



**DIVISION OF AGRICULTURE  
RESEARCH & EXTENSION**

*University of Arkansas System*

# ARKANSAS NEMATODE DIAGNOSTIC LABORATORY

2022 ANNUAL REPORT

## CONTACT

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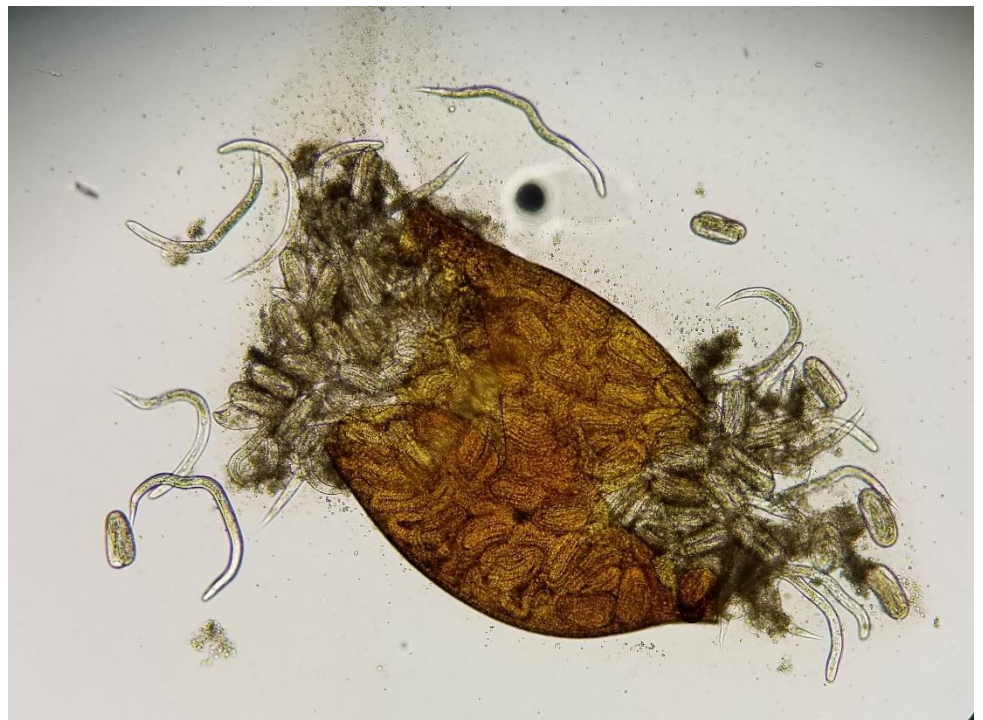
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The Arkansas Nematode Diagnostic Laboratory is located on the campus of the University of Arkansas System Southwest Research and Extension Center, Hope, AR. Plant-parasitic nematodes are an economically important pest that affects many row crops, horticultural crops, golf courses, and trees and shrubs in Arkansas. The Arkansas Nematode Diagnostic Laboratory offers bioassay and quantification services. The nematode assay samples are submitted from various sources, including county extension agents, agricultural consultants, commercial operations, research and extension faculty, industry representatives, and regulatory inspectors.

A total of 1,793 samples (3,358 vials) were processed in 2022 (Fig. 1). Soil samples were received from 10 states other than Arkansas, which highlights the national reputation of the lab (Fig. 2). Within Arkansas, samples were received from 43 of the 75 counties in the state (Fig. 3). The majority of the samples received were from agronomic crops. The largest percentage of samples processed were from soybean (44%), followed by corn (28%), and cotton (18%); horticultural crops, turf, and regulatory samples make up the remainder of the samples (10%) (Fig. 4). This year was atypical in that the most samples were received in the third quarter of the year rather than the fourth (Fig. 5). In fact, samples were fairly evenly distributed among quarters one, two, three, and four at 24%, 26%, 31%, and 19%, respectively. This could indicate the lab is moving toward a more consistent flow of samples year-round rather than receiving the main concentration in the third quarter. Samples were processed on 20 different host species or categories and 18 genera of nematode were detected (Table 1).

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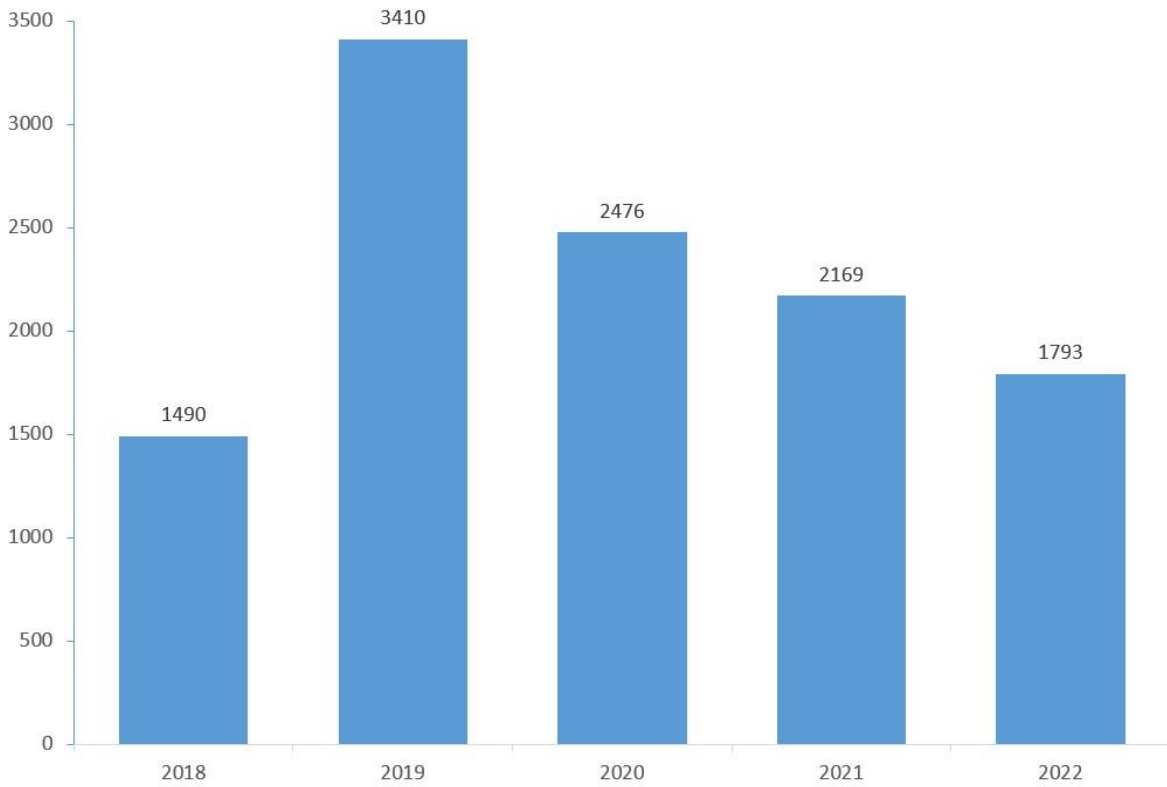
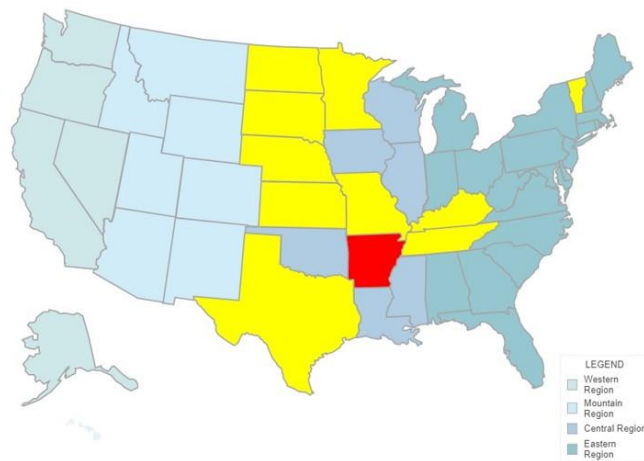


Figure 1. Nematode samples processed by Arkansas Nematode Diagnostic Laboratory, 2018-2022.

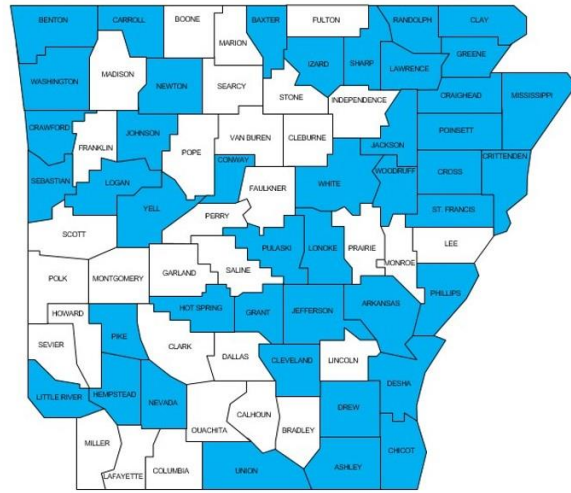
State	Samples Rcvd
Arkansas	1,524
Kansas	43
Kentucky	23
Minnesota	13
Missouri	8
Nebraska	1
North Dakota	1
South Dakota	19
Tennessee	155
Texas	4
Vermont	2
<b>TOTAL</b>	<b>1,793</b>



**From Arkansas: 85%**  
**From Other States: 15%**

Figure 2. Nematode samples processed by state, Arkansas Nematode Diagnostic Laboratory, 2022.

County	No.	County	No.	County	No.
Arkansas	13	Grant	8	Phillips	4
Ashley	10	Greene	6	Pike	4
Baxter	12	Hempstead	5	Poinsett	13
Benton	9	Hot Spring	1	Pulaski	2
Carroll	1	Izard	2	Randolph	17
Chicot	13	Jackson	103	Sebastian	3
Clay	5	Jefferson	3	Sharp	1
Cleveland	459	Johnson	35	St. Francis	5
Conway	5	Lawrence	2	Union	2
Craighead	30	Lonoke	561	Washington	18
Crawford	9	Little River	12	White	48
Crittenden	5	Logan	5	Woodruff	28
Cross	4	Mississippi	18	Yell	1
Desha	35	Nevada	1		
Drew	5	Newton	1		



Samples were submitted from 43 of 75 counties in 2022.

Figure 3. Nematode samples submitted by county, Arkansas Nematode Diagnostic Laboratory, 2022. (County only as designated by submitter or by submitter’s stated address. Not necessarily county of actual field.)

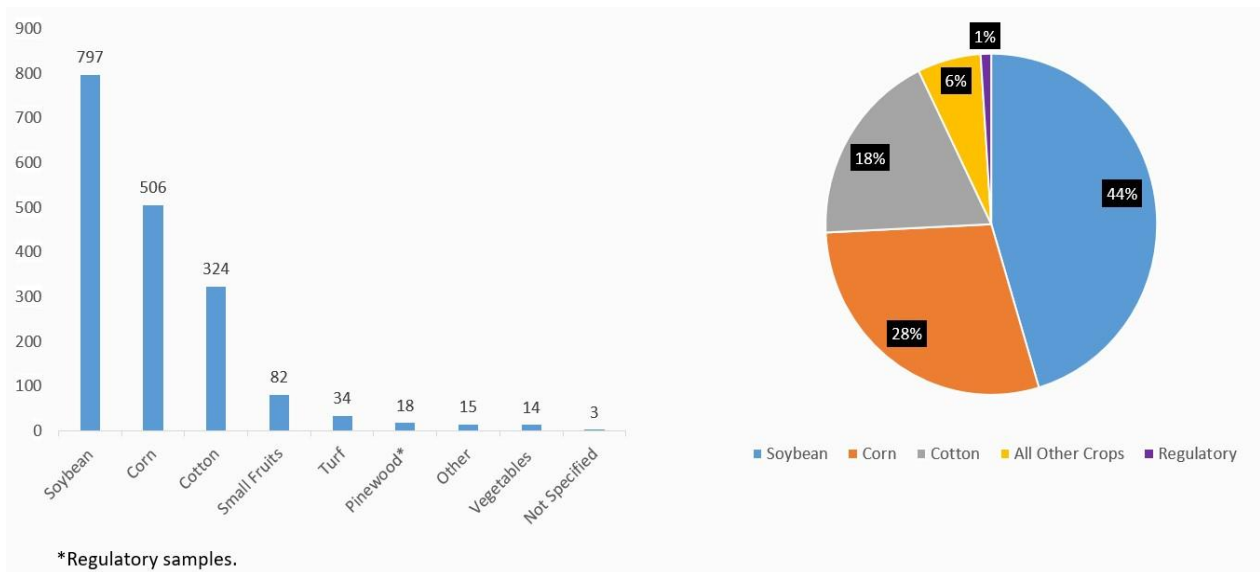


Figure 4. Number and percentage of nematode samples by crop, Arkansas Nematode Diagnostic Laboratory, 2022.

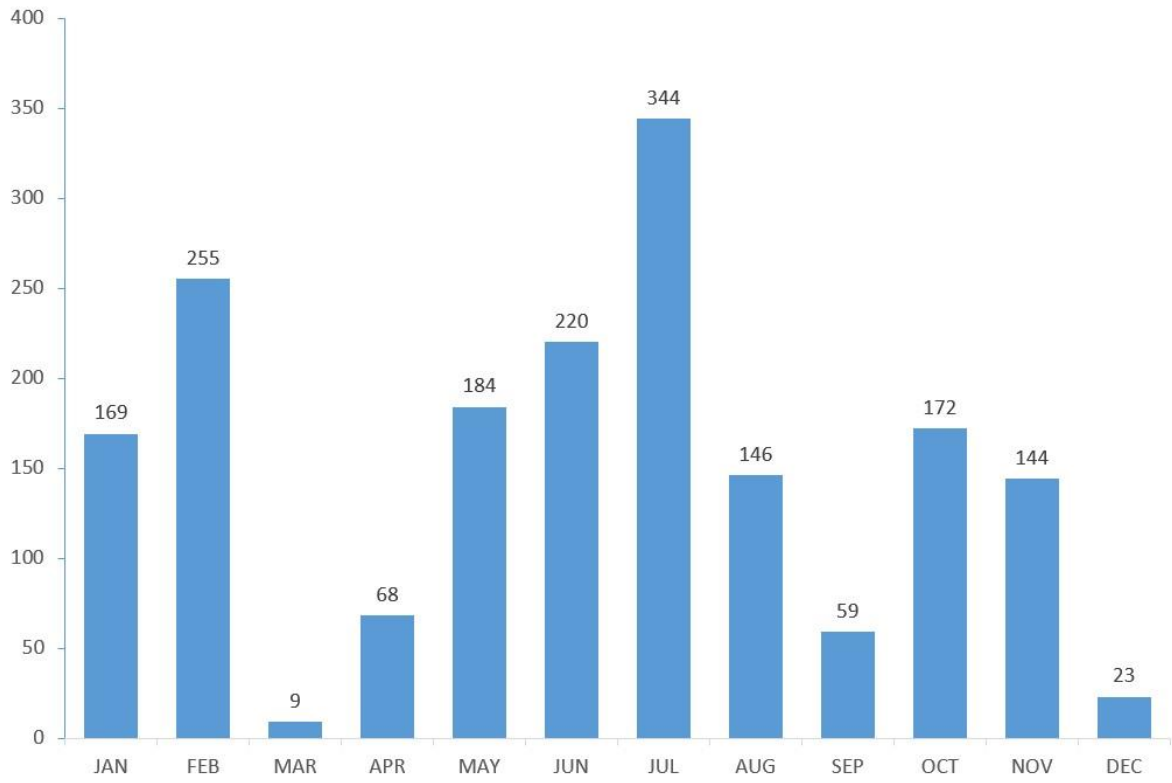


Figure 5. Nematode samples received by month, Arkansas Nematode Diagnostic Laboratory, 2022.

Table 1. Number of samples and diagnosis by host and type, Arkansas Nematode Diagnostic Laboratory, 2022.		
<b>Azalea (<i>Rhododendron</i> sp./spp.) – 1</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	1
<b>Blackberry (<i>Rubus</i> sp./spp.) – 51</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	35
	Free Living	51
	Lance ( <i>Hoplolaimus</i> sp./spp.)	2
	Lesion ( <i>Pratylenchus</i> sp./spp.)	35
	Ring ( <i>Mesocriconema</i> sp./spp.)	1
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	36
	Sting ( <i>Belonolaimus</i> sp./spp.)	1
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	9
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	6
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	5
<b>Corn (<i>Zea mays</i>) – 506</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	10
	Free Living	506
	Lance ( <i>Hoplolaimus</i> sp./spp.)	11
	Lesion ( <i>Pratylenchus</i> sp./spp.)	199
	Needle ( <i>Longidorus</i> sp./spp.)	1
	Pin ( <i>Paratylenchus</i> sp./spp.)	1
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	147
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	57
	Stem ( <i>Ditylenchus dipsaci</i> )	13
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	81
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	254
	Soybean Cyst ( <i>Heterodera glycines</i> )	125
<b>Cotton (<i>Gossypium hirsutum</i>) – 102</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	21
	Free Living	102
	Lance ( <i>Hoplolaimus</i> sp./spp.)	21
	Lesion ( <i>Pratylenchus</i> sp./spp.)	29
	No Nematode Found	2
	Ring ( <i>Mesocriconema</i> sp./spp.)	1
	Reniform ( <i>Rotylenchulus reniformis</i> )	257
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	34
	Sheath ( <i>Hemicycliophora</i> sp./spp.)	19
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	94
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	64
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	33
	Soybean Cyst ( <i>Heterodera glycines</i> )	2
<b>Cucurbits (<i>Cucurbitaceae</i> family) – 1</b>		
	Free Living	1

<b>Eastern Red Cedar (<i>Juniperus virginiana</i>) – 16</b>		
	No Nematode Found	16
<b>Fallow – 3</b>		
	Free Living	3
	Lesion ( <i>Pratylenchus</i> sp./spp.)	1
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	2
<b>Garlic (<i>Allium sativum</i>) – 2</b>		
	No Nematode Found	2
<b>Home Garden, mixed vegetables – 11</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	1
	Free Living	11
	Ring ( <i>Mesocriconema</i> sp./spp.)	1
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	2
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	1
<b>Monstera (<i>Monster</i> sp./spp.) – 1</b>		
	No nematode found	1
<b>Peach (<i>Prunus persica</i>) – 28</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	3
	Free Living	28
	Lance ( <i>Hoplolaimus</i> sp./spp.)	1
	Lesion ( <i>Pratylenchus</i> sp./spp.)	28
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	3
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	11
<b>Peanut (<i>Arachis hypogaea</i>) – 5</b>		
	Free Living	5
	Lance ( <i>Hoplolaimus</i> sp./spp.)	3
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	1
<b>Pine (<i>Pinus</i> sp./spp.) – 2</b>		
	Pinewood ( <i>Bursaphelenchus</i> sp./spp.)	1
	No nematode found	1
<b>Potato (<i>Solanum tuberosum</i>) – 2</b>		
	Free Living	2
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	1
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	2
<b>Soybean (<i>Heterodera glyclines</i>) – 797</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	24
	Free Living	797
	<i>Gracilacus</i> sp./spp.	1
	Lance ( <i>Hoplolaimus</i> sp./spp.)	51
	Lesion ( <i>Pratylenchus</i> sp./spp.)	354
	Needle ( <i>Longidorus</i> sp./spp.)	2
	Pin ( <i>Paratylenchus</i> sp./spp.)	4
	Ring ( <i>Mesocriconema</i> sp./spp.)	1
	Reniform ( <i>Rotylenchulus reniformis</i> )	184
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	276
	Sheath ( <i>Hemicycliophora</i> sp./spp.)	11
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	378

	Stem ( <i>Ditylenchus dipsaci</i> )	12
	Sting ( <i>Belonolaimus</i> sp./spp.)	3
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	220
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	289
	Soybean Cyst ( <i>Heterodera glycines</i> )	124
<b>Strawberry (<i>Fragaria</i> sp./spp.) – 3</b>		
	Free Living	3
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	2
<b>Tomato (<i>Solanum lycopersicum</i>) – 1</b>		
	Free Living	1
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	1
<b>Turfgrass, golf course (species not identified) – 34</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	1
	Free Living	34
	Lance ( <i>Hoplolaimus</i> sp./spp.)	10
	Lesion ( <i>Pratylenchus</i> sp./spp.)	2
	Ring ( <i>Mesocriconema</i> sp./spp.)	9
	Root-knot ( <i>Meloidogyne</i> sp./spp.)	7
	Sheath ( <i>Hemicycliophora</i> sp./spp.)	1
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	8
	Sting ( <i>Belonolaimus</i> sp./spp.)	6
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	2
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	1
<b>Wheat (<i>Triticum</i> sp./spp.) – 3</b>		
	Dagger ( <i>Xiphenema</i> sp./spp.)	1
	Free Living	1
	Stubby-root ( <i>Paratrichodorus</i> sp./spp.)	1
	Stunt ( <i>Tylenchorhynchus</i> sp./spp.)	1
<b>Crop Not Specified – 1</b>		
	Free Living	1
	Spiral ( <i>Helicotylenchus</i> sp./spp. and <i>Scutellonema</i> sp./spp.)	1