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Crop Cultivars Resistant to Root-Knot Nematodes, Meloidogyne Species

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Crop Cultivars Resistant to Root-Knot Nematodes, Meloidogyne Species

With Information on Seed Sources

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INTERNATIONAL MELOIDOGYNE PROJECT
IMP
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A Cooperative Publication
of
THE DEPARTMENT OF PLANT PATHOLOGY
NORTH CAROLINA STATE UNIVERSITY
and
THE UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

RALEIGH, NORTH CAROLINA APRIL, 1979

PREFACE

The primary purpose of this publication is to encourage the evaluation and use of crop cultivars reported to be resistant to root-knot nematodes. Sufficient progress has been made in the development of cultivars resistant to *Meloidogyne* to make this tactic a very promising approach to control. Yet, there is evidence that nematologists, plant pathologists and plant breeders in developing countries are not using the available resistant cultivars and that many are not sufficiently aware that these cultivars exist. This is partially because most of the information on resistance is scattered in the literature and not readily accessible to workers, especially in developing countries. It is not generally known which resistant cultivars are commercially or otherwise available and from where seed material may be obtained.

This summary of crop cultivar resistance to root-knot nematodes, which includes information on seed suppliers, should facilitate the procurement of seed or propagative material for evaluation and use by the cooperators participating in the International *Meloidogyne* Project. Indeed, it was the many requests from project cooperators that prompted us to prepare this compilation. Although prepared primarily for cooperators working in developing countries, this information should be of interest to all nematologists, plant pathologists, horticulturists and others engaged in development and use of *Meloidogyne*-resistant cultivars.

The principal goals of the International *Meloidogyne* Project are (1) to increase production of economic food crops in developing nations, (2) to improve crop protection capabilities of developing nations, and (3) to advance knowledge about one of the world's most important groups of plant-parasitic nematodes. This publication should aid in achieving these goals.

Information contained herein is not complete; in particular, many numbered breeding lines or plant introductions with root-knot nematode resistance were omitted for sake of brevity. We hope that important omissions, as well as results of future research, will be brought to our attention.

We wish to thank the many people who furnished information for inclusion in this list. We also wish to thank the following who kindly checked the manuscript for accuracy and completeness: K. R. Barker, S. F. Jenkins, Jr., F. W. McLaughlin, L. W. Nielsen, N. T. Powell, J. P. Ross, A. C. Triantaphyllou, H. H. Triantaphyllou and R. E. Welty.

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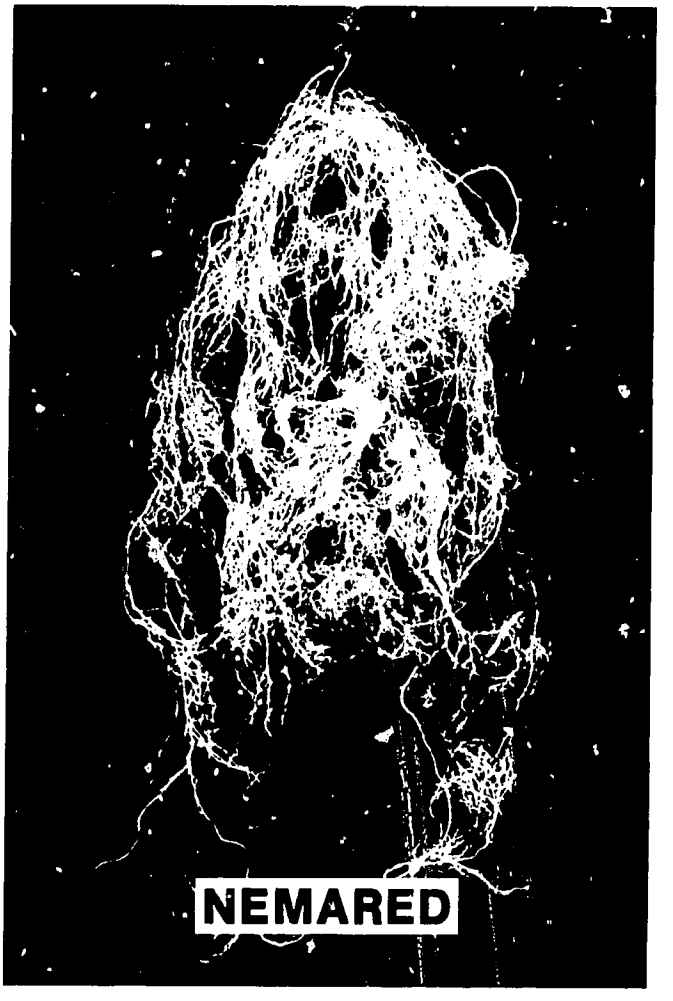

Photographs by W. Marvin Williams

Crop Cultivars Resistant to Root-Knot Nematodes, Meloidogyne Species

With Information on Seed Sources

I. INTRODUCTION

Considerable progress has been made in the development of cultivars resistant to root-knot nematodes since the recognition of morphologically and physiologically discrete species of *Meloidogyne* (Chitwood, 1949). The subject has been treated in numerous publications. The purpose of this review is to present that information about crop cultivar resistance to root-knot nematodes believed to be most useful to nematologists, plant breeders and specialists in allied fields for meeting immediate needs of producing optimum crop yields in developing countries where root-knot nematodes are causing severe losses.

This tabulation includes crop cultivars which have been reported to be resistant to one or more species of the root-knot nematode. Emphasis is given to listing of cultivars for which seed material is readily available, with reference to seed suppliers included (Table 1). Selected cultivars, breeding lines and plant introductions for which seed sources were not found are also listed (Table 2).

Some current and unpublished information about resistant cultivars and seed suppliers was obtained through contacts with seed companies and nematologists active in root-knot nematode resistance research. A complete literature review and listing of all cultivars, breeding lines and plant introductions with reported resistance was not our objective as this would have resulted in a lengthy list with little additional immediate usefulness. Furthermore, studies on the genetics and mechanisms of resistance were not subjects of this review, although some information on these topics is contained in the references. Reviews on cultivar resistance to *Meloidogyne* by Singh, Bhatti and Singh (1974), Fassuliotis (1976), Hartmann (1976) and Taylor and Sasser (1978) were very useful references for this compilation.

II. ADVANTAGES OF CROP RESISTANCE TO *MELOIDOGYNE.*

Other characteristics being equal, resistant or tolerant cultivars will out-yield susceptible plants in root-knot nematode infested fields. Furthermore, the need for other control methods, such as fallowing or soil treatment with nematicides, is minimized or eliminated. Resistant cultivars inhibit *Meloidogyne* reproduction, and a reduction in population density may permit the growing of susceptible crops more often in the rotation scheme.

Nematode resistance is one of the many factors to be considered by growers in crop selection, and this is why emphasis has been given to listing the commercially available resistant cultivars—they are assumed to be agronomically suited for certain soil and climate regimes, and to be good yielders under these conditions. Because they have been bred for particular areas with certain requirements and to produce a type of commodity acceptible to a specific clientele, cultivars must be re-evaluated for grower and consumer acceptance (as well as disease resistance) whenever introduced into new areas.

III. RESISTANCE RATINGS.

Scientists have used different criteria for assessing resistance in crops and often it was not possible to determine the criteria used. Resistance ratings based on a combination of root galling and nematode reproduction are convenient and usually adequate because of the generally high correlation between these parameters and crop damage (Taylor and Sasser, 1978). Where possible, resistance ratings shown in the tables are based on the following definitions:

A. *Resistant.* Resistant cultivars possess some characteristic(s) which inhibits gall formation by and

reproduction of one or more species of *Meloidogyne*. Resistance in crop cultivars is best defined by reference to susceptible cultivars of the same species. Resistant cultivars are categorized in the tables as being highly resistant (HR), moderately resistant (MR), or resistant (R). Highly resistant cultivars completely prevent galling and egg production or they prevent a large proportion (approximately 90% or more) as compared to susceptible cultivars. Moderately resistant cultivars are those which exhibit lesser levels of resistance to galling and reproduction. Cultivars are listed in the tables as resistant if we were unable to specify highly resistant or moderately resistant.

B. *Tolerant.* Cultivars listed as tolerant (T) have been found to resist the crop losses which would normally be expected based on the level of galling and nematode reproduction supported.

C. *Susceptible.* Susceptible (S) cultivars do not appear to resist galling and reproduction, and severe growth or yield suppressions result when they are grown in infested soils.

With the establishment at the IMP research center in Raleigh of a large collection of *Meloidogyne* populations from throughout the world, project staff have begun to screen resistant cultivars against populations from diverse localities and habitats. These studies, combined with the anticipated feedback from tests by local country cooperators in the various regions will further define limits on cultivar resistance. Interpretation of results should be greatly simplified and more meaningful if those testing for resistance follow standardized procedures (Taylor and Sasser, 1978).*

IV. OBTAINING SEED.

Seed material may be obtained directly from seed companies or individuals listed. Seed of some cultivars is available in very limited quantities; these limitations are noted where addresses of seed suppliers are listed. The crop improvement agencies or associations normally do not supply seed. Rather, they provide names and addresses of certified seed producers who, in turn, market seed. Those requiring further assistance in obtaining seeds of resistant cultivars may address specific inquiries to the IMP headquarters at Raleigh.

Furthermore, seed stocks of selected resistant cultivars will be maintained at the IMP headquarters, and seed packets will be provided to researchers requesting seed. Project cooperators may use this material to further screen cultivars under local conditions. We encourage the interchange among cooperators of results of local screening studies with resistant cultivars. This objective should be easier to achieve following initial coordination of the dissemination of seed samples to investigators. Project headquarters will serve as a clearinghouse for distribution to interested cooperators of resistant cultivars developed or identified in any of the project regions. Cooperators able to supply seed of local cultivars are encouraged to bring this information to our attention.

Various restrictions on and regulations pertaining to international exchange of seed and vegetative plant materials must be considered by persons intending to import from other countries.

NOTE: This compilation includes information taken from published reports or from individuals through personal communications. The International *Meloidogyne* Project and North Carolina State University assume no responsibility for the actual performance of cultivars listed.

*A very important result of the work of the International *Meloidogyne* Project is the finding that there are four widely distributed races of *Meloidogyne incognita*, and two races of *M. arenaria*. These races are easily recognized by their reaction in the North Carolina Differential Host Test (Taylor and Sasser, 1978, page 101). Race 1 of *M. incognita* attacks neither cv NC 95 tobacco nor Deltapine 16 cotton. Race 2 attacks the tobacco cultivar but not the cotton. Race 3 attacks the cotton cultivar but not the tobacco. Race 4 attacks both. Race 1 of *M. arenaria* attacks Florrunner peanut, Race 2 does not attack this plant cultivar. Other host differences, particularly differences in resistance of California Wonder pepper, have also been observed in *M. javanica*, but have not yet been thoroughly explored.

Since the existence of races has only been recently established, practically none of the cultivars listed have been tested with known races. Until this is done, there will be a degree of uncertainty as to resistance of any cultivar to all races of a species. At present, there is no way of knowing how important host race differences will be to the plant breeder, the research scientist, and the farmer. This should be kept in mind as possible explanation for discrepancies in research and failure of resistant cultivars to perform as expected in the fields.

The International *Meloidogyne* Project will be pleased to cooperate with plant breeders and others by identifying species and races of *Meloidogyne* in their local populations. IMP should also be consulted for further information on the subject.

TABLE 1. Resistant crop cultivars, seed sources and key references.

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
ROSACEAE							
Almond rootstock *(Prunus amygdalus* var. *amara)*							
'Alnem 1'		R				J. Kochba	Kochba & Spiegel-Roy, 1976
'Alnem 88'		R				J. Kochba	Kochba & Spiegel-Roy, 1976
'Alnem 201'		R				J. Kochba	Kochba & Spiegel-Roy, 1976
Peach rootstock *(Prunus persica)*							
'Nemaguard'	R	R				Univ. California, Davis	Sharpe et al., 1969
Plum rootstock *(Prunus divaricata)*							
'Myrobalan'	HR	HR				Univ. California, Davis	Hansen et al., 1957
Strawberry *(Fragaria ananassa)*	Strawberries appear to be inherently highly resistant to *M. incognita*, *M. javanica*, and *M. arenaria*.						
'Delite'			MR			Rayner Brothers Nursery	Dickstein & Krusberg, 1978
'Florida Ninety'			MR			North Carolina Crop Improvement Assoc.	Dickstein & Krusberg, 1978
'Raritan'			MR			North Carolina Crop Improvement Assoc.	Dickstein & Krusberg, 1978
'Redglow'			MR			North Carolina Crop Improvement Assoc.	Dickstein & Krusberg, 1978
FABACEAE							
Alfalfa *(Medicago sativa)*							
'Moapa'	R		S			California Crop Improvement Assoc.	Reynolds et al., 1970
'Nevada Syn XX'			HR			O. J. Hunt	Peaden et al., 1976
'Nevada Syn YY'	R		R			O. J. Hunt	Hunt, pers. comm., 1978
'Sonora'	R					California Crop Improvement Assoc.	Reynolds et al., 1970
'Vernal'	S		MR			Idaho Crop Improvement Assoc.; Nevada State Department of Agriculture	Hunt, pers. comm., 1977
Bean *(Phaseolus vulgaris)*							
'Contender'	S	MR				Asgrow Seed Co.; Stokes Seed	Tanveer & Saad, 1971
'Kibuu'	R	R				Kenya Agr. Res. Inst.	Ngundo, 1977
'Manoa Wonder'	R					Univ. of Hawaii	Hartmann, 1968
'Nyakahuti'	R	R				Kenya Agr. Res. Inst.	Ngundo, 1977
'Red Haricot'	R	R				Kenya Agr. Res. Inst.	Ngundo, 1977
'Rono'	R	R				Kenya Agr. Res. Inst.	Ngundo, 1977
'Saginaw'	R	R				Kenya Agr. Res. Inst.	Ngundo, 1977
'2.2.3.V.'	R	S		S		G. Anais	Messiaen, pers. comm., 1978
Bird's-foot Trefoil *(Lotus corniculatus)*							
'Empire'		MR				Canada Dept. of Agriculture; New York Seed Improvement Assoc.	Martin, 1961
Cowpea *(Vigna unguiculata)*							
'Calif. Blackeye No. 5'	R					California Crop Improvement Assoc.; Texas Dept. of Agriculture	Fassuliotis, 1976

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
'Colossus'	R					South Carolina Dept. of Seed Certification; Texas Dept. of Agriculture	Fassuliotis, 1976
'Magnolia Blackeye'	R					Mississippi Seed Improvement Assoc.; Texas Dept. of Agriculture	Fassuliotis, 1976
'Mississippi Purple'	R					Mississippi Seed Improvement Assoc.; Texas Dept. of Agriculture	Fassuliotis, 1976
'Mississippi Silver'	R					Mississippi Seed Improvement Assoc.; Texas Dept. of Agriculture	Fassuliotis, 1976
'Zipper Cream'	R					Florida Dept. of Agriculture and Consumer Services; Oklahoma Crop Improvement Assoc.	Fassuliotis, 1976
Crown Vetch *(Coronilla varia)*							
'Chemung'	R	R	S	R		Wyoming Seed Certification Service	Cope & Sherwood, 1965
'Emerald'	R	R	S	R		Iowa Crop Improvement Assoc.; Kansas Crop Improvement Assoc.	Cope & Sherwood, 1965
'Penngift'	R	R	S	R		New York Seed Improvement Co-operative	Cope & Sherwood, 1965
Lima Bean *(Phaseolus limensis)*							
'Nemagreen'	R					Asgrow Seed Co.	Wester et al., 1958
'Ventura N (White)'	MR					California Crop Improvement Assoc.	Allard, 1954
'Westan'	HR					California Crop Improvement Assoc.	Allard, 1954
Pea *(Pisum sativum)*							
'Wando'	HR	MR				Harris Co.; Stokes Seeds	Tanveer & Saad, 1971
Peanut *(Arachis hypogaea)*	Peanuts generally are highly resistant to *M. incognita*, *M. javanica* and *M. arenaria* (Race 2). They are susceptible to *M. hapla* and *M. arenaria* (Race 1).						
Soybean *(Glycine max)*							
'Bedford'	MR			MR		Missouri Seed Improvement Assoc.; Tennessee Crop Improvement Assoc.	Epps, pers. comm., 1978
'Bossier'	MR or S			MR		Louisiana Dept. of Agriculture; South Carolina Dept. of Seed Certification	Minton et al., 1975; Epps, pers. comm., 1978
'Bragg'	R	MR	MR or S	MR		Arkansas State Plant Board; North Carolina Crop Improvement Assoc.	Good, 1973; Caviness & Riggs, 1976
'Brysoy-9'	MR					Arkansas State Plant Board	Epps, pers. comm., 1978
'Celest'	R					Delaware Crop Improvement Assoc.	Crittenden, 1977
'Centennial'	R					Mississippi Seed Improvement Assoc.; North Carolina Crop Improvement Assoc.	Kinloch, pers. comm., 1978
'Cobb'	MR			S		Georgia Crop Improvement Assoc.; South Carolina Dept. of Seed Certification	Caviness & Riggs, 1976; Epps, pers. comm., 1978

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
'Coker 136'	MR			S		Coker's Pedigreed Seed Co.; South Carolina Dept. of Seed Certification; North Carolina Crop Improvement Assoc.	Epps, pers. comm., 1978
'Coker 338'	MR			S		Coker's Pedigreed Seed Co.; South Carolina Dept. of Seed Certification; North Carolina Crop Improvement Assoc.	Epps, pers. comm., 1978
'Coker Hampton 266A'	MR	MR				Coker's Pedigreed Seed Co.; South Carolina Dept. of Seed Certification	Epps, pers. comm., 1978
'Dare'	MR					Arkansas State Plant Board; North Carolina Crop Improvement Assoc.	Good, 1973
'FFR-666'	S			MR		FFR Cooperative; North Carolina Crop Improvement Assoc.	Minton et al., 1975; Epps, pers. comm., 1978
'Forest'	R	R		MR		Mississippi Seed Improvement Assoc.; North Carolina Crop Improvement Assoc.	Epps, pers. comm., 1978; Kinloch and Hinson, 1974
'Govan'	MR			MR		South Carolina Dept. of Seed Certification	Epps, pers. comm., 1978
'Hale-7'	MR					Arkansas State Plant Board	Epps, pers. comm., 1978
'Hardee'	MR					Florida Dept. of Agric. & Consumer Services; South Carolina Dept. of Seed Certification.	Epps, pers. comm., 1978
'Hill'	R					Arkansas State Plant Board; Louisiana Dept. of Agric.	Good, 1973
'Hood 7'	MR					Arkansas State Plant Board; Louisiana Dept. of Agric.	Good, 1973
'Hutton'	MR			R or S		North Carolina Crop Improvement Assoc.; Florida Dept. of Agriculture and Consumer Services.	Minton et al., 1975; Epps, pers. comm., 1978
'James'	R					Delaware Crop Improvement Assoc.	Crittenden, 1976
'Lee 74'	R	R				Arkansas State Plant Board; North Carolina Crop Improvement Assoc.	Epps, pers. comm., 1978; Kinloch and Hinson, 1974.
'McNair 600'	R	R		R		McNair Seed Co.; North Carolina Crop Improvement Assoc.	Minton et al., 1975; Kinloch and Hinson, 1974.
'York'	MR					Virginia Crop Improvement Assoc.; North Carolina Crop Improvement Assoc.	Good, 1973
Soybean, Edible *(Glycine max)*							
'Kahala'	R					Univ. of Hawaii	Gilbert et al., 1970
'Kailua'	R					Univ. of Hawaii	Gilbert et al., 1970
PASSIFLORACEAE							
Passionfruit *(Passiflora edulis* var. *flavicarpa)*							
'Yellow Fruit Variety'	R	R		R		Director of Agriculture, Fiji	Kirby, 1978
CUCURBITACEAE	Species of the Cucurbitaceae appear to generally possess resistance to *M. hapla*.						

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
Muskmelon *(Cucumis melo)*							
'Edisto 47'		R			M-MR	Park Seed Co.; Asgrow Seed Co.	Elmstrom & Hopkins, 1973; Mathur et al., 1971b.
'Honey Rock'		R				Stokes Seeds	Mathur et al., 1971b.
'Perlita'		R				Asgrow Seed Co.	Mathur et al., 1971b.
'Planters Jumbo'					M-MR	Willhite Seeds; Asgrow Seed Co.	Elmstrom & Hopkins, 1973
'VBL 67-2'					M-MR	U.S. Vegetable Laboratory	Elmstrom & Hopkins, 1973.
'VBL 67-7'					M-MR	U.S. Vegetable Laboratory	Elmstrom & Hopkins, 1973.
Watermelon *(Citrullus lunatus)*							
'Charleston Gray'	S	S	HR	S		Asgrow Seed Co.; Harris Co.; Stokes Seeds; Colorado SeedGrowers Assoc.; Texas Dept. of Agriculture	Taylor & Sasser, 1978
'Dixie Queen'		R	HR			Park Seed Co.	Tanveer & Saad, 1971; Sasser, 1954
MALVACEAE							
Cotton *(Gossypium hirsutum)*	Cotton is inherently highly resistant to *M. incognita* (Races 1 and 2), *M. javanica* and *M. hapla*; but most cultivars are susceptible to *M. incognita* (Races 3 and 4).						
'Tamcot SP 21'	HR*					Texas Dept. of Agriculture	Bird, 1976
'Tamcot SP 23'	HR*					Texas Dept. of Agriculture	Bird, 1976
*These cultivars possess resistance to a wilt complex caused by *Fusarium oxysporum vasinfectum* and *M. incognita*.							
Okra *(Abelmoschus moschatus)*							
'Clemson Spineless'	S	S	HR	MR		South Carolina Dept. of Seed Certification	Sasser, 1954
EUPHORBIACEAE							
Cassava *(Manihot esculenta)*							
'Beqa'	S	S		MR		Director of Agriculture, Fiji	Kirby, 1977
'Merelesita Hybrid'	S	MR		HR		Director of Agriculture, Fiji	Kirby, 1977
'Sokabale'	S	S		MR		Director of Agriculture, Fiji	Kirby, 1977
'Vulatolu'	S	MR		MR		Director of Agriculture, Fiji	Kirby, 1977
'Yabia Damu'	S	MR		MR		Director of Agriculture, Fiji	Kirby, 1977
VITACEAE							
Grape Rootstock *(Vitis* sp.)							
'A x R #1'	HR					Univ. California, Davis	Hackney & Ferris, 1975
'Carignane'	HR					Univ. California, Davis	Hackney & Ferris, 1975
'Dog Ridge'	T					Univ. California, Davis	Raski et al., 1973
'Harmony'	HR					Univ. California, Davis	Hackney & Ferris, 1975
'Salt Creek' of California, U.S.A.	T					Univ. California, Davis	Raski et al., 1973
SOLANACEAE							
Eggplant *(Solanum melongena)*							
'Black Beauty'	MR or S	HR or S				Park Seed Co.; Asgrow Seed Co.	Birat, 1966; Mashkoor Alam et al., 1974; Sasser, 1954

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
Pepper (*Capsicum* sp.)							
'All Big'	MR					Asgrow Seed Co.	Anon. (Trinidad), 1974
'California Wonder'		R				Stokes Seeds	Taylor & Sasser, 1978
'Early California Wonder'	S	MR	S	S		Stokes Seeds; Keystone Seed Co.	Hare, 1956
Tobacco (*Nicotiana tabacum*)							
'Coker 86'	R					Coker's Pedigreed Seed Co.	Collins et al., 1975
'Coker 254'	R					Coker's Pedigreed Seed Co.	Collins et al., 1975
'Coker 258'	R					Coker's Pedigreed Seed Co.	Collins et al., 1975
'Coker 347'	R					Coker's Pedigreed Seed Co.	Collins et al., 1975
'NC 79'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
'NC 88'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
'NC 89'	R					North Carolina Crop Improvement Assoc.	Powell, pers. comm., 1978
'NC 95'	R	S	S	S		North Carolina Crop Improvement Assoc.	Moore et al., 1962
'NC 98'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
'NC 2512'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
'SC 72'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
'Speight G-15'	R					Speight Seed Farms	Collins et al., 1975
'Speight G-23'	R					Speight Seed Farms	Collins et al., 1975
'Speight G-28'	R					Speight Seed Farms	Collins et al., 1975
'Speight G-33'	R					Speight Seed Farms	Collins et al., 1975
'Speight G-41'	R					Speight Seed Farms	Collins et al., 1975
'Va 770'	R					North Carolina Crop Improvement Assoc.	Collins et al., 1975
Tomato (*Lycopersicon esculentum*)							
'Ace-Hy'					M-R	Petoseed Co.	Watterson, pers. comm., 1978
'AMEX-VFN'					M-R	Asgrow Seed Co.	Asgrow Seed Co., 1977
'Anahu'	R	R				Univ. Hawaii	Winstead & Riggs, 1963
'Anahu-R'	R	R				Univ. Hawaii	Gilbert et al., 1969
'Atkinson'	R	R		R		Petoseed Co.	Singh & Choudhury, 1973
'Auburn 76'	R					Montgomery Seed & Supply Co.; Petoseed Co.	Greenleaf et al., 1977
'Beefeater'	R					Stokes Seeds	Jenkins & Averre, no date
'Beefmaster'	R					Harris Seed Co.; Park Seed Co,; Petoseed Co.	Jenkins & Averre, no date
'Better Boy'					M-R	Park Seed Co.; Stokes Seeds; Petoseed Co.	Watterson, pers. comm., 1978
'Bigset'					M-R	Petoseed Co.	Watterson, pers. comm., 1978
'Big Seven'	R					Park Seed Co.	Southards, 1973
'Bonus'					M-R	Park Seed Co.; Petoseed Co.	Watterson, pers. comm., 1978
'Calmart'	R	R				Petoseed Co.	Fassuliotis, 1976; Philis & Vakis, 1977
'Canton B'					M-R	v.d. Berg, Zaad Handel	Netscher, 1976
'Catala'	R					Caillard-Graines	Anon. (Surinam), 1975; Netscher, 1976
'Fengshan Manuli'					M-R	Farmers Seeds, Taiwan	Netscher, 1976
'Healani'	R	R				Univ. Hawaii	Sikora et al., 1973
'Hope 1'					M-R	Takii & Co.	Netscher, 1976
'Hope 2'					M-R	Takii & Co.	Netscher, 1976
'Kalohi'	R	R				Univ. Hawaii	Sikora et al., 1973

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
'Kewalo'	R					Univ. Hawaii	Fassuliotis, 1976
'Kyōryoku Gokō'	R					Musashi Breeding Farm Co.	Yamada & Takakura, 1975
'Manalucie'	R	R		R		Park Seed Co.; Asgrow Seed Co.	Singh & Choudhury, 1973
'Marmande'					M-R	Pecaut	Messiaen, pers. comm., 1978
'Marmar'		R				Hurst Gunson Cooper Taber Ltd.	Philis & Vakis, 1977
'Marsol'	R	R		R		Vilmorin-Andrieux	Macaron et al., 1976
'Martarum'	R	R				The National University Institute of Agriculture, Israel	Muro, 1976; Philis & Vakis, 1977
'Master N 52 H'					M-R	Takii & Co.	Netscher, 1976
'Master N 53 H'					M-R	Takii & Co.	Netscher, 1976
'Moneymaker'					M-R	Pecaut	Messiaen, pers. comm., 1978
'Monte Carlo'	R					Petoseed Co.	Watterson, pers. comm., 1978
'Nemared'	R	R				Oklahoma Foundation Seed Stocks	Malo, 1964
'Nematex'	HR	HR		HR		Porter & Son	Dropkin, 1969
'Park's Whopper'					M-R	Park Seed Co.	Fassuliotis, pers. comm., 1978
'Patriot'	HR	HR				W. A. Hills	Hills et al., 1978
'Peto 662 VFN'	R					Petoseed Co.	Southards, 1973
'Piersol'	R	R		R		Vilmorin-Andrieux	Macaron et al., 1976
'Ponderosa'	MR					Stokes Seeds; Park Seed Co.	Khan et al., 1975
'Resa Plus'					M-R	Sluis & Groot	Netscher, 1976
'Roma'					M-R	Pecaut	Messiaen, pers. comm., 1978
'Tavasque Fl'					M-R	Vilmorin-Andrieux	Netscher, 1976
'Terrific'					M-R	Park Seed Co.; Petoseed Co.	Watterson, pers. comm.,1978
'UHN 11'					M-R	Takii & Co.	Netscher, 1976
'UHN 52'					M-R	Takii & Co.	Netscher 1976
'UHN 64 H'					M-R	Takii & Co.	Netscher, 1976
'UHN 65 H'					M-R	Takii & Co.	Netscher, 1976
'Ultra Boy VFN'					M-T	Stokes Seeds	Stokes Catalog, 1978
'Ultra Girl FVN'					M-R	Stokes Seeds	Stokes Catalog, 1978
'VFN - 8'	R	R		R		Petoseed Co.; Asgrow Seed Co.	Singh, 1970
'70 T 82'		R				P. G. Smith	Philis & Vakis, 1977
'St. Pierre'					M-R	Pecaut	Messiaen, pers. comm., 1978
'Ronita'					M-R	Petoseed Co.	Fassuliotis, pers. comm., 1978
'Rossol'	R	R				Petoseed Co.; Vilmorin-Andrieux	Fassuliotis, 1976; Netscher, 1976
'Royal Chico'					M-R	Petoseed Co.	Watterson, pers. comm., 1978
'Small Fry'					M-R	Harris Seed Co.; Park Seed Co.; Petoseed Co.; Stokes Seeds	Watterson, pers. comm., 1978
CONVOLVULACEAE							
Sweet Potato *(Ipomoea batatas)*							
'Acadian'				R		Louisiana Dept. of Agric.	Giamalva et al., 1960
'Carver'	MR					Alabama Crop Improvement Assoc.	Whatley & Philis, 1977
'Centennial'				R	MIW-R	North Carolina Crop Improvement Assoc.	Giamalva et al., 1960; Golden & Birchfield, 1978
'Drivi Drivi'	S	MR		S		Director of Agriculture, Fiji	Kirby, 1977
'Georgia Red'					M-MR	North Carolina Crop Improvement Assoc.	Jenkins & Averre, no date
'Gold Rush'				R		Louisiana Dept. of Agric.	Giamalva et al., 1960
'Illiula'	MR	HR		S		Director of Agriculture, Fiji	Kirby, 1977
'Jasper'	R					Louisiana Dept. of Agric.; Mississippi Seed Improvement Assoc.	Fassuliotis, 1976
'Jewel'	R					North Carolina Crop Improvement Assoc.	Giamalva et al., 1960

TABLE 1. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					Seed Suppliers[3]	References[4]
	MI	MJ	MH	MA	Other		
'Navuso Local'	MR	MR		S		Director of Agriculture, Fiji	Kirby, 1977
'N.C. Porto Rico 198'	S	R	S	R	ME-R	North Carolina Crop Improvement Assoc.	N.C. Crop Improvement Assoc., 1978
'Painter'					M-MR	Virginia Crop Improvement Assoc.	Jenkins & Averre, no date
'Porto Rico'	S	R	S	R	ME-R	Louisiana Dept. of Agric.; South Carolina Dept. of Seed Certification	Giamalva et al., 1960; Sasser, 1972
'Samoa Pink'	MR	HR		S		Director of Agriculture, Fiji	Kirby, 1977
'Whitestar'	R					Louisiana Dept. of Agric.	Martin et al., 1970
'W-13' (germplasm)	HR					U.S. Vegetable Laboratory	Jones et al., 1975
'W-51' (germplasm)	HR	HR	HR		MIW-R	U.S. Vegetable Laboratory	Dukes et al., 1978
'W-178' (germplasm)	HR					U.S. Vegetable Laboratory	Jones et al., 1975
POACEAE	Species of this family are generally inherently resistant to *M. hapla*.						
Bermuda Grass *(Cynodon dactylon)*							
'Coastal'	HR	HR	HR	HR		Georgia Crop Improvement Assoc.; North Carolina Crop Improvement Assoc.	McGlohon et al., 1961
Corn *(Zea mays)*							
'Carmel Cross'	HR	HR				Stokes Seeds	Tanveer & Saad, 1971
'Golden Beauty Hybrid'	MR	S				Asgrow Seed Co.	Tanveer & Saad, 1971
'Golden Cross Bantam'	MR	S				Asgrow Seed Co.	Tanveer & Saad, 1971
'Span Cross'	HR	HR				Stokes Seeds	Tanveer & Saad, 1971

NOTE: The major root-knot nematode species on a worldwide basis are *M. incognita*, *M. javanica*, *M. hapla* and *M. arenaria*. Table 1 shows many cultivars with resistance to *M. incognita* and *M. javanica*, and fewer with resistance to *M. hapla* and *M. arenaria*. There are some reports in the literature and in seed catalogs of cultivars being resistant to "root-knot" or "nematodes" without indicating any particular species of *Meloidogyne*. In these cases, the resistance rating is shown in the "other" column of Table 1 as *Meloidogyne* sp., along with the less important but known species. It is very probable that in most cases the resistance is to *M. incognita*, especially for tomato, since early breeding for resistance was done using that species.

[1] MI=*M. incognita*; MJ=*M. javanica*; MH=*M. hapla*; MA=*M. arenaria*; ME=*M. exigua*; MIW=*M. incognita wartellei*; M=*Meloidogyne* sp.
[2] HR=highly resistant; MR=moderately resistant; R=resistant; T=tolerant; S=susceptible.
[3] Complete addresses of seed suppliers are listed beginning on page 18. Several suppliers have indicated they are able to supply only small quantities of seed material, and these limitations are noted with the addresses.
[4] References cited are to selected reports of resistance to cover different host parasite reactions recorded but not including multiple reports of the same rating for a cultivar-*Meloidogyne* species interaction.

TABLE 2. Resistant crop cultivars for which seed sources are unknown, and key references.

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
ROSACEAE						
Apricot rootstock *(Prunus armeniaca)*						
'Klabi'					M-HR	Minz & Cohn, 1962
Peach rootstock *(Prunus persica)*						
'Bokhara'	R	S				Hansen et al., 1956
'Dwarf Hybrid No. 7'	R					Hansen et al., 1956
'Okinawa'	R	R				Sharpe, 1957
'Rancho'	R	S				Malo, 1964
'Shalil'	R	S				Havis et al., 1950
'S-37'	R	MR				Havis et al., 1950; Good, 1960
'Yunnan'	R	S				Havis et al., 1950
Plum rootstock *(Prunus divaricata)*						
'Marianna'	HR	HR				Hansen et al., 1957
FABACEAE						
Alfalfa *(Medicago sativa)*						
'African'	HR	HR	S			Reynolds, 1955
'College glutinosa C/1125D'			T			Yeates et al., 1973
'Ed - 9'	R					Viglierchio, 1978
'Hilmar'			R			Stanford et al., 1958
Bean *(Phaseolus vulgaris)*						
'Alabama No. 1'	R	S	S	S	MT-S	Blazey et al., 1964
'Alabama No. 2'					M-R	Isbell, 1931
'Alabama No. 18'	R	S	S	S	MT-S	Blazey et al., 1964
'Alabama No. 19'	R	S	S	S	MT-S	Blazey et al., 1964
'Bountiful'	HR	MR				Tanveer & Saad, 1971
'Brittle Wax'	HR	MR				Tanveer & Saad, 1971
'Coffee Wonder'	R	S	S	S	MT-S	Blazey et al., 1964
'Isbell's Nematode Resistant'	R	S	S	S	MT-S	Blazey et al., 1964
'Springwater Half Runner'	R	S	S	S	MT-S	Blazey et al., 1964
'Tender Pod'	MR	S				Tanveer & Saad, 1971
'Wingard Wonder'	R	S	S	S	MT-S	Blazey et al., 1964
Bird's-foot Trefoil *(Lotus corniculatus)*						
'Cascade'		MR				Martin, 1961
'Granger'		MR				Martin, 1961
Cowpea *(Vigna unguiculata)*						
'Alacrowder'	MR	S				Thomason & McKinney, 1960
'Arlington'	MR	S				Thomason & McKinney, 1960
'Blackeye 5'	HR	S				Thomason & McKinney, 1960
'Blackeye 7'	HR	S				Thomason & McKinney, 1960
'Brabham Victor'	R					Fassuliotis, 1976
'Browneye 7'	HR	S				Thomason & McKinney, 1960
'Browneye 8'	MR	S				Thomason & McKinney, 1960
'Browneye 9'	HR	S				Thomason & McKinney, 1960
'Brown Seeded Local'	R	R		R		Choudhury et al., 1969
'Chinese Red'	HR	S				Thomason & McKinney, 1960

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
'Chino 2'	HR	S				Thomason & McKinney, 1960
'Chino 3'	MR	S				Thomason & McKinney, 1960
'Clay'	R					Fassuliotis, 1976
'Early Red'	HR	S				Thomason & McKinney, 1960
'Early Sugar Crowder'	HR	S				Thomason & McKinney, 1960
'Extra Early Blackeye'	MR	S				Thomason & McKinney, 1960
'Floricream'	R					Fassuliotis, 1976
'Grant'	MR	S				Thomason & McKinney, 1960
'Groit'	HR	S				Thomason & McKinney, 1960
'Honolulu'	MR	S				Thomason & McKinney, 1960
'Iron'	R	R		R		Hare, 1959
'Iron 3-5'	HR	S				Thomason & McKinney, 1960
'Iron 9-1'	HR	S				Thomason & McKinney, 1960
'Iron 9-10'	HR	S				Thomason & McKinney, 1960
'Lady'	MR	S				Thomason & McKinney, 1960
'Mak 1/1'	R					Amosu, 1974
'Mississippi Crowder'	R	R		R		Choudhury et al., 1969
'New Era'	HR	S				Thomason & McKinney, 1960
'Purple Hull Pink Eye'	R	R		R		Choudhury et al., 1969
'Red Ripper'	HR	S				Thomason & McKinney, 1960
'Rice'	HR	S				Thomason & McKinney, 1960
'Suwannee'	HR	S				Thomason & McKinney, 1960
'Texas Purple Hull'	MR	S				Thomason & McKinney, 1960
'Victor'	HR	S				Thomason & McKinney, 1960
'Virginia Blackeye'	MR	S				Thomason & McKinney, 1960
'Whippoorwill'	MR	S				Thomason & McKinney, 1960
Lespedeza (*Lespedeza* sp.)						
'Rowan'	R	S	S	S		Wells et al., 1953
Lima Bean (*Phaseolus limensis*)						
'Hopi 5989'	R					Allard, 1954
'L 76'	HR					Allard, 1954
'Mezcla'	R					Sanchez, 1965; Viglierchio, 1978
'Oklahoma N12-5'	MR					Allard, 1954
'Oklahoma N13-3'	MR					Allard, 1954
Pea (*Pisum sativum*)						
'Blue Bantam'	MR	S				Tanveer & Saad, 1971
'Burpeeana Early'	HR	MR				Tanveer & Saad, 1971
'Carter's Dairy'	MR	S				Tanveer & Saad, 1971
Soybean (*Glycine max*)						
'Anderson'	R					Crittenden, 1952
'Armredo'	MR					Good, 1973
'Bethel'	MR					Crittenden et al., 1961
'Blackhawk'	MR		R or S			Caviness & Riggs, 1976
'Chief'	R					Dropkin, 1963
'Delmar'	R					Crittenden & Cole, 1963
'Dyer'	R			MR		Good, 1973
'Habaro'	MR	MR				Caviness & Riggs, 1976
'Haberlandt'	R					Crittenden, 1961
'Illsoy'	MR		MR			Good, 1973
'Jackson'	R					Good, 1973
'Laredo'	MR	MR				Good, 1973; Caviness & Riggs, 1976
'Mandarin'	R					Crittenden, 1961
'Mendota'	R					Crittenden, 1961
'Minco'	R					Peru Min. Agric., 1973

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
'Monroe'	MR					Good, 1973
'Mukden'	R					Crittenden, 1961
'Palmetto'	MR					Good, 1973
'Pine Dell'	S	MR				Caviness & Riggs, 1971
'Peking'	R or S					Crittenden, 1961; Good, 1973
'Roanoke'	MR					Good, 1973
Soybean, Edible *(Glycine max)*						
'Mokapu summer'	R					Gilbert et al., 1970
'Kaikoo'	R					Gilbert et al., 1970
Subterranean clover *(Trifolium subterraneum)*						
'Mt. Barker AK 510'			T			Yeates et al., 1973
'Tallarook AK 511'			T			Yeates et al., 1973
Vetch *(Vicia sativa)*						
'Alabama 1894'	R	R				Minton et al., 1966
'Warrior'	R	R				Minton et al., 1966
CUCURBITACEAE						
Cucumber *(Cucumis sativus)*						
'Cubit'			MR			Sasser, 1954
'Marketer'	S	S	MR	S		Sasser, 1954
Gherkin *(Cucumis anguria)*						
'Small Gherkin'	S	R	R	S		Winstead & Sasser, 1956
'West India Gherkin'	MR	R	R	MR		Winstead & Sasser, 1956
Muskmelon *(Cucumis melo)*						
'AC 68-55'					M-MR	Elmstrom & Hopkins, 1973
'AC 68-52'					M-MR	Elmstrom & Hopkins, 1973
'Bhavata'		R				Mathur et al., 1971b
'Gulf Coast'					M-MR	Elmstrom & Hopkins, 1973
'K-3054'		R				Mathur et al., 1971b
'K-4694'		R				Mathur et al., 1971b
'Kazala - 6'		R				Mathur et al., 1971b
'Modget Miracle'		R				Mathur et al., 1971b
'Pharsa Kakri'		R				Mathur et al., 1971b
'Summerpur - 1'		R				Mathur et al., 1971b
'Summerpur - 6'		R				Mathur et al., 1971b
'Vardae'		R				Mathur et al., 1971b
Squash *(Cucurbita moschata)*						
'Butternut'			MR			Sasser, 1954
Squash *(Cucurbita pepo)*						
'Black Zucchini'			MR			Sasser, 1954
'Caserta'			MR			Sasser, 1954
'Early Prolific Straightneck'	S	S	MR	S		Sasser, 1954

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
MALVACEAE						
Cotton *(Gossypium hirsutum)*						
'Ashmouni'	T					Embabi et al., 1976
'Auburn 56'	T					Brodie et al., 1960
'Auburn 623 RNR'	HR					Shepherd, 1970
'Bahtim 136'	R					Embabi et al., 1976
'Bahtim 185'	T					Embabi et al., 1976
'Bayou'	MR					Jones & Birchfield, 1967
'Clevewilt - 6'					M-R	Miles, 1939
'Dendera'	T					Embabi et al., 1976
'Giza 68'	T					Embabi et al., 1976
'La Mexico Wild'	R					Jones et al., 1958
'Menouti'	T					Embabi et al., 1976
Okra *(Abelmoschus moschatus)*						
'Long Green Smooth'		R				Birat, 1964
VITACEAE						
Grape rootstock *(Vitis* sp.)						
'du Lot'					M-T	Sauer, 1967
'Salt Creek' of South Africa		R			M-HR	Sauer, 1977; Uys, 1976
'101-14'					M-T	Sauer, 1967
'1613'		R				Sauer, 1977
MYRTACEAE						
Guava rootstock *(Psidium friedrichsthalianum)*	R			R		Fernandex Diaz-Silveira, 1975
RUBIACEAE						
Coffee, Arabian *(Coffea arabica)*						
'Amfillo (1141-2)'					ME-MR	Curi et al., 1970
'Barbuk Sudan (1171-26)'					ME-MR	Curi et al., 1970
'Dalle mixed (1150-2)'					ME-MR	Curi et al., 1970
'N 39 (1129-7)'					ME-MR	Curi et al., 1970
'Tafari Kela (1161-9)'					ME-MR	Curi et al., 1970
Coffee, Robusta *(Coffea canephora)*						
'Bukobensis'					ME-HR	Curi et al., 1970
'Kawisari Col. 6'					ME-HR	Curi et al., 1970
'Kawisari Col. 8'					ME-HR	Curi et al., 1970
'Kouillou'					ME-R	Curi, 1969
'Laurentii Col. 10'					ME-HR	Curi et al., 1970
'Robusta Col. 3'					ME-HR	Curi et al., 1970
'Robusta Col. 10'					ME-HR	Curi et al., 1970
BRASSICACEAE						
Sugarbeet *(Beta vulgaris)*						
'KWS Sacchaploy'	R					Naqvi & Mahmood, 1974

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
SOLANACEAE						
Eggplant						
(Solanum melongena)						
'Bhanta'		HR				Birat, 1966
'Coolie'		R				Mathur et al., 1971a
'Giant of Banaras'	MR					Mashkoor Alam et al., 1974
'Gola'	MR					Mashkoor Alam et al., 1974
'Long Purple Cluster'		R				Setty & Reddy, 1969
'Mathis B'		R				Mathur et al., 1971a
'Meyer's Market'	R					Calinga & Palo, 1972
'Muktakeshi'		MR				Birat, 1966
'Round Red'		MR				Birat, 1966
'Vijaya'	R					Yadav et al., 1975
Pepper						
(Capsicum sp.)						
'Anaheim Chile'					M-R	Hare, 1951
'Bontoc Sweet Long'	R					Palo & Calinga, 1969
'Carolina Hot'					M-R	Singh et al., 1974
'Dingras Rainy Season'	R					Palo & Calinga, 1969
'Italian Pickling'					M-R	Hare, 1951
'Long Red'					M-R	Mashkoor Alam et al., 1974
'Mississippi Nemaheart'					M-R	Hare, pers. comm., 1978
'Oakview Wonder'	S	R	S	R		Hare, 1956
'Red Chile'	MR	R	S	R		Hare, 1956
'Ruby King'				R		Hare, 1957
'Santanka XS'	R	R	S	R		Hare, 1956
'World Beater'	R	HR				Palo & Calinga, 1969; Sasser, 1954
Potato						
(Solanum sp.)						
'Chata Blanca'	R					Franco, 1972
'Chata Negra'	R					Franco, 1972
'HC 294'					M-R	Anon. (India), 1965
'Inti Sipi'	R					Franco, 1972
Tobacco						
(Nicotiana tabacum)						
'Bell 110'					M-R	Collins et al., 1972
'F 210'					M-R	Murai et al., 1976
'Florida 22'	R					Malo, 1964
'Georgia 1469	R					Collins et al., 1975
'Okinawa'	S			HR		Fukudome & Yamaguchi, 1976
'Osibeutchio'	R					Park et al., 1977
'PD 79'					M-R	Walunjkar et al., 1976
'PD 611'	R	S	S	S		Malo, 1964
'SC 66'	R					Walunjkar et al., 1976
'Speight G-35'					M-R	Walunjkar et al., 1976
'T 209'					M-R	Murai et al., 1975
'Va 080'	R					Terrill et al., 1974
Tomato						
(Lycopersicon esculentum)						
'All Round'	R					Zaginailo, 1970
'Chicogrande'	MR					Khan et al., 1975
'Coldset'	R					Sidhu & Webster, 1973
'Early Girl'					M-R	Jenkins & Averre, no date
'Eurocross'	R					Zaginailo, 1970
'Extase'	R					Calinga & Palo, 1972
'F.I. Hope No. 1'					M-MR	Rao et al., 1972
'F.I. Hope No. 2'					M-MR	Rao et al., 1972

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
'Florida'	R	R				Malo, 1964
'Florida-Hawaii Cross'	R					Winstead & Riggs, 1963
'Gawaher (Giza-1)'	R	R				Moh et al., 1972
'Gilestar'	R					Winstead & Riggs, 1963
'Hawaii-55'	R					Winstead & Riggs, 1963
'Hawaiian Cross'	R	R				Malo, 1964
'Hikan (Light)'	MR					Yamada & Takakura, 1975
'Hoju'	MR					Yamada & Takakura, 1975
'Illinois T-19'	R					Hussein & Oteifa, 1956
'Kolea'	R					Fassuliotis, 1976
'Kolea-C'	R	R				Malo, 1964
'LA 1221'					M-R	Viglierchio, 1978
'Leader'		R				Lal & Hameed, 1969
'Maascross'					M-MR	Sahat & Sunarjono, 1974
'Merbein Canner'	R	R				Malo, 1964
'Merbein Early'	R	R				Malo, 1964
'Merbein Mid Season'	R	R				Malo, 1964
'Merbein Monarch'	R	R				Malo, 1964
'Monita'					M-R	Laterrot, 1973
'Montabo'					M-R	Laterrot, 1973
'Montfavet'	R					Muro, 1976
'Multicross F 1'					M-R	Laterrot, 1973
'Native (Bicol Selection)'	R					Calinga & Palo, 1972
'Pelican'	R					Hernandez et al., 1972
'Piernita'	R					Muro, 1976
'Puunui'	R					Gilbert et al., 1969
'Red Glow'	R					Southards, 1973
'Rodeplaat Albesto'			S		M-R	Joubert & Rappard, 1971
'Royal Flush'					M-R	Jenkins & Averre, no date
'Sunburst'					M-R	Jenkins & Averre, no date
'Tuckcross K'	R					Fassuliotis, 1976
'Urbana'	T					Hussein & Oteifa, 1956
'VFN - 368'	R					Fassuliotis, 1976
CONVOLVULACEAE						
Sweet Potato *(Ipomoea batatas)*						
'Allgold'	S	S	S	R or S	ME-R	Sasser, 1972
'Apache'	R					Martin et al., 1970
'Big Stem Jersey'					M-HR	Kushman & Machmer, 1947
'Buster Haynes Red'	R					Fassuliotis, 1976
'Heart'					M-R	Jenkins & Averre, no date
'Heartogold'	R	R	R	R		Gentile et al., 1962
'Hopi'	R					Martin et al., 1970
'Kandee'	R					Fassuliotis, 1976
'Kansas 40'					M-MR	Kushman & Machmer, 1947
'Keyline White'	R					Fassuliotis, 1976
'Koganesengan'					M-R	Sakai, 1967
'Kyushu No. 52'					M-R	Kikukawa & Sakai, 1969
'LA 1-80'					M-R	Giamalva et al., 1960
'Maryland Golden'		R		R		Sasser, 1954
'Minamiyutaka'					M-R	Sakamoto, 1976
'Nemagold'	HR	HR	HR	HR		Giamalva et al., 1960
'Norin No. 2'	R					Nishizawa, 1974
'Norin No. 5'	R					Nishizawa, 1974
'Norton'					M-MR	Kushman & Machmer, 1947
'Nugget'	R					Jenkins & Averre, no date
'Orange Little Stem'					M-R	Kushman & Machmer, 1947
'Orlis'					M-R	Dean & Struble, 1953
'Purple Stem Triumph'					M-MR	Kushman & Machmer, 1947
'Red Jersey'					M-HR	Kushman & Machmer, 1947
'Ruby'	HR					Hanna et al., 1967

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
'Sunnyside'	R					Martin et al., 1970
'Taihaku'	R					Nishizawa, 1974
'Tinian'	R	R				Gentile et al., 1962
'White Bunch'	R					Fassuliotis, 1976
'White Triumph'	R					Fassuliotis, 1976
'Yellow Jersey'					M-HR	Kushman & Machmer, 1947
POACEAE						
Carpetgrass *(Axonopus affinis)*	HR	HR	HR	HR		McGlohon et al., 1961
Corn *(Zea mays)*						
'Alexandria'	MR	MR				Ibrahim & Rezk, 1978
'Chedwan'	MR	MR				Ibrahim & Rezk, 1978
'Early American'		HR				Ibrahim & Rezk, 1978
'Giza 4'	MR	MR				Ibrahim & Rezk, 1978
'Giza 69'		MR				Ibrahim & Rezk, 1978
'Giza 102'	HR	HR				Ibrahim & Rezk, 1978
'Giza 213'		MR				Ibrahim & Rezk, 1978
'Giza 303'		MR				Ibrahim & Rezk, 1978
'Indian Chief'		MR		MR		Baldwin & Barker, 1970
'McNair 340'	MR	MR		MR		Baldwin & Barker, 1970
'McNair 440'	MR	MR		MR		Baldwin & Barker, 1970
'Pioneer 309B'				MR		Baldwin & Barker, 1970
Crabgrass *(Digitaria sanguinalis)*	HR	S	HR	HR		McGlohon et al., 1961
Dallisgrass *(Paspalum dialatatum)*	HR	HR	HR	HR		McGlohon et al., 1961
Giant Star Grass *(Cynodon nlemfuensis nlemfuensis)*						
'IB 8'	R	R		R		Adeniji & Chheda, 1971
Harding grass *(Phalaris tuberosa* var. *stenoptera)*	S	MR	HR	HR		McGlohon et al., 1961
Italian ryegrass *(Lolium multiflorum)*	MR	MR	HR	MR		McGlohon et al., 1961
Kentucky bluegrass *(Poa pratensis)*	MR	MR	HR	MR		McGlohon et al., 1961
Martius milo *(Sorghum vulgare)*	S	S	HR	HR		McGlohon et al., 1961
Oat *(Avena sativa)*						
'Wintok'					MN-HR	Taylor & Sasser, 1978
Orchardgrass *(Dactylis glomerata)*	S	S	HR	S		McGlohon et al., 1961
Pensacola bahiagrass *(Paspalum notatum)*	MR	MR	HR	MR		McGlohon et al., 1961
Rescuegrass *(Bromus catharticus)*	HR	HR	HR	HR		McGlohon et al., 1961

TABLE 2. (Continued)

Plant Family, Crop and Cultivar	*Meloidogyne* Species[1] and Resistance Rating[2]					References[3]
	MI	MJ	MH	MA	Other	
Rice *(Oryza sativa)*						
'Basant Bahar'					MG-T	Roy, 1973
'Dubaichenga'					MG-T	Roy, 1973
'Dumai'					MG-R	Roy, 1973
'Farma'					MG-R	Roy, 1973
'Garem'					MG-R	Roy, 1973
'Hamsa'					MG-R	Jena & S. Rao, 1977
'International'	HR	HR				Ibrahim et al., 1972
'IR - 20'					MG-T	Roy, 1973
'Tkm - 6'					MG-T	Roy, 1973
Smooth Bromegrass *(Bromus inermis)*	S	S	HR	S		McGlohon et al., 1961
Starr millet *(Pennisetum spicatum)*	HR	HR	HR	HR		McGlohon et al., 1961
Sudangrass *(Sorghum vulgare* var. *sudanense)*	MR	MR	HR	HR		McGlohon et al., 1961
Switchgrass *(Panicum virgatum)*	HR	HR	HR	HR		McGlohon et al., 1961
Tall fescue *(Festuca arundinacea)*	MR	HR	HR	MR		McGlohon et al., 1961
Tall oatgrass *(Arrhenatherum elatius)*	S	S	HR	S		McGlohon et al., 1961
Weeping lovegrass *(Eragrostis curvula)*	HR	HR	HR	HR		McGlohon et al., 1961
Wilmington bahiagrass *(Paspalum notatum)*	HR	HR	HR	HR		McGlohon et al., 1961
Zoysia grass *(Zoysia matrella)*	MR	MR	HR	MR		McGlohon et al., 1961

[1] MI=*M. incognita*; MJ=*M. javanica*; MH=*M. hapla*; MA=*M. arenaria*; MT=*M. thamesi*; ME=*M. exigua*; MG=*M. graminicola*; MN=*MN. naasi*; M=*Meloidogyne* sp.
[2] HR=highly resistant; MR=moderately resistant; R=resistant; T=tolerant; S=susceptible.
[3] References cited are to selected reports of resistance to cover different host parasite reactions recorded but not including multiple reports of the same rating for a cultivar-*Meloidogyne* species interaction.

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