ratios, [washed bean drained weight (g)/soaked bean weight (g)] of 1.35 and 1.39, respectively. Textures measured with a Kramer Shear Press (2) were 48.9 kg/100g of cooked beans for Swan Valley and 44.5 kg 100 g^{-1} for Neptune. These data compared favorably with the 1.37 washed bean drain weight ratio and 46.8 kg 100 g^{-1} textured values obtained for Seafarer. Values are within the acceptable range of 1.30 to 1.50 for washed bean drain weight ratios and 40.0 to 60.0 kg 100 g^{-1} for textures of navy beans.

Breeder seed is maintained by the Michigan Agricultural Experiment Station, East Lansing, MI 48824, in cooperation with the Michigan Foundation Seed Association.

M. W. ADAMS, A. W. SAETTLER, G. L. HOSFIELD, A. GHADERI, J. D. KELLY, AND M. A. UEBERSAX (6)

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REGISTRATION OF 'AU DEWEY' BIRDSFOOT TREFOIL

'AU DEWEY' birdsfoot trefoil (*Lotus corniculatus* L.) (Reg. no. 7) was developed and released by the Alabama Agric. Exp. Stn., Auburn Univ. It was tested under the experimental designation AT-P and released in February 1985 as AU Dewey.

AU Dewey is a random mating population developed from open pollinated seed of 13 plants selected from two Yugoslavian plant introductions, PI 188556 and PI 251558. Selections were made in 1976 at the Auburn University Plant Breeding Unit, Tallassee, AL. Selection criteria were rhizomatous nature, prostrate growth habit, and general vigor and adaptation. Breeder seed is third generation increase of the original bulk without further imposed selection for these or other characters.

Stand persistence in northern Alabama pastures is excellent. In a 3 yr grazing trial, AU Dewey constituted 20 and 35% of the sward when originally seeded with tall fescue (*Festuca arundinacea* Schreb.) or orchardgrass (*Dactylis glomerata* L.), respectively (3). This is partially due to AU Dewey's high natural reseeding ability and high seedling vigor under Southeastern conditions. Seed germination of AU Dewey is greater than that of 'Viking', 'Dawn', or 'Empire' at high temperatures and under simulated drought conditions (2).

AU Dewey has a high yield potential in the Southeast when grown in monoculture or in mixed swards with grass (1,2). In grazing trials, AU Dewey-grass pastures gave high average daily gains and good beef production per ha. Beef gains per ha on AU Dewey trefoil -'Kentucky 31' tall fescue (with *Acremonium coenophialum* Morgan-Jones and Gams infection) pastures without N fertilization were 85% of that of the tall fescue alone when fertilized with 168 kg ha^{-1} N.

AU Dewey is expected to be best adapted to areas such as northern Alabama and Georgia. It is not adapted to the Lower South where warm season perennial grass competition is severe. Although AU Dewey has survived short periods of temperatures below −18°C in Alabama, it has not survived winters in the Central and North Central USA except under good snow cover.

Breeder seed of AU Dewey is produced and maintained by the Alabama Agri. Exp. Stn., Auburn Univ. Foundation seed will be produced by the Alabama Crop Improvement Association. Certified seed of AU Dewey will be produced and marketed on an exclusive basis by International Seeds, Halsey, OR, in accordance with the rules and regulations specified by the Alabama Crop Improvement Association.

J. F. PEDERSEN, R. L. HAALAND, AND C. S. HOVELAND (4)

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REGISTRATION OF ICCV 1 CHICKPEA

ICCV 1 cultivar of chickpea (*Cicer arietinum* L.) (Reg. no. 66), developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and tested by the All-India Coordinated Pulses Improvement Project (AICPIP), was released as ICCC 4 for general cultivation in Gujarat state of India by the Ministry of Agriculture, Gujarat, on 17 Aug. 1983.

ICCV 1 was developed through pedigree selection from a cross between H-208 and T-3 made in 1973–1974. It was bulked in the F_4 generation, following single-plant selection in F_2 and F_3. It was selected and bulked in 1975–1976 at ICRISAT's collaborative station at Hisar in northern India, as selection no. IC-7310-3-2-B-BH. ICCV 1 was included in the International Chickpea Screening Nursery of long-duration *desi* types (ICSN-B) in 1976–1977 in which, at 13 locations in India, it ranked 10th out of 100 entries giving a mean seed yield of 2048 kg ha^{-1}.

It was proposed for entry in the Coordinated Trials of the AICPIP as ICCC 4 in 1977–1978. It averaged 11% higher seed yield (2032 kg ha^{-1}) than the standard check cultivar, H-208, in 57 replicated tests conducted by AICPIP from 1977–1978 to 1981–1982. Subsequently, in the Minikit Trials on farmers' fields conducted in Rajasthan, Madhya Pradesh, and Gujarat states of India, ICCV 1 performed consistently well both under irrigated and nonirrigated conditions, thereby revealing its wide adaptability. Its responsiveness to inputs is illustrated by a seed yield of 2800 kg ha^{-1} obtained at ICRISAT Center, Patancheru, with fertilizer application and irrigation.

ICCV 1 is semierect, predominantly basal-branching (up to seven branches per plant), and of medium height (40 to 60 cm) in various environments in central India. It is of medium maturity, flowering in central India between 60 and 70 days after sowing and maturing in 110 to 140 days, depending upon the growing conditions. It has purple flowers with anthocyanin pigment present in all aerial parts of the plant. Shattering is not a problem. In common with most other cultivars grown in central India, ICCV 1 does not have resistance to wilt and root rots or to *Heliothis* pod borer. Nevertheless, its performance in this zone has been quite consistent.

ICCV 1 produces an average of 1.4 seeds/pod. The seeds are attractive to consumers. They are yellow to light brown and medium to large in size. They are larger than those of H-208, having a mean 100-seed mass of about 16 g, ranging from 13 to 18 g. The seed protein content ranges from 18.5 to 23.0% with a mean of about 21%. In cooking quality tests, whole-seed samples of ICCV 1 were grouped with lines having a short cooking time. In *dhal* (split-grain) preparations, ICCV 1 was of superior quality measured by cooking time, water absorption, and solids dispersal.

Breeders seed has been made available to the Ministry of Agriculture, Gujarat, and other institutions in India, and will be maintained by the Pulses Improvement Program, ICRISAT.

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References and Notes

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REGISTRATION OF 'BELANN' AND 'BELENZIAN' CRAMBE

'BELANN' (Reg. no. 1) and 'BelEnzian' (Reg. no. 2) crambe (*Crambe abyssinica* Hochst. ex R.E. Fries) were developed and released (25 June 1985) by the USDA-ARS at Beltsville, MD, as high yielding sources of erucic acid for the chemical industry. They were derived by introgressing germplasm from wild populations into the cultivar 'Indy' using the following crossing scheme: [(PI 384523 × PI 384529) × (PI 384530 × PI 370747)] × Indy. All PI's are from Ethiopia except PI 370747 which was collected in Turkey. The F_2 generation was produced in the greenhouse and evaluated in the field. Seeds from high yielding, short statured, early maturing plants were bulked, and F_3 plants were evaluated in the greenhouse at Beltsville for reaction to *Alternaria brassicicola* (Schw.) Wiltshire. F_4 seeds from tolerant plants were bulked and the population was evaluated for agronomic traits in the field. F_5 seeds were harvested from individual plants with good agronomic ratings and lines high in oil percentage and erucic acid were evaluated for agronomic traits in the field in individual rows. F_6 seeds were harvested from rows with good agronomic characteristics and those lines high in oil percentage and erucic acid were evaluated in yield trials at Beltsville. Homozygous lines C-47 and C-50, later named BelAnn and BelEnzian, respectively, were selected from those trials and evaluated regionally.

Plants of both cultivars mature in approximately 3 months and are erect, uniform, and may range from 0.6 to 1 m in height at maturity; leaves are large and ovate; flowering is indeterminate and mature fruits are spherical, one-seeded silicles, about 3 mm in diam., generally indehiscent, and tan in color. In 1983 regional trials, both produced yields comparable to those of the existing crambe cultivars Indy, 'Meyer', and 'Prophet' (Table 1). In 1984, BelAnn and/or BelEnzian produced yields greater than those of Indy, Meyer or Prophet at Ames IA, Clemson SC, Knoxville TN, Lincoln NB, Moscow ID, and Prosser WA. In the 1983 trials, both cultivars had higher percentage oil than Indy, Meyer, or Prophet at Lincoln NB and Fargo ND and BelAnn and/or BelEnzian had higher percentage erucic acid than Indy, Meyer or Prophet at Moscow ID, Lexington KY, Lincoln NB, or Fargo ND. BelAnn and BelEnzian are quite tolerant of chilling and of temperate summers, moderately tolerant of infection by *Alternaria brassicicola*, and could possibly produce two crops per season in the Northeast, Midwest, and Pacific Northwest if seeded in early spring and again in mid-summer. They may also have some potential in the South and Southwest as summer or winter annuals.

Table 1. Performance of 'BelAnn', 'BelEnzian', 'Indy', 'Meyer', and 'Prophet' in regional trials.

		1983			1984
Location	Entry	Yield	Oil	Erucic acid	Yield
		Mg ha^{-1}	%		Mg ha^{-1}
Ames IA	BelAnn	--	--	--	1.6a*
	BelEnzian	--	--	--	1.7a
	Indy	--	--	--	1.4a
	Meyer	--	--	--	1.5a
	Prophet	--	--	--	1.5a
Clemson SC	BelAnn	--	--	--	0.1a
	BelEnzian	--	--	--	0.2a
	Indy	--	--	--	0.1a
	Meyer	--	--	--	0.1a
	Prophet	--	--	--	0.1a
Experiment GA	BelAnn	--	--	--	1.0a
	BelEnzian	--	--	--	0.9a
	Indy	--	--	--	0.8a
	Meyer	--	--	--	1.1a
	Prophet	--	--	--	0.8a
Fargo ND	BelAnn	2.0a	20.7bc	52.8ab	--
	BelEnzian	2.0a	22.8a	53.8a	--
	Indy	2.1a	16.9ef	51.8abc	--
	Meyer	1.9a	18.8cde	50.0bc	--
	Prophet	2.0a	16.1f	46.8d	--
Knoxville TN	BelAnn	--	--	--	1.1a
	BelEnzian	--	--	--	1.2a
	Indy	--	--	--	0.9a
	Meyer	--	--	--	0.7a
	Prophet	--	--	--	1.0a
Lexington KY	BelAnn	0.9ab	19.7bc	49.8ab	--
	BelEnzian	0.9ab	21.0ab	47.8b	--
	Indy	0.9ab	20.7abc	49.3ab	--
	Meyer	1.0a	22.1a	49.5ab	--
	Prophet	0.7c	20.0bc	48.8ab	--
Lincoln NB	BelAnn	1.0a	17.7a	48.0a	1.7a
	BelEnzian	0.7a	13.3bc	44.8ab	1.3b
	Indy	0.9a	11.7bc	42.5bc	1.3b
	Meyer	0.6a	10.5c	40.0c	1.4ab
	Prophet	0.8a	12.9bc	45.0ab	1.6ab
Moscow ID	BelAnn	2.0a	26.0ab	53.8a	1.5a
	BelEnzian	1.8a	25.7b	54.0a	1.0a
	Indy	2.2a	27.3ab	52.5a	1.0a
	Meyer	2.5a	29.1a	52.8a	1.2a
	Prophet	2.0a	24.9b	52.3a	1.4a
Prosser WA	BelAnn	2.6bc	22.5c	50.5bc	2.4a
	BelEnzian	3.5a	23.0bc	53.8a	2.2ab
	Indy	3.2ab	25.9abc	54.0a	2.2ab
	Meyer	3.6ab	26.6ab	52.5ab	1.8b
	Prophet	3.2ab	27.5a	54.5a	2.1ab

* Values within a column and loction which are followed by the same letter are not significantly different at the 0.05 level according to Tukey's test.