

REGISTRATIONS OF CULTIVARS

Registration of 'Ouro Negro', a High Dinitrogen-Fixing, High-Yielding Common Bean

'OURO NEGRO' (Reg. no. CV-105, PI 562689), black bean class of dry bean (*Phaseolus vulgaris* L.), was tested cooperatively from 1983 to 1987 by the Empresa Brasileira de Pesquisa Agropecuária/Centro Nacional de Pesquisa de Arroz e Feijão (EMBRAPA/CNPAF), Goiânia, Goiás, Brazil; from 1987 to 1990 by the Empresa de Pesquisa Agropecuária de Minas Gerais (EPAMIG) in collaboration with the Universidade Federal de Viçosa (UFV) and the Escola Superior de Agricultura de Lavras (ESAL); and from 1989 to 1991 by the Empresa de Pesquisa Agropecuária do Estado do Rio de Janeiro (PESAGRO). Ouro Negro was released in 1991 by EMBRAPA/CNPAF, EPAMIG, PESAGRO, and UFV, for winter cultivation in Minas Gerais and Rio de Janeiro states, Brazil. The line, which may have originally been a genetic mixture, originated in Honduras and was introduced to Brazil by the Centro Internacional Agricultura Tropical (CIAT). Ouro Negro was selected at EMBRAPA/CNPAF from common bean entries in the CNPAF Active Germplasm Bank and was tested as CNF 480 and Honduras 35.

Ouro Negro has a semiprostrate to prostrate growth habit, intermediate between Type II and Type III. Seeds are dull (opaque) black similar to, but larger than, 'ICA Pijao'. In a 1985 trial at CNPAF, the 50-seed weight of Ouro Negro was 11.3 g, compared to 7.4 g for 'Rio Tibagi' (a standard Brazilian cultivar) and 8.2 g for ICA Pijao. Maturity of Ouro Negro is \approx 5d shorter than Rio Tibagi and ICA Pijao. Although this line was not selected specifically for disease resistance, field observations at EMBRAPA/CNPAF have indicated that Ouro Negro is resistant to Race alfa-Brasil of anthracnose, caused by *Colletotrichum lindemuthianum* (Sacc. & Magnus) Lams.-Scrib. (C. Rava, personal communication, 1986), and possesses at least a moderate level of resistance to bean rust, caused by *Uromyces appendiculatus* (Pers.: Pers.) Unger. The line is susceptible to angular leaf spot, caused by *Phaeoisariopsis griseola* (Sacc.) Ferraris; syn. *Isariopsis griseola* Sacc., and bean common bacterial blight, caused by *Xanthomonas campestris* pv. *phaseoli*, and does not carry the single dominant I-gene form of resistance to bean common mosaic virus.

Based on comparisons using total accumulated shoot N, ^{15}N isotope dilution, acetylene reduction activity, nodule mass, and grain yield of plants grown on soils where N is limiting (1), field trials in Brazil have shown that Ouro Negro fixes more atmospheric N_2 than Rio Tibagi and a comparable amount to previously released high N_2 -fixing germplasm lines WBR 22-3, WBR 22-8, WBR 22-34, WBR 22-50, and WBR 22-55 (2). Although actual levels of N_2 fixation vary with environmental conditions, the relative superiority of Ouro Negro compared to Rio Tibagi is consistent.

The grain yield of Ouro Negro has been consistently higher than that of Rio Tibagi and equal to or greater than other elite lines in evaluations where either fixed N_2 or fertilizer N is the primary N source. In the National Preliminary Yield Trials at eight sites in Brazil during the 1986–1987 growing season, the yield of Ouro Negro ranged from 700 to 2283 kg ha $^{-1}$ and ranked 4th among 36 entries, including four local cultivar checks, and exceeded that of the standard, Rio Tibagi, by 50%. In 14 trials in Minas Gerais from 1987 to 1990, Ouro Negro yielded 1772 kg ha $^{-1}$, compared with 1662 kg ha $^{-1}$ and 1503 kg ha $^{-1}$ for 'Rico 1735' and 'Milionário 1732', respectively. From 1989

to 1991, Ouro Negro outyielded 'BR1-Xodó' by 1792 to 1454 kg ha $^{-1}$ over 15 trials in Rio de Janeiro.

Application for plant variety protection has not been made for Ouro Negro. Breeder seed will be maintained by EMBRAPA/CNPAF.

R. A. HENSON,* P. A. A. PEREIRA, J. E. S. CARNEIRO,
AND F. A. BLISS (3)

References and Notes

1. Bean/Cowpea Collaborative Research Support Program. 1990. Final report. Identification of superior bean-rhizobia combinations for utilization in cropping systems suitable to small farms in Brazil, 1981–1989. Michigan State Univ., East Lansing, MI.
2. Bliss, F.A., P.A.A. Pereira, R.S. Araujo, R.A. Henson, K.A. Kmiecik, J.R. McPerson, M.G. Teixeira, and C.C. da Silva. 1989. Registration of five high nitrogen fixing common bean germplasm lines. *Crop. Sci.* 29:240–241.
3. R.A. Henson, EMBRAPA/CNPAF, Caixa Postal 179, 74001-970 Goiânia, Goiás, Brazil (current address, IBTA Est. Exp. San Benito, Casilla 3299, Cochabamba, Bolivia); P.A.A. Pereira and J.E.S. Carneiro, EMBRAPA/CNPAF; and F.A. Bliss, University of Wisconsin-Madison (current address, Department of Pomology, University of California-Davis, Davis, California 95616). Registration by CSSA. Accepted 30 Sept. 1992. *Corresponding author.

Joint contribution of EMBRAPA/CNPAF, Goiânia, Goiás, Brazil, EPAMIG, Caixa Postal 515, 30000-Belo Horizonte, Minas Gerais, Brazil; PESAGRO, Estação Experimental de Campos, Caixa Postal 114.821, 28100-Campos, Rio de Janeiro, Brazil; and the UFV, Campus Universitário, 36570-Viçosa, Minas Gerais, Brazil. This work has been supported in part by funds provided by the College of Agricultural and Life Sciences, Univ. of Wisconsin-Madison; the Bean/Cowpea CRSP funded by AID Grant no. DAN-1310-G-SS-6008-00; EMBRAPA/CNPAF, Goiânia, Goiás, Brazil; FINEP Grant no. 4.2.86.0561.00; and the Int. Atomic Energy Agency (IAEA) Res. Contract no. 4246/RB and 4246/RB1.

Published in *Crop Sci.* 33:644 (1993).

Registration of 'Tifton 85' Bermudagrass

'Tifton 85' bermudagrass (*Cynodon spp.*) (Reg. no. CV-20, PI 562699) was developed by the USDA-ARS in cooperation with the University of Georgia Coastal Plain Experiment Station, Tifton, GA. It was released April 1992 by the University of Georgia and the USDA-ARS. Tifton 85 is the best of many F_1 hybrids between PI 290884 from South Africa and 'Tifton 68', a highly digestible but cold susceptible hybrid released in 1983 (1). It is a sterile pentaploid ($2n = 5x = 45$). It is taller, has larger stems, broader leaves and a darker green color than other bermudagrass hybrids. Tifton 85 has large rhizomes (though fewer than 'Coastal' and 'Tifton 44'), corms, and large, rapidly-spreading stolons.

In two 3-yr replicated small plot tests beginning in 1985 and 1989, Tifton 85 produced an average of 26% more dry matter that was 11% more digestible and 10% more succulent (had a lower dry matter content at harvest) than Coastal bermudagrass.

Compared with 'Tifton 78' in duplicate 0.81-ha pastures fertilized annually with 252–28–112 kg ha $^{-1}$ of fertilizer, Tifton 85 produced 36% more liveweight gain (LWG) ha $^{-1}$ yr $^{-1}$ in 1989 and 1990 and 69% more in 1991 for a 3-yr average of 47% more LWG ha $^{-1}$ yr $^{-1}$ (3). In an earlier 3-yr grazing study, Tifton 78 produced 36% more LWG ha $^{-1}$ than Coastal (2). In this 3-yr grazing study that used put and take stocking,