

34  
THE GROWING OF CONDIMENT SEED PLANTS IN CALIFORNIA

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This is the time of year to be thinking about planting certain condiment seed crops according to results obtained in test plantings during the past year. Interest in growing these and many other specialty crops has been raised to a new high level because war conditions have to a large extent prevented us from importing these items from their former sources. By "condiment seed plants" we are referring particularly to the herb seed crops of the Umbelliferae or Carrot family, namely: Anise, Caraway, Celery (seed), Coriander, Cumin, and Fennel.

In cooperation with the Division of Drug and Related Plants of the U.S.D.A., the Division of Truck Crops of the University of California arranged test plantings at Davis, at the U.S. Cotton Field Station at Shafter, and at the Mololand Station near El Centro in order to determine the response at these varied latitudes of Central Valley conditions. Anise, Coriander, and Fennel were planted in such a way as to detect the optimum date of planting and space requirements.

All of these crops seem to conform somewhat to a general pattern of behavior. It was evident from all tests that plants behaved best when sown in Fall, particularly mid-October to mid-November, although in Kern County plantings made as late as mid-December were successful. Performance was much inferior in spring-planted crops due mainly to the fact that the plants flower and ripen seeds prematurely. Also, during the warm summers of the Interior Valleys, seed setting is poor especially in the case of Fennel. The fall plantings are at a disadvantage in respect to the weed problem. Weeds cause greater trouble in the region of more severe winters because the herbs are slower to gain the advantage and are subject to considerable wintertill. By far the most promising results were obtained in Imperial Valley where the weed problem is less serious.

Anise, Coriander, and Fennel seem well adapted to machine harvesting. Apparently quality is better when the crop is cut before the seeds are fully mature and dried in the field before threshing. Nevertheless it was possible to harvest the crops from standing plants by means of a combine without serious loss from shattering. Despite the amount of labor saved by machine harvesting a great deal of the cultivating in the plant row must be done by hand. In view of the present farm labor situation the feasibility of these crops is highly uncertain except under the most favorable growing conditions.

Condiment exports maintain that the domestic products compare quite favorably with the imported ones. The improvement in purity is given special praise.

Anise: The test plantings showed no tangible differences in growth or appearance between Spanish and Bulgarian Anise except that the former was much more susceptible to a form of rust at Shafter and the Mololand Station. Highest yields were obtained from 6-inch rows but fair yields, up to 500 lbs. per acre might be expected from 18-inch rows or double row beds spaced 36 to 42 inches apart. Plants should stand 4 to 8 inches apart in the rows. The winter survival was very poor at Davis during the 1941-42 season.

Caraway: Although no stand was secured in test plantings several commercial plantings have been observed. It is very important to plant fresh viable seed. Since Caraway is a biennial it must be planted during a very limited season in order to mature it within a year. Spring sowings mature the following spring; fall sowings require a year and a half; whereas plantings made during the late summer mature the following spring. Bed culture is satisfactory.



Coriander: This herb is the most satisfactory for California conditions. It tolerates winter better and yields higher than the rest of the condiments included in the experiments. A 1,000-pound per acre yield is not at all beyond expectation. Care must be exercised in combine harvesting not to break the seeds. Here again, rows drilled 6 inches apart yielded best but required excessive hand labor in cultivation. Rows 18 or 24 inches apart or the familiar two-row beds are quite satisfactory and plants should be spaced 6 to 10 inches apart.

Fennel: This item is of much less commercial importance than the above mentioned crops. Indian Fennel, a type which is of lower stature and less winter hardy than the Roumanian type and also the familiar roadside fennel, seems to be more desirable commercially. Eighteen-inch rows are to be recommended here.

In coastal valleys performance differs from that of the interior and there early spring sowings are permissible. Under the milder summer conditions of the Coast, Anise and Fennel have been observed to set abundantly.

Certain important factors should be duly considered by any prospective herb grower. The fall test plantings, especially those at Davis, point to a high labor cost in weed control. Where machine harvesting is not feasible, for instance, in the case of leaf herbs, the cost of harvest labor is apt to be prohibitive.

No farmer should plant any of these crops under any conditions without first having a contract for the sale of the seed or dried foliage.

The United States is not alone in the game of filling the gap opened by diminution of imports from Europe. For instance, we are now importing celery seed from India and the effect of this new source has already been reflected in a drop of the market price from 80 cents to 47 cents per pound. Mexico and the Central and South American countries are also producing various herb crops. Competition against the low costs of production there might also affect prices in the near future. Since comparatively small amounts are needed, over-production is not at all unlikely. As an example, Caraway might be mentioned. The annual U. S. consumption would be supplied by approximately 6,000 acres at a reasonable yield per acre. Let this comparatively small acreage be exceeded and everyone knows what will happen. Furthermore, a price of about 50 cents per pound is close to the maximum which buyers will pay. At higher prices the users will do without it.

Except in a few minor instances these crops are not needed in the war effort. Of course, they do add to the palatability of food, yet when labor shortages are so acute, it is time to wonder if it is wise to invest in unessential and to a large extent uncertain crops. For farmers and others seeking the new and profitable, it would seem more advisable to concentrate on vegetables and other important food crops.



## YIELDS OF SUCCESSION PLANTINGS OF CONDIMENT PLANTS

DAVIS, 1941-42

Yields Expressed as Percentages of Yield of Sowing  
of October 16, 1942

Date of sowing	Bulgarian Anise SBP	Morocco Coriander NC	Morocco Coriander SBP	Indian Fennel MC & SBP	Roumanian Fennel SBP
Oct. 16, 1941	100%	100%	100%	*	100%
Oct. 30, 1941	63	70	114	100%	58
Nov. 14, 1941	102	98	90	72	44
Dec. 4, 1941	*	31	23	62	*
Mar. 3, 1942	*	16	19	3	0
Mar. 18, 1942	*	14	9	0	0
Apr. 2, 1942	*	*	*	0	0

\* Poor stand.