800 Buchanan Street
Albany, CA 94710

Appendix 2

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C. 20250

AND

UNIVERSITY OF FLORIDA COLLEGE OF AGRICULTURE
FLORIDA AGRICULTURAL EXPERIMENT STATIONS

NOTICE TO NURSEYMEN OF THE NAMING AND RELEASE FOR PROPAGATION OF EUDORA MUSCADINE GRAPE

The Agricultural Research Service, United States Department of Agriculture and the University of Florida College of Agriculture and the Florida Agricultural Experiment Stations announce the naming and release to nurserymen for propagation the muscadine grape 'Eudora'.

Eudora, tested as CD8-67, was selected at Leesburg, Florida, in 1981 by J.A. Mortensen from a cross between 'Fry' and 'Southland'. Plants of Eudora are vigorous and productive, and in South Mississippi yields are comparable to the most productive cultivars. Flowers are pistillate and produce medium-large, round, fim1, purple-skinned berries with high sugar content, excellent eating quality and flavor. Skin texture is moderately tough but flavorful and edible and pulp is only moderately muscelagenous. Berries contain an average of 3.2 seeds per berry. Testing indicates that skins of 'Eudora' possess high concentrations of ellagic acid, a potent antioxidant, greater than that found in many other muscadine grape cultivars. Less than half of ripe berries have wet picking scars and berries store well under refrigeration with little shrinkage or shriveling. Some berry clusters are tight and suitable for cluster harvesting and packaging in clamshells. Ripening occurs from late August through late September in the Gulf-Coast Region. 'Eudora' has not shown symptoms of Pierce's disease, and has shown good resistance to various fruit rot organisms.

'Eudora' is recommended as a fresh market grape for both dooryard and commercial use. Since flowers of 'Eudora' are pistillate, it must be interplanted with other perfect flowered or self-fertile muscadine grape cultivars to facilitate pollination and fruit set. 'Eudora' is readily propagated from softwood cuttings under mist during June - July, and may also be propagated via layerage.

A limited supply of one-year old potted plants is available for distribution to bonified nurserymen, and will be prorated to nurseries if demand exceeds supply. Written requests for plants should be sent to Dr. Stephen Stringer, USDA-ARS Thad Cochran Southern Horticulture Laboratory, P.O. Box 287, Poplarville, MS. 39470.

Genetic materials of this release will be deposited in the National Plant Germplasm Repository at

Davis, CA., where it will be available for research purposes and commercial development.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.

and

BEET SUGAR DEVELOPMENT FOUNDATION DENVER, COLORADO

NOTICE OF RELEASE OF EL53 SUGARBEET GERMPLASM WITH SMOOTH-ROOT AND IMPROVED RESISTANCE TO RHIZOCTONIA CROWN AND ROOT ROT

The Agricultural Research Service of the U.S. Department of Agriculture and the Beet Sugar Development Foundation announce the joint release of ELS3 sugarbeet germplasm substantially derived from previously released smooth-rooted, low soil tare germplasm releases with two cycles of selection for freedom from crown and root rot disease caused by Rhizoctonia solani KUhn (AG2~2). Previous low son tare releases have been uniformly susceptible to Rhizoctonia crown and root rot, and the moderately resistant germplasm EL52 was used as a source of resistance during the development of EL53. EL53 was developed at the USDA-ARS Sugarbeet and Bean Research Unit. East Lansing, Michigan by J.M. McGrath. EL53 has shown good agronomic performance, and it is expected to be a resource for developing low soil tare parental lines for hybrid cultivars with economically recoverable levels of sucrose.

EL53 is diploid self-sterile with predominantly red hypocotyls (>80% red), and segregates for monogerm seed type as well as the smooth-root trait. EL53 has a complex pedigree involving seven previously released smoothroot germplasm lines, two unreleased smooth-root breeding populations, and three traditional East Lansing germplasm releases. Most (59%1) of EL53's parentage stems from smooth rooted materials, Specifically, contributors and their proportional contribution to EL53 areas follows: SR80 {PI 607898)t 6%- SR87 (PI 607899), 12%; SR94 (PI 598076)t 6%; SR95 (P1603947)-3%- SR96 {PI 628272), 3%- SR97 (PI 628273)- 3%; EL0204 (P1632750), 9%; ELSO (PI 598073). 9%; EL52 (pI 628274)- 15%, and USH20 (PI 631354). 18%. Two breeding populations were also u- 99119-00 (3%) and 99J31..QO (12%). These two breeding populations were derived from mother roots simultaneously selected at East Lansing over two cycles for smooth-root and Rhizoctonia Crown and root rot resistance. originating from separate F2 populations of crosses between 95H07 and S5B 1 ~R25, respectively.

ELS 3 was selected solely under conditions promoting development of Rhizoctonia crown and root rot in the East Lansing disease nurseries in 2001 (Test OlEL31) and 2002 (Test 02ELA3). In 2001, 33 roots were selected in the proportions indicated above randomly inter-pollinated in the greenhouse-and-seed harvested from individual plant. The 33 roots were selected from within a four-fold replicated completely randomized block with 14 entries. The average stand count 30 days after inoculation with millet-infested Rhizoctonia solani AG2-2 was 8.8 plants per plot (Root Mean Square Error = 6.0). Thus, the selection intensity was ca. 6.25% of plants surviving after inoculation, This seed increase was designated OlB024. In 2002, seed from each individual plant harvest was planted to a single 24-foot long row, and selections were taken from 26 of the original 33 progeny lines evaluated for resistance in the 2D02 Rhizoctonia nursery. Seventy-six roots were selected solely

on freedom of crown and root rot symptoms, and randomly divided in two groups of 38 roots each. The final stand at harvest and selection was 332 plants, thus the selection pressure was 23% of surviving plants. The first group of 38 roots was intercrossed in the 2003 greenhouse, designated 02B094, and this seed was increased at the West Coast Beet Seed Co'. in Salem, OR (designated WC040022). The other 38 roots were randomly inter-pollinated in a plot in St. Johns, MI during the summer of 2003, and this seed was designated 03B017. EL53 has been tested as OlB024, 02B094, and 03B0l7.

ELS3 is moderately resistant to Rhizoctonia crown and root rot. Cercospora leaf spot and Aphanomyces diseases as evaluated over two years (2005 only for Apbanomyces) in the USDA-ARS, Ft. Collins and

Betaseed, Shakopee, MN disease nurseries in 2004 and 2005. In all cases, EL53 was more susceptible, but not significantly different from, the moderately resistant check, or in the case of the Aphanomyces nursery where the resistant check was: not scored, EL53 was better out not significantly different from the moderately susceptible check. in each year considered separately. ELS3 was evaluated for agronomic performance at the Saginaw Valley Bean and Beet Farm (Saginaw, MI) in 2003, 2004, and 2005. Over an~ ELS3 showed 91 % of the sugar content (16.1 % vs. 18.1 %). 105% of the harvested root yield (2L9 vs, 20.9 tons per acre). and 92% of the sugar yield per acre (6509 V$. 7080 lbs. sucrose) of the check varieties El7 and B5736, averaged over the three years. EL.53 has excellent emergence and stand persistence.

EL53 is being released as a germplasm source for breeders to use in developing parental lines combining smooth rootedness with higher levels ofRhi7.octonia crown and root rot resistance than is currently available in smooth-root material. EL53 also contains a series of useful characters at low allele frequencies derived from EI,53's components, such as those necessary to breed for seed parent used to create cytoplasmic male mediated hybrids as well as the Rzl source of rhizomania resistance. Seed will be available for use by writing to Dr. J. Mitchell McGrath, USDA~ARS; 494 PSSB, Michigan State University. East Lansing, MI 48824-1325.

Efforts of Drs. L. Hanson and L. Panella of the USDA-ARS. J. Miner and M. Rekoske of Betaseed. Inc., and T. Duckert and T. Koppin at East Lansing. In providing valuable disease nursery and agronomic testing assistance is gratefully acknowledged. Genetic material of this release has been deposited in the National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars. It is requested that the author be notified if this germplasm contributes to the development of a new breeding line or cultivar.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.

And

CALIFORNIA AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF CALIFORNIA DAVIS
DAVIS, CALIFORNIA

NOTICE OF RELEASE OF ICEBERG GERMPLASM WITH RESISTANCE TO VERTICILLIUM WILT

The Agricultural Research Service, United States Department of Agriculture and the University of California - Davis announce the release of three breeding lines of lettuce (Lactuca sativa L.). Lines RH05-336, RH05-0339 and RH05-Q340 are F9 iceberg type lettuce breeding lines with resistance to Verticimum wilt caused by V. dahliae. They have partially covered heads with medium-dark-green and crisp textured leaves. Seeds are black. These breeding lines were selected from the cross La Brillnte x Pacific. Resistance is derived from La Brillante, a Batavia type lettuce cultivar with resistance to race 1 of V. dahliae. These breeding lines are the first iceberg type lettuce with resistance to Verticillum wilt but are nut suitable for commercial production. They should be used as parents for further development of Verticinium wilt cultivars.

Verticilliun wilt of lettuce is a major concern to the California lettuce industry, which is a 1 billion dollar industry in the Salinas, Valley in Monterey County, CA alone. The pathogen Verticillium dahliae, is a soil-borne fungus that can colonize the vascular tissues of a broad range of plants. This fungus was first identified as a pathogen on lettuce in 1995 in the central coast of California (Subbarao et al., 1997). Since the initial discovery, V. dahliae isolates pathogenic on lettuce have been found throughout Monterey and Santa Cruz counties.

Symptoms of Verticillium wilt first appear on the basal leaves as areas of chlorosis and angular necrotic lesions along the leaf margins prior to wilting. These foliar symptoms progress acropetally, eventually leading to plant death. Other key foliar symptoms include stunting, defoliation and other developmental abnormalities. Prior to the onset of foliar symptoms the vascular discoloration of root and stem tissue, revealed by vertical sectioning of the plant, are the only other diagnostic features available. These disease symptoms are most devastating to iceberg cultivars, since the lower leaves envelope the entire head and essentially suffocate the plant as the disease progresses. Verticillium wilt symptoms in lettuce are absent until they near harvest maturity or initiate reproductive growth, at which time an entire lettuce crop can be lost within one week (Subbarao, et al 1997). Plants which succumb to V. dahliae produce large quantities of microsclerotia that can persist in the soil for 10-15 years.

05-0336, RfI05-0339, and RHOS-0340 were selected from the cross La Brillante x Pacific. The Verticillium wilt resistance in these breeding lines is derived from La Brillante, which is a yellow-green Batavia type lettuce cultivar that is not used for commercial production. The origin of La BriHante is unknown.

Two races of V. dahliae isolates from lettuce are reported, of which La Brillante is resistant to race 1 and susceptible to race 2 (Vallad et al., 2006). Pacific is a. modem iceberg type cultivar eloped by the USDA and adapted for coastal California production conditions (Ryder Robinson, 1991). Pacific is susceptible to races 1 and 2 of V. dahliae.

Rh5-0336, RHO5-0339, and RH05-0340 were developed by selecting for horticultural characteristics and the absence of foliar and root symptoms in experiments conducted in V. dahliae infested field sites. Using this approach, single plant selections were made using the pedigree method of breeding through 6 generations of self pollination. In 2006, resistance was evaluated in RH05-0336, RH05-0339, RH05-0340, Pacific,and

La Brillante in infested field experiments with 3 replications. The breeding lines were in P7 and F8 generations respectively. Both trials were maintained using standard cultural practices for coastal California lettuce production. Approximately 1 week past market maturity, disease incidence was determined by evaluating root and foliar symptoms of Verticillium wilt on 10 plants per plot. In 2005, the disease incidence for Pacific was 20%, No disease was found in La Brillante, RH05-0336, RHO5-0339, and RH05-0340. In 2006, the disease incidence was 47% in Pacific and 5% in La Brillante. The disease incidence in RHO5-0336, RH05-0339, and RH05-0340 was 3%, O%, and 0% respectively. In both years, Pacific had significantly more disease than La Brillante, RH05-0336, RH05-0339, and RH05-0340 ($P < 0.01$). La Brillante, RH05-0336, RHO5-0339, and RHO5-0340 were not significantly different from each other. Other than Vericillium wilt RH05-0336, RHO5-0339, and RHO5-0340 have not been characterized their reaction to other lettuce pathogens. or their propensity for physiological defects. While these breeding lines are the first iceberg type lettuce with Verticillium wilt resistance, they lack the necessary yield and quality needed for commercial production. Therefore, they are intended to be used as parents to develop Verticillium wilt resistant cultivars.

Limited samples of seed are available for distribution to all interested parties for research purposes, including the development and commercialization of new cultivars. Samples will also be deposited in the National Plant Germplasm system. It is requested that appropriate recognition be made if the breeding lines contribute to research or the development of new germplasm, breeding lines, or cultivars. Written request should be sent to Dr. Ryan Hayes, USDA-ARS, 1636 E. Alisal St., Salinas, CA 93905.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D. C. 20250

NOTICE OF RELEASE OF DOWNY MILDEW RESISTANT GREEN SPROUTING BROCCOLI INBRED LINE USVL089

The Agricultural Research Service Department of Agriculture, announces the release of the green-sprouting broccoli (Brassica oleracea L., Italica Group) inbred line USVL089. This inbred line provides a uniform and true-breeding source of resistance to downy mildew incited by Peronospora parasitica. USVL089 was selected at the U.S. Vegetable Laboratory, Charleston, S.C. by Dr. Mark W. Farnham, Research Geneticist.

USVL089 is a doubled-haploid line that was derived from anther cultures of the hybrid cultivar Everest. USVL089 exhibits a relatively high level of homozygosity compared to conventional inbred lines of broccoli, which typically undergo up to seven or eight generations of inbreeding. USVL089 is selfincompatible and must be self-pollinated (bud pollinated) to reproduce the line by seed.

In artificial inoculation studies. USVL089 is highly resistant to downy mildew at both the seedling cotyledon stage and the 3-to 4-true leaf stage. In field 5tudies. USVL089 has exhibited a high level of resistance to downy mildew from cotyledon stage through the mature head stage. The downy mildew resistance of USVL089 is effective when the line is inoculated with P. parasitica isolates sampled from different U.S. geographic locations, including California and South Carolina.

Inheritance studies published by Farnham et at (Euphytica 128:405-407,2002) indicate that a single dominant gene controls the resistance expressed by USVL089. Hybrids made using USVL089 as a parent express the same high level of resistance. Giovanelli et a1. (J Amer. Soc. Hort. Sci. 127:597-601. 2002) developed 1Uld described several sequence characterized amplified region (SCAR) DNA markers linked to this single dominant gene. These SCAR markers can beused to indirectly select for downy mildew resistant lines in a population segregating for the dominant gene present in USVL089.

Typical of many inbreds, USVL089 has relatively small stature compared to hybrids such as Marathon or Liberty. USVW89 exhibits early to midseason maturity, producing a single head of broccoli in 70-80 days after transplanting in autumn environments where it is best adapted. USVL089 will produce a single head in 60 to 70 days after transplanting in spring environments, but it is poorly adapted to any conditions wherein relatively high temperatures (e.g., greater than 28C) occur as heads mature.

Heads harvested from this inbred have a slight dome shape and medium bead size. USVL089 also exhibits a lack of lateral branches on the main stem of the plant. Evaluations of harvested heads; from hybrids formed by crossing USVL089 with other ARS inbreds indicates USVL089 can combine well in specific cases to produce hybrids that have high quality head production. USVL089 is best suited as a source of

downy mildew resistance that can readily be transferred to new breeding populations.

Small quantities of USVL089 seed produced by hand self - pollinations may be obtained from Dr. Mark W. Farnham, U.S. Vegetable Laboratory, 2700 Savannah Highway, Charleston, SC 294144. The genetic materials of this release will be deposited in the National Plant Germplasm system where they will be available for research purposes, including for development and commercialization of new cultivars. It is requested that appropriate recognition be made if this ed line contributes to the development of a new breeding line or hybrid.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.

NOTICE OF RELEASE OF RUSSIAN WHEAT APHID-RESISTANT, 6-ROWED, SPRING MALTING BARLEY GERMPLASM LINES

The Wheat, Peanut and Other Field Crops Research Unit, Agricultural Research Service, Stillwater, Oklahoma, and the Small Grains and Potato Germplasm Research Unit. Agricultural Research Service, Aberdeen, Idaho, announce the release of nineteen spring, 6-rowed, malting barley (Hordeum vulgare L.) germplasm, STARS 0601B (PI 642887), STARS 0602B (PI 642888), STARS 0603B (PI 642889), STARS 0604B (P1642890), STARS 0605B (PI 642891), STARS 0606B (PI 642892), STARS 0607B (PI 642893), STARS 0608B (PI 642894), STARS 0609B (PI 642895), STARS 06 l0B (PI 642895), STARS 0611B (PI 642897), STARS 0612B (PI 642898), STARS 0613B (PI642899), STARS 0614B (P1642900), STARS 0615B (PI 642901). STARS 061 6B (PI 642902), STARS 0617B (PI 642903), STARS 06188 (PI 642904), and STARS 0619B (PI 642905) for breeding and experimental purposes. Scientists participating in their development were Dolores W. Mornhinweg and Phil Bregitzer.

Eighteen of these germplasm are highly resistant and one is moderately resistant (Table 1) to the Russian wheat aphid (RWA). Diruaphis noxia (Mordvilko), when seedlings are tested in the greenhouse with greenhouse-reared RWA colonies. The major component of resistance in these lines is tolerance. Even while supporting high R WA populations, leaves of highly resistant germplasm lines do not roll or streak in response to RWA, and therefore yield reduction due to head trapping and chlorosis of susceptible cultivars does not occur in these lines. Moderately resistant lines characteristically roll and streak with RWA feeding and will have some yield reduction due to chlorosis and leaf rolling, yet they do not incur as great a yield loss as susceptible Cultivars. Lines that are rated moderately resistant but do not roll have a high incidence of chlorosis that can also reduce yield by a reduction in grain fill. Moderately resistant lines are valuable as potential genetically different sources of resistance.

Screening of the entire USDA-ARS National Small Grains Collection of Hordeum vulgare in the greenhouse by the USDA-ARS in Stillwater, OK, resulted in the identification of 109 accessions with resistance to RWA ranging from resistant (I - 3) to moderately resistant (4 - 5) on Webster's scale of 1 -9 (1- resistant, 9 =susceptible). One hundred nine unadapted RWA, resistant germplasm lines were developed from these accessions. Two spring germplasm lines were released to breeders immediately (STARS 9309B and STARS 9577B), while all 109 lines entered a backcross breeding program in Stillwater to develop RWA-resistant germplasm lines in backgrounds adapted to all barley-growing areas of the USA where RWA is a potential threat. These adapted germplasm lines should have little negative effect on elite lines when utilized by breeders.

Each of these germplasm releases was developed by backcrossing an unadapted spring barley germplasm line (Table 1) as a male 3 times to a 6-rowed, spring malting barley cultivar. Backcross progeny were screened for each generation. and only resistant plants were used in the next backcross. BC3Fl plants from each cross were increased to obtain BC3F2, and 100 BC3F2:F3 individuals were grown in the greenhouse. Seed from these plants were grown in the field as plant rows in Aberdeen, ID, and evaluated for agronomics, compared to the susceptible recurrent parent. Selected lines were grown in replicated yield trials for at least 2 years in Aberdeen, and the best performers in each resistant background were selected for release. Each line was tested for homozygous resistance to RWA1 and seed from homozygous plants was increased in the field and greenhouse. A final screening for homozygous resistance was done prior to bulking of seed for each germplasm release.

Field performance of each line relative to the recurrent parent in the absence of RWA can be Found in Table I, along with seedling resistance rating, resistance source, and accession source. These lines are very competitive with the recurrent parent, even in the absence of aphids.

Genetic materials of this release will be deposited in the National Plant Germplasm System where these materials will be available for research purposes, including development and commercialization of new materials. It is requested that appropriate recognition of the source be when these germplasm lines contribute to research or the development of improved line.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTIRAL RESEARCH SERVICE
WASHINGTON, D.C. 20250

and

NORTH CAROLINA AGR1CULTURAL RESEARCH SERVICE

North Carolina State University
Raleigh, North Carolina 27695-7643

NOTICE OF RELEASE OF 'N8001' SOYBEAN

The Agricultural Research Service of the United States Department of Agriculture and the North Carolina Agriculture Research Service announce the release of a new soybean [Glycine max L. Merr.] variety N8001. It has excellent yield potential. Twenty-five percent of its parentage is exotic germplasm. Few soybean cultivars produced in USA have this level of diversity, and thus its release broadens the genetic base of soybean cultivars. It is a determinate group VlII maturity soybean variety adapted to the southern USA (30^0 to 35^{tJ} N latitude) or wherever MG VIII varieties are produced. N8001 was developed by Dr. Thomas E, Carter, Jr., Research Geneticist, USDA-ARS, Raleigh, North Carolina.

N8001 is an F4-derived selection from the cross of USDA variety 'N7001' and 'Cook' N7001 was derived by crossing USDA breeding line, N77~114, to a landrace from Japan, Plant Introduction 41 6937. The PI 416937 appears distinctly differ from the previous ancestors of North American soybean in that it has much larger leaves and a more prolific rooting system. N7001 was the first pub11c Cultivar released in USA with this PI in its pedigree. Cook was derived from the cross of cultivar 'Braxton' and 'Young'. The F1 seeds of N8001 were produced in 1994 at Clayton, NC, and fl plants were grown during the following winter at the USDA-ARS Tropical Agriculture Research Station (TARS), Isabela, PR. The F2 and F3 generations were advanced using the single seed descent breeding method at Clayton, NC in 1995 and at TARS during the following winter. In 1996, individual F4 plants were grown and harvested at Jackson Springs, NC. Approximately 173 F4 plants were grown in progeny rows at Clayton, NC in 1997. Approximately 100 of these progeny rows were entered into replicated yield trials in NC during 1998. The bulked harvest of progeny row N97-9612 was designated as N8001. N8001 is a full sib of USDA maturity Group VII cultivar N7002.

During 2002, [·-2D05, N800] was evaluated in 14 environments of the North Carolina State University Official Variety Trials. N8001 matured j day earlier than Cook. Cook is a cultivar adapted to NC. The plant height of N8OOl (102 cm) was very similar to that of Cook (l01 cm). Plant lodging wasrated using a scale of 1-5, where 1 is no lodging and 5 is completely lodged at maturity. The plant lodging rating of N8OOl (l.6) was similar lo Cook (1.9). Yield of N8001 (2,949 kg ha- 1) was 183 kg ha-] greater than Cook (2,766 kg ha- I). N8001 was evaluated at 48 environments in the USDA·ARS Southern Region Uniform Group VIII Test during 2000 - 2005. The maturity of N8001 was similar to that of Cook, the standard control cultivar for the USDA~ARS Southern Region Uniform Group VIH Test. The plant height of N8001 was equal to Cook (89 cm). N8001 (2.0) lodged similarly to Cook (2.1). Yield of N8001 (2999 kg ha-l) was 217 kg ha-l greater than Cook (2.782 kg ha-l). The l00- seed we ofN8001 (14.8 g) was similar to Cook (15.2 g). Seed protein content of N8001 (410 g kg-1) lower than that of Cook (418 g kg-1), on a zero moisture basis. N8001 had less seed oil cont (l 90g kg -1) than Cook (193 g kg-l).

N8001 has purple flowers~ gray pubescence, tan pod wall color at maturity, and glossy yellow seeds with imperfect black hila. In USDA regional tests, N8001 was rated resistant to Soybean Mosaic Virus and stem canker (Diaporthe phaseolorum var, cauljvora). It was rated susceptible to soybean cyst (Heterodera glycines Ichinohe) and root knot (Meloldogyne incognita and M arenaria) nematodes. In USDA trials in NC, N8001 was rated resistant to bacterial pustule (Xanthomonas axonopodia pv. glycines) and forage leaf spot (Cercospora sojina K. Hara), N8001 also resisted pod-shattering after maturity, even with extensively delayed harvest, bal on field observations in NC.

Small seed quantities of N800l win be available for research purposes from Dr, Thomas E. Carter, Jr.,3127 Ligon St. Raleigh, NC 27607, 919-513-1480, tommy.Carter@ncsu.edu. It is requested that appropriate recognition be made if N8001 contributes to the development of a germplasm 1ine or cultivar. Seed win also be deposited in the National Center for Genetic Resources Preservation and National Plant Gennplasm System.

MISSISSIPPI AGRICULTURAL AND FORESTRY EXPERIMENT STATION
AGRICULTURAL RESEARCH SERVICE.
MISSISSIPPI STATE UNIVERSITY, MISSISSIPPI STATE

And

COTTON INCORPORATED CARY, NORTH CAROLINA

And

THE UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE WASHINGTON, D.C.

NOTICE OF RELEASE OF SIX ROOT -KNOT NEMATODE RESIST ANT UPLAND COTTON GERMPLASM LINES

Mississippi Agricultural and Forestry Experiment Station, The Agricultural Research Service. United States Department of Agriculture, and Cotton Incorporated announce the release of six germplasm lines of upland cotton. MS-10RKN, MS-24RKN, MS-30RKN, MS-33RKN, MS-35RKN, AND MS-37RKN that have good yield and fiber quality combined with resistance to, root-knot nematode (RKN). The nematode resistance is from the Auburn 634 source. These lines provide public and private breeders with germplasm resources with resistance to root-knot nematode and acceptable yield and fiber quality for the mid-south and southeastern United States.

All six lines were developed using M240 RNR as the nematode resistant parental line, and it was crossed one or more times with different commercial cultivars or related elite breeding lines followed by selection. The pedigrees are:
MS-0lRKN=; SG404/(M240/SG501): MS-24RKN=(M240/SG125)/SG125:
MS-30RKN= DES21 1-39/{M240/SG 125): MS-33RKN=SG501I(M240/SG125):
MS-35RKN=(DES119/M240)/DES119; MS-37RKN=(DESl19/M240)/DESl19:

Performance data over four environments for yield evaluations and two greenhouse RKN evaluations show that the RKN gall index for the six lines ranged from 2.0 to 2.7 whereas the gall index on the RKN resistant check M315 was 1.8~ the susceptible RKN check M& was 4.0, and the resistant cultivar check Acala Nemx was 2.5. Each of the six lines had significantly less wilted plants (2-12%) than Rowden (48 - 63%). The susceptible check cultivar, in the Tallassee, AL RKN/Fusanum Wilt Nursery in 2005, Yield and yield components on the six lines were equal to or better than Stoneville 474 (ST 474), the agronomic cultivar check. Bon size for the lines ranged from 4.96 to 5.27g with ST474 being 4,82g. Four lines had significantly heavier bolls than ST 474. Lint percentage for the lines ranged from 40.3 to 42.1% with ST474 being 43.6%. All lines had lint percentage significantly lower than the high lint percentage cultivar ST 474. Lint yield ranged from 827 to 1016 kg/ha with ST 474 being 858. No line was significantly different in yield from ST474. Fiber properties (HVI) were equal to or superior to St474. Micronarie ranged from 4.9 to 5.1, with ST at 5.3. All lines had significantly lower micronaire than ST474. Fiber length ranged from 28.3 to 29 mm with ST474 at 28.6. No lines had fiber length significantly different from ST474. Strength ranged from 279 to 303kNm/kg with ST474 being 286kNm/kg. One line had significantly greater fiber strength than ST474.

The breeding research for these lines was led by Roy G. Creech (Retired) of Mississippi Agricultural and Forestry Experiment Station. Evaluation and selection of final lines for release were made by Johnie N.
Jenkins, Jack C. McCarty, and Russell Hayes of the Agricultural Research Service and Roy G. Creech, John B. Creech and Daniel L. Haire of Mississippi Agricultural and Forestry Experiment Station. Partial funding for the development and valuation of these lines was furnished by Cotton Incorporated.

Small quantities of seed are available to cotton breeders, geneticists, and other research personnel upon written request to; Johnie N. Jenkins, USDA. ARS, Crop Science Research Laboratory. Box 5367, Mississippi State, MS 39762, It is requested that appropriate recognition of the source be given when these germplasm lines contribute to the development of a new, breeding line, hybrid or cultivar. Genetic material of this release will be deposited in the National Plant Germplasm System where it will be available for research purposes, including, development and commercialization of new cultivars.