**Reproductive Systems in *Paspalum*: Relevance for Germplasm Collection and Conservation, Breeding Techniques, and Adoption of Released Cultivars**

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**TABLE S1.** List of released cultivars for the genus *Paspalum*.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Specie** | **Cultivar** | **Year of release** | **Release institution and country** | **Origin** | **Ploidy level and mode of reproduction** | **Use** | **Main attributes** | **Reference** |
|
| *Paspalum notatum* | Pensacola | 1944 | Georgia SCS and Florida AES, USA | Argentina | 2n=2x=20, sexual | Forage, turf | Cold tolerant, long narrow leaves, early flowering. | Finlayson (1941) |
|
|  | Paraguay 22 | 1947 | USDA and Florida AES, USA | Paraguay | 2n=4x=40, apomictic | Forage | Resistant to ergot, more productive than cv. Paraguay. | McCloud (1953) |
|  |
|  | Argentine | 1950 | Florida AES, USA | Argentina | 2n=4x=40, apomictic | Forage, turf | Semi-erect, wide leaves, cold sensitive, ergot susceptible. | Killinger et al. (1951) |
|  |
|  | Tifhi 1 | 1958 | USDA-ARS and Georgia AES, USA | Hybrid | 2n=2x=20, sexual | Forage | F1 hybrid developed from Pensacola, higher yielding than Pensacola. | Hein (1958) |
|  |
|  | Tifhi 2 | 1958 | USDA-ARS and Georgia AES, USA | Hybrid | 2n=2x=20, sexual | Forage | F1 hybrid developed from Pensacola, higher yielding than Pensacola. | Evers and Burson (2004) |
|  |
|  | Nanpu | 1969 | Aichi Center, Japan | Japan | 2n=2x=20, sexual | Forage | Similar yield and palatability than Sinmoe, less productive than Nangoku, good winter survival. | Blount and Acuña (2009) |
|  |
|  | Wilmington | 1971 | SCS and Mississippi AES, USA | USA | 2n=4x=40, apomictic | Forage | Cold-hardy type, poor seed producer and less productive than Pensacola. | Blount and Acuña (2009) |
|  |
|  | Sinmoe | 1973 | Aichi Center, Japan |  | 2n=2x=20, sexual | Forage | Improved germination, good vigor, and earlier spring growth than Nanpu. | Blount and Acuña (2009) |
|  |  |
|  | Nangoku | 1983 | National Grassland RI, Japan | Japan | 2n=2x=20, sexual | Forage | Semi-erect growth habit, cold tolerant. | Takai and Komatsu (1998) |
|  |
|  | Competidor | 1986 | New South Wales DA, Australia | USA | 2n=4x=40, apomictic | Forage | Higher yielding, more palatable, fewer seed heads and more shade tolerant than Pensacola. | Wilson (1987) |
|  |
|  | Tifton 9 | 1987 | USDA-ARS, CPES, Georgia, USA | Hybrid | 2n=2x=20, sexual | Forage | Higher yielding, greater seedling vigor, and longer leaves than Pensacola. | Burton (1989) |
|  |
|  | Nan-ou | 1991 | Kagoshima Prefecture AS, Japan | USA | 2n=4x=40, apomictic | Forage | More palatable and greater forage yield in summer and early autumn than diploid cultivar Nangoku. | Takai and Komatsu (1998) |
|  |
|  | Riba | 1994 | New South Wales DA, Australia | Uruguay | 2n=4x=40, apomictic | Turf | Prostrate growth habit, dark-green leaf color and ergot resistant. | Loch and Ferguson (1999) |
|  |
|  | AU Sand Mountain | 1999 | Alabama AES, USA |  | 2n=2x=20, sexual | Forage | Cold tolerant, narrow leaves, fine tillers, and short inflorescence. | Blount and Acuña (2009) |
|  |
|  | UF-Riata | 2007 | UF-FAES, USA | Hybrid | 2n=2x=20, sexual | Forage | Low photoperiod sensitivity, cold tolerant, and increased forage production during the cool season. | Blount and Acuña (2009) |
|  |
|  | TifQuick | 2008 | UG and USDA-ARS, USA | Hybrid | 2n=2x=20, sexual | Forage | Rapid germination. | Anderson et al. (2011) |
|  |
|  | Boyero UNNE | 2012 | FCA-UNNE, Argentina | Hybrid | 2n=4x=40, apomictic | Forage | Semi erect growth habit, superior seasonal growth in comparison to cv. Argentine. | Urbani et al. (2017) |
|  |
| *P. dilatatum* | B-230 | 1951 | Louisiana AES, USA | USA | 2n=5x=50, apomictic | Forage | Better seed production than common dallisgrass. | Owen (1951) |
|
|  | B-430 | 1951 | Louisiana AES, USA | USA | 2n=5x=50, apomictic | Forage | Better seed production than common dallisgrass. | Owen (1951) |
|  |
|  | Grasslands Raki | 1979 | DSIR, New Zealand | Australia | 2n=5x=50, apomictic | Forage | Higher yielding than naturalized New Zealand ecotypes, poor seed production | Rumball (1983) |
|  |
|  | Natsugumo | 1980 | Kyushu National AES, Japan | Japan | 2n=5x=50, apomictic | Forage | Higher yielding than B230. | Yoshiyama et al. (1981) |
|  |
|  | La Estanzuela Chiru | Mid-1980s | CIA Alberto Boerger, Uruguay | Uruguay | 2n=6x=60, apomictic | Forage | More erect than common dallisgrass and produce more forage. | Evers and Burson (2004) |
|  |
|  | Magnifi 217 Pampeano INTA | 1988 | INTA-Castelar, Argentina |  | 2n=5x=50, apomictic | Forage | Slow establishment, poor seed production and susceptible to ergot. | INASE (1988) |
|  |  |
|  | Relincho | 2003 | UBA-FA, Argentina |  | 2n=5x=50, apomictic | Forage | Fast establishment, waterlogging tolerant, poor seed production and susceptible to ergot. | INASE (2003) |
|  |  |
|  | Sabine | 2008 | USDA-ARS, Louisiana SUAC, and Texas AgriLife Research, USA |  | 2n=6x=60, apomictic | Forage | Produced more forage and is more persistent under defoliation than common dallisgrass. | Burson et al. (2009) |
|  |  |
|  | Primo-FAUBA | 2013 | FAUBA, Argentina | Hybrid | 2n=4x=40, sexual | Forage | Ergot resistant, cold tolerant, higher yield than Relincho. | INASE (2013) |
|  |
| *P. plicatulum* | Rodd´s Bay | 1963 | CSIRO, Australia | Guatemala | 2n=4x=40, apomictic | Forage | Erect growth habit, leaves more narrow than other two cultivars, hairs on leaf-blades, cold susceptible, highly tolerant to waterlogging for short periods. | Oram (1990) |
|
|  | Hartley | 1963 | CSIRO, Australia | Brazil | 2n=4x=40, apomictic | Forage | Broader leaves, leaf-blades glabrous, higher nutritive value and less seed production than Rodd´s Bay. Also released in Zimbabwe as Beehive *Paspalum*. | Oram (1990), Loch and Ferguson (1999) |
|  |
|  | Bryan | 1975 | CSIRO, Australia | Puerto Rico | 2n=4x=40, apomictic | Forage | Broader leaves and less upright growth habit than Rodd's Bay, hairs on leaf blades, more drought tolerant than other two cultivars. | Oram (1990) |
|  |
| *P. guenoarum* | Pasto Rojas | 1953 | IAN, Paraguay | Paraguay | 2n=4x=40, apomictic | Forage | Easy establishment, adapted to a wide range of soils, tolerant to animal trampling, cold and drought tolerant. | Ramírez (1954) |
|
|  | Wintergreen | 1963 | Zimbabwe |  | 2n=4x=40, apomictic | Forage | Lost favor because difficult to establish in dry years. | Loch and Ferguson (1999) |
|  |
|  | Pasto Ramírez | 1983 | INTA, Argentina | Argentina | 2n=4x=40, apomictic | Forage | More tolerant to cold than Pasto Rojas and not adapted to flooding. | Pérego (2010) |
|  |
|  | Chané-FCA | 2002 | FCA-UNNE, Argentina | Bolivia | 2n=4x=40, apomictic | Forage | Only flowers during the fall, cold sensitive, good forage quality and seed production. | INASE (2002) |
|  |
| *P. nicorae* | Doncorae | 1993 | USDA-ARS, USA | Brazil | 2n=4x=40, apomictic | Cover crop | Rapid seedling establishment, vigorous growth habit, and winter hardiness. | Belt and Englert (1999), Anderson and Sharp (1994) |
|
|  | Blue Eve | 1999 | Enviroseeds, Australia | Argentina | 2n=4x=40, apomictic | Turf | Plant mutant from Blue Dawn, turf-type with a finer, lower-growing sward with fewer seed heads. | Evers and Burson (2004), DPI (2007) |
|  |
|  | Blue Dawn | 2001 | Progressive Seeds, Australia | Argentina | 2n=4x=40, apomictic | Turf, forage | Dual purpose pasture, erect growth, long, deep and vigorous rhizomes, cold and drought tolerant. | Evers and Burson (2004), DPI (2007) |
|  |
| *P. atratum* | Suerte | 1995 | Florida AES, USA | Brazil | 2n=4x=40, apomictic | Forage | Produces good quality forage throughout growing season, produces good quality seed in fall, tolerates flooding. | Kalmbacher et al. (1997) |
|
|  | Hi-Gane | 1996 | Australia | Brazil | 2n=4x=40, apomictic | Forage | Actually is Suerte but is marketed as Hi-Gane in Australia. | Adapted from Evers and Burson (2004) |
|  |
|  | Cambá-FCA | 1997 | FCA-UNNE, Argentina | Brazil | 2n=4x=40, apomictic | Forage | Selected from Brazilian germplasm (BRA 009610), produces good quality forage throughout growing season, produces good quality seed in fall, tolerates flooding. | INASE (1997) |
|  |
|  | Ubon | 1998 | Ubon Ratchathani University, Thailand | Brazil | 2n=4x=40, apomictic | Forage | Selected from Brazilian germplasm (BRA 009610), grown on abandoned rice fields, tolerates flooding, used primarily for dairy animals, good seed production. | Adapted from Evers and Burson (2004) |
|  |
|  | Pojuca | 2000 | EMBRAPA, Brazil | Brazil | 2n=4x=40, apomictic | Forage | Selected from Brazilian germplasm (BRA 009610), same characteristics as for Cambá above. | Adapted from Evers and Burson (2004) |
|  |
| *P. vaginatum* | Saltene | 1951 | The Turf Farm, Waneroo Turf Farm, Australia | South Africa | 2n=2x=20, sexual | Turf | Lawn-type, intermediate texture. | Duncan and Carrow (2000) |
|
|  | Salpas | 1951 |  | Australia | 2n=2x=20, sexual | Turf | Intermediate leaf texture. | Duncan and Carrow (2000) |
|  |  |
|  | Futurf | 1972 |  | Australia | 2n=2x=20, sexual | Turf | Intermediate leaf texture. | Duncan and Carrow (2000) |
|  |  |
|  | Adalayd | 1975 | UG, USA | Australia | 2n=2x=20, sexual | Turf | Intermediate leaf texture. | Duncan and Carrow (2000) |
|  |
|  | Fidalayel | 1975 |  | USA | 2n=2x=20, sexual | Turf | Intermediate leaf texture. | Duncan and Carrow (2000) |
|  |  |
|  | SeaDwarf | 1980s | Environmental Turf Inc., USA | USA | 2n=2x=20, sexual | Turf | Fine-textured, bright green leaves with high shoot density. | Brosnan and Deputy (2008) |
|  |
|  | Tropic Shore | 1991 | USDA and University of Hawaii, USA | USA | 2n=2x=20, sexual | Turf | Coarse leaf texture. | Duncan and Carrow (2000), USDA-NRCS (2013) |
|  |
|  | Salam | 1998 | Southern Turf Nurseries, USA | USA | 2n=2x=20, sexual | Turf | Fine-textured, dark green leaves with high shoot density, susceptible to dollar spot. | Duncan and Carrow (2000), Brosnan and Deputy (2008) |
|  |
|  | See Isle 1 | 1999 | UG, USA | Argentina | 2n=2x=20, sexual | Turf | Fine-textured, dark green leaves with high shoot density, drought tolerant. | Duncan (2002), Brosnan and Deputy (2008) |
|  |
|  | See Isle 2000 | 1999 | UG, USA | USA | 2n=2x=20, sexual | Turf | Fine-textured, dark green leaves with high shoot density, susceptible to dollar spot. | Duncan (2002), Brosnan and Deputy (2008) |
|  |
|  | Brazoria | 1999 | USDA-Natural Resources CS, USA | USA | 2n=2x=20, sexual | Turf | Semi-aquatic, rapid-growing, decumbent grass. | USDA-NRCS (2015) |
|  |
|  | Durban CC | 2000 | UG, USA | South Africa | 2n=2x=20, sexual | Turf | Fine-textured. | Duncan and Carrow (2000) |
|  |
|  | SeaWay | 2002 | Environmental Turf Inc., USA | USA | 2n=2x=20, sexual | Turf | Fine-textured, superior tolerance to salt, drought, and soil hypoxic conditions. | Bennett and DePew (2002a) |
|  |
|  | SeaGreen | 2002 | Environmental Turf Inc., USA | USA | 2n=2x=20, sexual | Turf | Fine-textured, superior tolerance to salt, drought, and soil hypoxic conditions. | Bennett and DePew (2002b) |
|  |
|  | SeaSpray | 2005 | Pure Seed Testing Inc. and UG, USA | USA | 2n=2x=20, sexual | Turf | The only cultivar that can be established from seed.  Medium-textured, bright green leaves with high shoot density, less susceptible to dollar spot than other seashore cultivars. | Brosnan and Deputy (2008) |
|  |
|  | Aloha | 2005 | Florida and Hawaii AES, USA | USA | 2n=2x=20, sexual | Turf | Fast rate of establishment and ground coverage, dark and deep green leaf color, and superior resistance to the greenbug aphid. | Scully et al. (2011) |
|  |
|  | Sea Isle Supreme | 2005 | UG, USA | USA | 2n=2x=20, sexual | Turf | Low-growing and rapidly spreading semi dwarf type, excellent salt tolerance. | Raymer et al. (2007) |
|  |
|  | Platinum TE | 2008 | Turf Ecosystems, LLC, USA | USA | 2n=2x=20, sexual | Turf | Semi-dwarf growth habit, rapid establishment, good resistance to foliar diseases. | Duncan (2008) |
|  |
|  | SeaStar | 2015 | UG, USA | USA | 2n=2x=20,  sexual | Turf | Excellent green turf color, non-dwarf, rapidly spreading growth habit, good salt tolerance. | Raymer et al. (2015) |
| *P. scrobiculatum* | Paltridge | 1966 | Queensland DPI, Australia | Zimbabwe | 2n=2x=40, sexual | Forage | Slightly stoloniferous, medium to low yield, very palatable and highly digestible, low crude protein content. | Oram (1990) |
|
|  | PLR1 | 1942 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Long duration, low yielding. | ICAR (2014) |
|  | CO 1 | 1953 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Profuse tillering, long duration. | ICAR (2014) |
|  | CO 2 | 1970 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Profuse tillering, long duration, low yielding. | ICAR (2014) |
|  | Niwas 1 | 1971 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Erect plant type, early duration. | ICAR (2014) |
|  | JKN 101 | 1976 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Erect plant type, early duration. | ICAR (2014) |
|  | GK 1 | 1977 | GAU, India | India | 2n=2x=40, sexual | Cereal | High yielding. | ICAR (2014) |
|  | JNK 364 | 1977 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Early duration, tolerant to drought. | ICAR (2014) |
|  | CO 3 | 1980 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Semi-erect plants. | ICAR (2014) |
|  | K 1 | 1982 | ARS-Kovilpatti, India | India | 2n=2x=40, sexual | Cereal | Profuse tillering. | ICAR (2014) |
|  | JK 1 | 1982 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Profuse tillering, high yielding. | ICAR (2014) |
|  | JK 2 | 1982 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Profuse tillering, high yielding. | ICAR (2014) |
|  | PSC 1 | 1986 | PCC, India | India | 2n=2x=40, sexual | Cereal | Dense spikelets, high yielding, non-lodging, moderately tolerant to shootfly and drought. | ICAR (2014) |
|  | JK 41 | 1986 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Erect plant type, resistant to head smut and moderately drought tolerant, suitable for inter/mixed cropping. | ICAR (2014) |
|  | JK 76 | 1989 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Earliness, moderately tolerant to shootfly and tolerant to drought. | Hariprasanna (2017) |
|  |
|  | JK 62 | 1989 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Earliness, high yield, resistant to head smut and bacterial blight. | Hariprasanna (2017) |
|  |
|  | GPUK 3 | 1991 | UAS, India | India | 2n=2x=40, sexual | Cereal | High yielding, earliness, resistant to head smut and moderately tolerant to low moisture stress. | Hariprasanna (2017) |
|  |
|  | APK 1 | 1993 | ARS, India | India | 2n=2x=40, sexual | Cereal | High seed yield, resistant to ergot, smut and tolerant to stem borer. | Hariprasanna (2017) |
|  |
|  | GK 2 | 1993 | GAU, India | India | 2n=2x=40, sexual | Cereal | Tolerant to drought. | Hariprasanna (2017) |
|  |
|  | KMV 20 | 1996 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Tolerant to sheath blight and to drought. | Hariprasanna (2017) |
|  |
|  | KK 1 | 1999 | CSAUA&T, India | India | 2n=2x=40, sexual | Cereal | Synchronous tillering, non-lodging, resistant to head smut, tolerant to drought and salinity. | ICAR (2014) |
|  | JK 155 | 2000 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Resistant to head smut and shoot fly. | Hariprasanna (2017) |
|  |
|  | JK 48 | 2001 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Tolerance to head smut and high yielding. | Hariprasanna (2017) |
|  |
|  | KK 2 | 2002 | Chandra Shekhar Azad UAT, India | India | 2n=2x=40, sexual | Cereal | Resistant to drought and lodging, suitable for saline condition. | Hariprasanna (2017) |
|  |
|  | JK 439 | 2002 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | High yielding, moderately resistant to smut and shoot fly, suitable for shallow soil with marginal fertility. | Hariprasanna (2017) |
|  |
|  | JK 13 | 2006 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Moderately resistant to head smut, resistant to shoot fly. | Hariprasanna (2017) |
|  |
|  | JK 65 | 2008 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | High yielding, resistant to head smut. | Hariprasanna (2017) |
|  |
|  | JK 106 | 2008 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Resistant to head smut and shoot fly. | Hariprasanna (2017) |
|  |
|  | JK 36 | 2009 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Very early maturation, low yielding, moderately tolerant to shoot fly. | Hariprasanna (2017) |
|  |
|  | JK 98 | 2010 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | Early duration, high yielding, moderately resistant to head smut, tolerant to shoot fly. | Hariprasanna (2017) |
|  |
|  | DPS 9‐1 | 2011 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | High yielding, resistant to head smut. | Hariprasanna (2017) |
|  |
|  | Indira kodo 1 | 2012 | IGKV, India | India | 2n=2x=40, sexual | Cereal | Moderately susceptible to head smut, highly responsive to fertilizers, suitable for late sown condition. | Hariprasanna (2017) |
|  |
|  | TNAU 86 | 2012 | TNAU, India | India | 2n=2x=40, sexual | Cereal | Early maturation, non-lodging, high yielding and milling. | Hariprasanna (2017) |
|  |
|  | RK 390‐25 | 2012 | JNKVV, India | India | 2n=2x=40, sexual | Cereal | High yielding, moderately resistant to head smut. | Hariprasanna (2017) |
|  |

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