weeds in lentils, Diallate, Propham, and Barban are recommended for the control of wild oats.

Apply Diallate (Avadex) as a preplant soil treatment at about 1 pound of active ingredient per acre. Diallate is usually diluted in water, applied as a spray, and incorporated into the top 2 inches of soil with a harrow within two days before planting.

Propham is also applied as a preplant soil treatment at about 4 pounds of active ingredient per acre. Incorporate Propham by discing into the top 4 inches of soil within two days of seeding.

Barban (Carbyne) is not recommended for use on lentils except where wild oats are a serious problem. Apply Barban as a foliar spray when wild oats are in the two-leaf stage and when lentil plants have less than four leaves. Apply the compound at ⅓ pound of active ingredient per acre diluted in 5 to 10 gallons of water. Time of application is critical and poor weed control often results from im-

proper timing. Do not feed straw harvested from a crop that has been treated with Barban to livestock.

Lentil seedlings usually become well established in about three weeks after seeding. At that time some weeds can be eliminated from a badly infested stand by harrowing. Injury to stems and roots often occurs during harrowing and certain fungi can then infest the damaged plants, resulting in yield losses. For this reason, avoid harrowing unless it is apparent that weeds will be a serious problem.

Diseases

Tekoa, like Chilean lentils, is not particularly affected by root- and stem-rotting organisms, and foliar disorders are of minor importance. However, lentils are susceptible to many of the viruses which affect peas, clover, and alfalfa. Infected plants seldom produce seed. Since clover and alfalfa are often sources of viruses, locate lentil fields away from those crops.

Fertilization

Use soil tests to determine nutritional needs of lentils for maximum yields. Lentils usually do not require nitrogen fertilizer since plant requirements are normally fixed by bacteria in root nodules. For this reason, inoculation of lentil seed with nitrogen-fixing bacteria is recommended. Sulfur applied in previous cropping seasons and molybdenum used as a seed treatment at $\frac{1}{2}$ ounce of sodium molybdenum per acre are essential for maximum yields.

Harvesting

Lentils are most often harvested by mowing with a sickle-bar mower or a windrower. This is done when a majority of the pods turn creamy or golden color. At this time, a few of the older pods will be dry and all the seed firm.

Mowing should be completed before too many of the older pods are dried and seed shattering has begun. The vines are usually green when the pods are ready to harvest.

Mowing at night or in early morning when there is enough moisture to toughen the older pods will reduce shattering. Sharp, serrated mower sickles and ledger plates are required to do a good job of mowing lentils.

Weed plant juices often form a gummy substance on sickle bars. The gummy substance can be removed from the sickle bar by using water and a brush.

Lentils usually are allowed to dry to make threshing easier. A more important reason, however, is that green weeds usually infest lentil crops and deposit gummy substances on the threshing mechanism when not given a chance to dry.

Origin of Tekoa

The original selection and naming of Tekoa was made by V. E. Wilson, Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, at Washington State University. He made the selection in 1963 among plants produced from a mixed lot of seed collected in Russia and imported into the United States by the USDA Western Regional Plant Introduction Station. The lot of seed was assigned the Plant Introduction Accession Number 251,784. Dr. V. E. Youngman first planted the lot of mixed seed in 1961 at Pullman, Washington. Tekoa was tested in field trials in Spokane and Whitman counties, Washington, from 1964 through 1968. The variety was named for the town of Tekoa, Washington, which is located in Whitman County near the center of the lentil growing area of the Pacific Northwest.

Foundation seed of Tekoa was released in 1969 cooperatively by the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, and the Washington and Idaho Agricultural Experiment Stations and the Crop Improvement Associations of the two states. Foundation seed will be maintained by the Washington State Crop Improvement Association.

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Use of a trade name does not imply endorsement of one product over another.

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