inbred. Maturity is in the AES 900 range. It is a tall, vigorous-growing inbred with a fairly low ear placement. T226 has good stalk qualities but only a fair root system. The plants produce a large, single ear with a medium husk cover and it will produce a large, single-ear hybrid. The plants produce only a fair amount of pollen, but grain yield is good. The medium flat, dark yellow kernels are produced on a red cob.

T232 (Reg No. GP115), released in 1969, was selected from a cross between the varieties Jellicorse and Teko Yellow. Jellicorse[4] is a white prolific variety from Tennessee while Teko Yellow is a large-eared yellow variety from South Africa. Teko Yellow has good resistance to stalk and ear rots, viruses, and sorghum downy mildew (*Peronosclerospora sorghi*, Weston and Uppal). T232 has a maturity comparable to T204 (AES 1000). It is a tall, vigorous-growing inbred with upright leaves and a fairly high ear placement. The inbred has a tendency to root lodge, but the stalks remain green after the grain matures. Pollen production is good and grain yield is fair. This inbred produces two or three medium-sized, slightly tapered ears on each stalk and it imparts this character in hybrids. The medium-large, dark yellow kernels are produced on a red cob. The hard, dimple-dent grain imparts excellent grain quality in hybrids. T232 has high general combining ability. It has excellent resistance to the corn virus disease complex and transmits this resistance in hybrids. It also has good resistance to the corn earworm (*Heliothis zea*, Boddie), kernel and cob rots, and sorghum downy mildew caused by *Peronosclerospora sorghi*, Weston and Uppal.

REGISTRATION OF TIFRUST-13 PEANUT GERMPLASM[1]
(Reg. No. GP 30)

Ray O. Hammons, W. D. Branch, K. R. Bromfield, P. Subrahmanyam, V. R. Rao, S. N. Nigam, R. W. Gibbons, and E. Goldin[2]

TIFRUST-13 peanut (*Arachis hypogaea* L. ssp. *hypogaea* var. *hypogaea*) was named and released as a germplasm line 7 Dec. 1981 by the ARS, USDA, the Univ. of Georgia Coastal Plain Exp. Stn., the International Crops Research Institute for the Semi-Arid Tropics, and the Agricultural Res. Organization, Israel. The genotype has resistance to peanut rust caused by *Puccinia arachidis* Speg. in greenhouse and field tests conducted in Georgia, Puerto Rico, and India. It has a larger seed and greater productivity than most other sources of rust resistance.

Tifrust-13 (ICG 7883) was developed by mass selection in the USA and Puerto Rico from PI 315608, an accession from Israel Line 136. Line 136 was an off-type in an introduction from the USA whose specific source went unrecorded. The accession was resistant when inoculated in a greenhouse at Frederick, MD, with rust cultures from Texas and Puerto Rico. It exhibited little to moderate infection and damage to natural epiphytotics of rust at Tifton, GA, in 1976 and at Isabella, Puerto Rico, during three winter tests in 1977, 1978, and 1979. Higher yielding plants showing the least rust were selected annually to minimize phenotypic variation. The selected progeny were screened at ICRISAT in the 1979 rainy and the 1979-80 postrainy seasons with susceptible entries grown adjacent or interspersed to insure heavy disease development. Tifrust-13 rated three on a nine-point disease scoring scale, the same score as Tarapoto, the standard resistant germplasm.

Mainstems of Tifrust-13 produce only vegetative branches and these in turn produce an alternation of vegetative and reproductive axes, usually in pairs. Plants are semi-erect, and mature at about 135 days in Georgia. Standard petals are orange. Seed average 800–900 mg in weight, are dormant at harvest, and have an off-white testa (159C in the Royal Hort. Soc. Colour Chart). The genotype is suceptible to leafspots caused by *Cercospora arachidicola* Hori. and *Cercosporidium personatum* (Berk. and Curt.) Deighton.

Peanut rust, discovered in Paraguay in 1882, spread slowly through the Western Hemisphere, reaching the USA about 1920. Since then outbreaks have occurred in every state where the crop is grown commercially. During the past 13 years rust has spread throughout the world, and it is now a major cause of losses in yield and quality. The development of disease resistant cultivars would be a practical and effective method of controlling the disease.

For breeding research, 25 seed of Tifrust-13 will be provided upon written request and agreement to appropriately recognize its source as a matter of open record when this germplasm contributes genetic information or to the development of a new cultivar.

Seed stocks will be maintained and distributed by the Dep. of Agronomy, Univ. of Georgia Coastal Plain Stn., Tifton, GA 31793, and by the International Crops Research Institute for the Semi-Arid Tropics, Patancheru P.O., Andhra Pradesh 502 324, India.

[1]Registered by the Crop Sci. Soc. of Am. Cooperative investigations of ARS-USDA, Tifton, GA, and Frederick, MD; the Univ. of Georgia Coastal Plain Stn., Tifton, GA; the International Crops Research Institute for the Semi-Arid Tropics, Patancheru, AP, India; and the Agric. Res. Org., Ministry of Agric., Bet Dagan, Israel. Accepted 10 Feb. 1982.

[2]Supervisory research geneticist, ARS-USDA, and assistant geneticist, Univ. of Georgia Coastal Plain Stn., Tifton, GA 31793; research plant pathologist, ARS-USDA, Frederick, MD; plant pathologist, germplasm botanist, plant breeder, and plant breeder, ICRISAT, Patancheru, A.P. 502 324 India; and agronomist, Agric. Res. Organization, Bet Dagan, Israel, respectively.

REGISTRATION OF TIFRUST-14 PEANUT GERMPLASM[1]
(Reg. No. GP31)

Ray O. Hammons, W. D. Branch, K. R. Bromfield, P. Subrahmanyam, V. R. Rao, S. N. Nigam, and R. W. Gibbons[2]

THE peanut (*Arachis hypogaea* L.) line Tifrust-14 was developed cooperatively by ARS-USDA, the Univ. of Georgia Coastal Plain Stn., and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). It has moderate resistance to rust (caused by *Puccinia arachidis* Speg.) but lacks several desira-

[1]Registered by the Crop Sci. Soc. of Am. Cooperative investigations of ARS-USDA, the Univ. of Georgia Coastal Plain Stn., and the International Crops Res. Inst. for the Semi-Arid Tropics, (ICRISAT). Accepted 10 Feb. 1982.

[2]Supervisory research geneticist, ARS-USDA, and assistant geneticist, Univ. of Georgia Coastal Plain Stn., Tifton, GA 31793; research plant pathologist, ARS-USDA, Frederick, MD; plant pathologist, germplasm botanist, and plant breeders, ICRISAT, Patancheru, A. P. 502 324 India, respectively.

[3]Bromfield, K. R., and S. J. Cevario. 1970. Greenhouse screening of peanut (*Arachis hypogaea*) for resistance to peanut rust (*Puccinia arachidis*). Plant Dis. Rep. 54: 381-383.

[4]Hammons, R. O. 1981. Breeding peanuts for disease resistance: rust and leafspot. *In* J. C. Wynne and T. A. Coffelt (eds.). Proc. Peanut Brdg. Symp., Richmond, VA, 1980. North Carolina Agric. Res. Serv. Res. Rep. 80:52-58.

ble agronomic characters. It was released 11 Dec. 1982 as germplasm for peanut breeding programs.

Tifrust-14 (ICG 7882) was mass selected from a line (D. H. Timothy No. 200) collected as an unnamed local cultivar from a storekeeper in the village of Juanjui, Peru, who obtained seed from farmers cultivating it on sandbars of the Rio Guayabamba in 1966. It was introduced to the USA as PI 314817.

When 245 peanut accessions were inoculated in a dew chamber or plastic tent at Frederick, MD, between 1967 and 1969, PI 314817 was resistant to rust cultures from Puerto Rico and Texas.[3] Plants of this accession exhibited field resistance to rust when 700 *A. hypogaea* accessions were exposed to a natural epiphytotic at Tifton, Georgia in 1976. Resistance was confirmed at the USDA winter nursery in Puerto Rico during 1977, 1978, and 1979.[4]

Selected progeny from the line were among 6,000 peanut accessions evaluated for rust reaction in field trials at ICRISAT, 1979-81, where infector rows and spreader plants were used to insure uniformity of disease pressure. Tifrust-14 was among the most resistant lines in each environment.

Tifrust-14 has erect (bunch) plants with sparse, sequential branching, inflorescences in some main stem leaf axils, and other characteristics of *A. hypogaea fastigiata fastigiata*. Leaves are light green, flower standards are orange, and the fruit mature at about 135 to 140 days in Georgia. Pods are quite short and mainly three-seeded. Seed average 370 mg, lack dormancy at maturity, and have a light tan testa (179D, in Royal Horticulture Society Colour Chart). The genotype is moderately susceptible to the leafspots, *Cercospora arachidicola* Hori and *Cercosporidium personatum* (Berk. and Curt.) Deighton, in field trials in Georgia.

For breeding research, 25 seed of Tifrust-14 will be provided upon written request and agreement to appropriately recognize its source as a matter of open record when this germplasm contributes to the development of a new cultivar or genetic information.

Seed stocks will be maintained and distributed by the Dept. Agronomy Univ. of Georgia, Coastal Plain Station, Tifton, GA 31793, and by the International Crops Research Institute for the Semi-Arid Tropics, Panancheru P. O., Andhra Pradesh 502 324, India.

REGISTRATION OF FOUR SUGARBEET GERMPLASM LINES[1]
(Reg. No. GP66 to GP69)

J. S. McFarlane, I. O. Skoyen, and R. T. Lewellen[2]

FOUR sugarbeet (*Beta vulgaris* L.) breeding lines were developed by ARS-USDA in cooperation with the Beet Sugar Development Foundation. Breeder seed will be maintained at the U.S. Agricultural Research Station, P. O. Box 5098, Salinas, CA 93915.

C502-S_{25} (Reg. No. GP66) is the increase of a self-fertile, green hypocotyl, type O, multigerm line that had been selfed 25 times under paper bags in the greenhouse. C502, also known as NB1[3], has excellent combining ability and possesses good resistance to bolting and curly top. The increase of the S_3 of this line was widely used as a parent in commercial multigerm hybrid cultivars. The line will be useful in genetic and physiological studies requiring a homozygous, high-performing inbred.

C502aa (Reg. No. GP67) is a multigerm, self-fertile line that segregates for Mendelian male sterility and was produced from the cross C502aa × C502Aa. The line will segregate approximately 50% *aa*.

C512 (Reg. No. GP68) is the increase of a self-fertile, multigerm line that had been selfed 15 times. This inbred combines excellent bolting resistance with good curly top resistance. No bolters have been observed in California field tests with C512 (NB6[3]) regardless of the date of planting. The line will be of value as a source of bolting resistance and for use in genetic studies.

C554 (Reg. No. GP69) is the increase of a self-fertile, multigerm line that had been selfed 16 times and was derived from NB4[3]. This inbred combines resistance to stalk blight and bolting. Stalk blight is a serious disease of the sugarbeet seed crop in Oregon and is caused by *Fusarium oxysporum* sp. *betae*. When grown in fields severely infested with *Fusarium*, C554 rarely shows any stalk blight infected plants. The line will serve as a useful source of resistance to this disease and as a highly homozygous line for genetic and breeding studies.

[1]Registered by Crop Sci. Soc. of Am. Cooperative investigations of the ARS-USDA and the Beet Sugar Development Foundation. Accepted 26 Jan. 1982.

[2]Research geneticist, agronomist, research geneticist, respectively, ARS-USDA, Salinas, CA 93915.

[3]McFarlane, J. S., and I. O. Skoyen. 1965. Sugar beet breeding lines combining resistance to bolting and disease. J. Am. Soc. Sugar Beet Technol. 13:555-562.

REGISTRATION OF SUGARBEET GERMPLASM FOR CURLY TOP RESISTANCE[1]
(Reg. Nos. GP70 to GP72)

J. C. Theurer and D. L. Mumford[2]

THREE sugarbeet (*Beta vulgaris* L.) breeding lines resistant to curly top virus disease have been developed by ARS-USDA at Logan, Utah. These lines have been evaluated in cooperation with the Beet Sugar Development Foundation and the Utah Agric. Exp. Stn. A limited quantity of breeder seed of these lines is available for pro-rata distribution to bona fide sugarbeet breeders upon request to ARS, USDA, Sugarbeet Research, Crops Research Laboratory, UMC 63, Logan, UT 84322.

L34 (Reg. No. GP70) is an S_4, self-fertile, green hypocotyl, near type-O, multigerm inbred line selected for high resistance to curly top. It is more vigorous than L35 and has a curly top rating equal to L35.[3] It also has resistance to powdery mildew caused by Erysiphe polygoni, D.C. "type" with a rating of 2.0 on a O (resistant) to 5 (susceptible) disease rating scale. L34 has not been tested extensively for combining ability. However, a few hybrids with Logan CMS inbreds have shown root yield and sucrose percentage equal to that of GW Mono Hy D2 commercial hybrid.

L40 (Reg. No. GP71) is an S_4, self-fertile, type-O, multigerm inbred derived from a heterogeneous population of SL630 × CT5 sublines. During the past 3 years, L40 had an average curly top rating of 2.3 on the standard 1 to 9 scale, which is equal to the curly top rating of L35. Combining ability of this inbred has not been determined.

L50 (Reg. No. GP72) is an S_4, self-fertile, green hypocotyl, near type-O monogerm inbred selected from an SLC129 × SLC132 population. It is a vigorous inbred with an average curly top rating of 2.5, which was equal to L35 during the past 3 years.

[1]Registered by Crop Sci. Soc. of Am. Cooperative Investigations of the ARS, USDA, and the Beet Sugar Development Foundation. Accepted 26 Jan. 1982.

[2]Research geneticist and research plant pathologist, ARS, USDA, Logan, UT 84322.

[3]Theurer, J. C. 1978. Registration of eight germplasm lines of sugarbeet. Crop Sci. 18:1101.