proved vigor, leafiness, seed yield, coleoptile length, and seedling vigor. Breeder's seed was obtained by bulking the open pollination seed of 23 clones selected from a nursery consisting of 2100 second-cycle plants.

Bozoisky-Select has been significantly more vigorous and productive than the check cultivar 'Vinall' in range seedings. At eight semiarid range locations in Utah, Idaho, and Wyoming, it yielded 29% more forage than Vinall during the first two production years. Stand establishment of the new cultivar has been equal to or superior to Vinall in over 20 trials representing the Sagebrush (Artemisia spp.), shadscale (Atriplex confertifolia (Torr. & Frem.) S. Wats), greasewood (Sarcobatus vermiculatus (Hook.) Torr.), and Indian ricegrass (Oryzopsis hymenodes (Roem. & Schult.) Ricker) ecosystems. Bozoisky-Select had better seedling vigor and larger seeds than Vinall or 'Swift' in laboratory trials. Coleoptile length, a character associated with better seedling emergence from deep plantings, was significantly greater in Bozoisky-Select than in Vinall or Swift. Grazing trials indicate that the cultivar is equally palatable to grazing cattle as Vinall.

Recommended seedling rate for seed production is 2.5 kg/ha in rows spaced approximately 1 m apart. When drilling on rangeland, 7 kg/ha is recommended.

Breeder seed will be maintained by the ARS at Logan, Utah. Foundation seed will be produced from breeder seed by the SCS Plant Materials Center at Bridger, Montana, and should be available by Spring, 1985. For information regarding supplies of Foundation seed, contact local soil conservation districts and the crop improvement association of the state in which the seed is to be planted.

Registration of Germplasms

REGISTRATION OF FOUR SHORT DURATION FUSARIAUM WILT-RESISTANT KABULI (GARBANZO) CHICKPEA GERMPLASMS

Four short duration kabuli chickpea (Cicer arietinum L.) lines with resistance to Fusarium oxysporum f. sp. ciceri race-1 were developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. These lines ICCV 2 (GP-46) ICCV 3 (GP-47), ICCV 4 (GP-48) and ICCV 5 (GP-49) were released to breeders as ICRISAT-82001, ICRISAT-83006, ICRISAT-83004 and ICRISAT-83009 in April 1983. Seeds of kabuli chickpea are salmon white coloured and oval head shaped.

All were developed by pedigree selection in an artificially wilt-infested field on the research farm of ICRISAT, near Hyderabad. ICCV 2 and ICCV 3 were derived from the complex cross, [F₂ (K-850 × Gw-5/7) × P-458] × F₂ (L-550 × Guamuchil)-2. Plants without visible wilt symptoms were selected in the F₂ generation in the wilt-sick plot. Seed from one F₃ progeny that showed less than 10% wilt incidence were bulked as ICCX-752770-15P-BP (ICCV 2).

Plants without wilt symptoms were selected in another F₃ progeny and these seeds were bulked in the F₄ generation as ICCX-752770-13P-2P-BP (ICCV 2). ICCV 4 and ICCV 5 were derived from the cross, C-104 × CPS-1. The F₂ generation was planted in the off-season and the F₃ generation was planted in non-infested normal fields at Hyderabad. Single plants were harvested in the F₄.

Plants without wilt symptoms were selected in the wilt-infested field in the F₅ generations. Their F₆ progenies showed less than 10% wilt incidence and they were bulked as ICCX-790168-65P-4P-BP (ICCV 4) and ICCX-790168-65P-5P-BP (ICCV 5).

Bulk selection for acceptable kabuli type seed has been practiced in subsequent bulks of all the lines. Their wilt resistance has been confirmed in the wilt-infested field (race-1) and in artificially inoculated pots in a glasshouse. Despite the early generation of bulking, they are uniform in all morphological, phenological and wilt resistance characteristics. ICCV 2 flowers about 2 weeks earlier and matures about 3 weeks earlier than ‘Annigeri’, a desi (brown, angular seeds) type cultivar recently released in Peninsular India. ICCV 2 flowers and matures about 3 weeks earlier than ‘L-550’, the kabuli type cultivar most recently released in northern and central India. Seeds of ICCV 2 are about 15% heavier than those of L-550.

ICCV 3 flowers and matures 1 week earlier than Annigeri and 2 to 3 weeks earlier than L-550. Its seeds are much larger (75 to 90%) than those of L-550.

ICCV 4 and ICCV 5 flower and mature at about the same time as Annigeri. They flower up to 1 week earlier and mature 3 weeks earlier than L-550. Their seed sizes are 15% (ICCV 4) and 7% (ICCV 5) larger respectively than those of L-550.

All four lines are white flowered and the anthocyanin pigmentation is absent from other plant parts. ICCV 2 and ICCV 3 have a spreading growth habit with a few well-developed primary and secondary branches. ICCV 4 and ICCV 5 are taller (32 and 34 cm, respectively) than Annigeri (23 cm) and L-550 (25 cm) and produce profuse and well-developed primary and secondary branches. In unreplicated trials ICCV 2 and ICCV 3 yielded slightly less than ICCV 4 and ICCV 5 slightly more than Annigeri. They have the additional advantage of a considerable price premium for kabuli type seeds.

The combination of acceptable kabuli type seeds with short duration and wilt resistance did not occur in the world collection of chickpea germplasm maintained by ICRISAT. The short duration of ICCV 2, ICCV 3, ICCV 4, and ICCV 5 enable their cultivation in areas where growing seasons are restricted, notably in Peninsular India, where the maturities of previous kabuli types are too long in duration to produce seed yields competitive with desi types. Fusarium