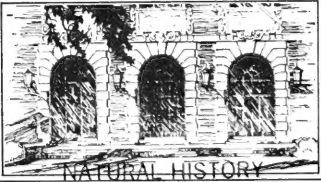




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## The Literature of Arthropods Associated with Alfalfa

### II. A BIBLIOGRAPHY OF THE SITONA SPECIES

(Coleoptera: Curculionidae)

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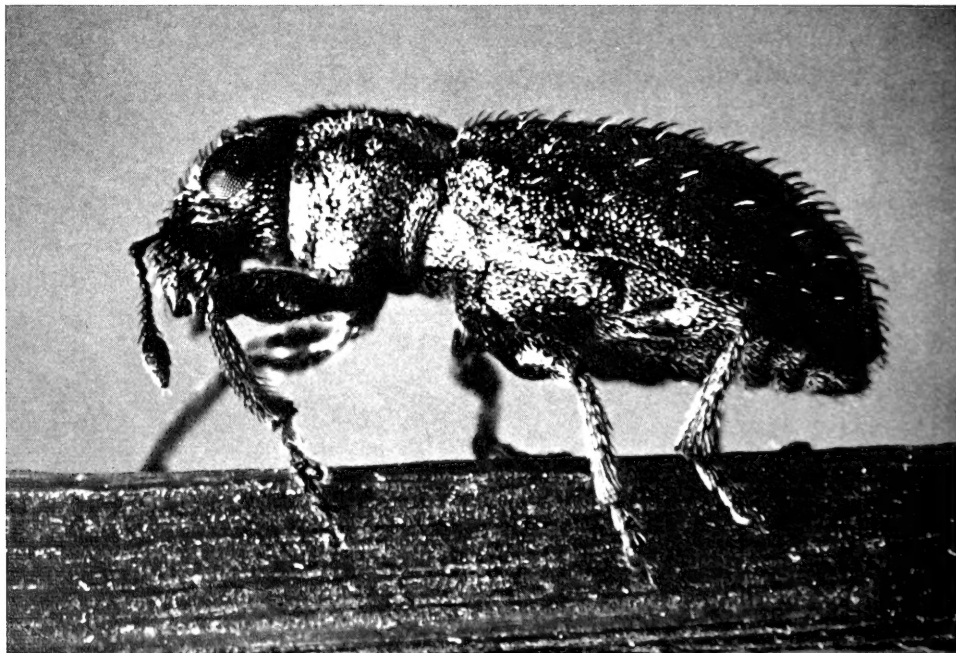
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Enlarged view of adult of *Sitona* species (Coleoptera: Curculionidae).



# The Literature of Arthropods Associated with Alfalfa

## II. A BIBLIOGRAPHY OF THE *SITONA* SPECIES (Coleoptera: Curculionidae)

W. P. Morrison, B. C. Pass,  
M. P. Nichols, and E. J. Armbrust

THE ALFALFA ECOSYSTEM is unique among field-crop systems in that it represents a relatively long-lasting, well-established perennial system that exists nationally over a variety of climatic, geographical, and edaphic conditions. Because of the many subsystems, the interactions with other specific agroecosystems or natural systems are equally as varied. Alfalfa supports a wide variety of insects. These include destructive insects, pollinating insects, species that inhabit the fields because of the lush habitat but have little effect on the crop, and many associated predators and parasites. Because of the perennial growth habits of alfalfa, many pest and beneficial insect species of other crops overwinter or build up in alfalfa before migrating to neighboring crops systems.

Considerable laboratory and field data dealing with chemical, biological, and cultural methods of control of alfalfa insects are available. These data need to be closely interpreted with respect to their implications for integrated control and then applied in integrated pest management programs in the field. The breadth and depth of research on alfalfa insect control and alfalfa production in general have been sufficiently productive to implement some programs now.

To facilitate use of existing literature in developing pest management systems, bibliographies of the key pest species on alfalfa are being prepared for use by researchers. This bibliography on *Sitona* species (Coleoptera: Curculionidae) is the second in a series concerning alfalfa insects of economic importance. This and subsequent bibliographies of arthropods associated with alfalfa are part of an information storage and retrieval system being compiled as one objective of the US/IBP project entitled "The Principles, Strategies, and Tactics of Pest Management Regulation and Control in the Alfalfa Ecosystem." This information system utilizes existing facilities and methodology employed by the University of Illinois Soybean Insect Research and Information Center. SIRIC has developed a set of computer programs for the IBM/360 at the University of Illinois which makes possible the retrieval of literature citations associated with a subject or combination of subjects. The bibliographies of the key alfalfa pests, starting with *Therioaphis maculata* have been stored on magnetic tape and are retrievable using the SIRIC system.

The genus *Sitona* includes a large number of species, many of which are known to be injurious to leguminous crops (Wildermuth 1910).<sup>1</sup> In general, the larvae are

root feeders, whereas adults attack the foliage. Arnett (1962)<sup>2</sup> reports 17 species of *Sitona* as occurring in the United States. Several species have been introduced into North America from Europe and are now pests on both continents. The crops most commonly attacked are clover, alfalfa, peas, beans, and vetch. The pest species include: *S. lineata* (pea leaf weevil), *S. cylindricollis* (sweetclover weevil), *S. hispidula* (clover root curculio), *S. scissifrons* (lesser alfalfa weevil), and *S. flavescens* (yellow clover curculio).

The clover root curculios eat small crescent-shaped notches on the edges of alfalfa and clover leaves. The larvae feed on the roots, pitting and scarring the surface. They may also burrow into the root, but they do not hollow out the center as the clover root borer does. If feeding is severe, the root may be almost girdled and the plant may die during warm, dry weather. The curculios feed primarily at night and are seldom found on the plants during the day.

Clover root curculios winter mainly as larvae, but a few may spend the winter as adults or eggs. Wintering larvae feed on the roots in early spring and emerge in the spring. The adults feed for a time in the late spring, become inactive during the summer, and feed again in the fall. They lay eggs throughout the fall, often as late as mid-November. Eggs laid late in the season overwinter, but those laid earlier hatch and the larvae overwinter. If all eggs are not deposited in the fall, the adult overwinters and completes egg-laying in the spring. The sweetclover weevil hibernates in ground debris in and around sweet clover fields. With the first warm weather, it begins to feed on the plants, notching the leaves noticeably. The females lay eggs in the spring. The young grub-like larvae feed in clover soils in late May, June, and July. They pupate in late June and July, emerging as adults in July and August. The adults feed moderately in the fall prior to winter hibernation.

The weevils feed on the larvae of sweet clover plants, retarding the spring growth of established stands. Only in rare instances are established stands killed, but weevils will often consume an entire new seeding or seriously

<sup>2</sup> See reference number 50 in the following bibliography.

This paper, in the Biological Notes series, is published with special project funds. Dr. W. P. Morrison is a Post Doctoral Fellow and Dr. B. C. Pass a Professor of Entomology at the University of Kentucky. M. P. Nichols is a Research Associate, International Programs and Studies, University of Illinois. Dr. E. J. Armbrust is an Associate Entomologist at the Illinois Natural History Survey and Associate Professor of Agricultural Entomology, Illinois Agricultural Experiment Station.

<sup>1</sup> See reference number 570 in the following bibliography.

reduce the stand. The damage is most noticeable in thin stands, but may also occur in heavy stands.

The following reference sources were used to compile the bibliography: *Review of Applied Entomology, Biological Abstracts, USDA Bibliography of Agriculture, Agricultural Index*, and footnotes and literature cited in the references themselves. The bibliography includes all references occurring in these sources and is as complete as possible. There has been no screening of references and therefore, considering the European origin of most pest species, the bibliography includes numerous European publications.

All articles which were in the University of Kentucky and University of Illinois libraries were read and indexed from the publications themselves. Articles which were not available in the libraries or on inter-library loan were indexed from the published abstract or title. These articles which have not been seen are designated by the

symbol #. The references are listed alphabetically by author(s) and numbered consecutively. A subject grid table containing the reference numbers appears following the numbered references. References are arranged according to subject and period of publication. The table is intended as a quick subject index to the references in the bibliography. More in-depth indexing was done for the SIRIC system.

Abbreviations and complete titles of the sources which appear in the bibliographic entries are presented in a listing at the end of the paper. References to most reports in the *USDA Cooperative Economic Insect Report, USDA Insect Pest Survey Bulletin*, and *Canadian Insect Pest Review* have not been included.

Mr. Ray Kotek worked in the organization of the files and provided general technical assistance, and O. F. Glissendorf edited the manuscript. Their collaboration is gratefully acknowledged.

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- #581. YAROSLAVTSEV, G. M. 1928. Insect pests in 1927. (In Russian) Zapadn. Obl. S.-Kh. Op. Stantz. 29. 31 p. refs.
- #582. ———. 1930. Einfluss des Kleeschlages in der Fruchtfolge auf die Schädligungsvermehrung. [The influence of fields of clover sown among other crops in the course of crop rotation on the abundance of pests.] (In Russian) Rep. Appl. Entomol. (Leningrad) 4(2):319-331. refs.
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- #584. ZACHER, F. 1919. Untersuchungen über Schädligungsbekämpfung mit Blausäure. [Investigations on combating insect pests with hydrocyanic acid gas.] Mitt. Biol. Reichsanst. Land-Forstwirt. 17:31-37.
585. ———. 1921. Tierische Schädlinge an Heil- und Giftpflanzen und ihre Bedeutung für den Arzneipflanzenbau. [Animal pests of curative and poisonous plants and their importance in the cultivation of medicinal plants.] Ber. Deut. Pharm. Ges. 31(2):53-65. illus.
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de vroege akkerthrips bij erwten (serie 204) en van de erwtenknopmide (serie 205). [Report of tests on the profitability of control of the pea weevil and the early field thrips on peas (series 204) and of the pea midge (series 205).] Wageningen Proefsta. Akker-Weideb. Gestencilde Versl. Interprov. Proeven 91. 9 p.

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- #588. ZLATANOV, S. 1966. The bioecological factors governing the numerical distribution of some insect pests under the influence of shelter belts. (In Bulgarian — English summary) Rastenievod. Nauki 3(2):91-100. illus. refs.
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schutz. [Report of the Federal Agricultural Experiment Station Zurich-Oerlikon for 1946-47. 8. Plant protection.] Landwirt. Jahrb. Schweiz 62(5):460-470. illus. refs.

- #590. ZOLK, K. 1932. Einiges über die Tätigkeit der Versuchstation für angew. Entomologie d. Universität Tartu 1921-1932. [A few notes on the activities of the Experiment Station for Applied Entomology of the Tartu (Dorpat) University in the years 1921-1932.] (In Estonian) Mitt. Versuchssta. Angew. Entomol. Univ. Tartu 21. 10 p. maps.
- #591. ZOLOTAREVSKY, B. N. 1915. Preliminary report on the work on entomology in 1914. (In Russian) Stavropol-Caucasian Agr. Exp. Sta. Stavropol Munic. Auth. 12 p.

#### ADDENDUM

592. BELAND, G. L., F. A. HASKINS, G. R. MANGLITZ, and H. J. GORZ. 1973. Sweetclover weevil: Adenosine as a feeding stimulant. J. Econ. Entomol. 66(5):1037-1039. illus. refs.

#### PERIODICAL ABBREVIATIONS

Acta Zool. Cracov. — Acta Zoologica Cracoviensia.  
Agr. Chem. — Agricultural Chemicals.  
Agr. Gaz. N. S. W. — Agricultural Gazette of New South Wales.  
Agr. Impr. Meas. Zemstvo Govt. Ufa — Agricultural Improvement Measures of the Zemstvo of the Government of Ufa.  
Agr. Sarda — (Exact source unknown).  
Agron. Dep. Zemstvo Govt. Ufa — Agronomical Department of the Zemstvo of the Government of Ufa.  
Agron. Lusitana — Agronomia Lusitana.  
Amer. Bee J. — American Bee Journal.  
Ann. Appl. Biol. — Annals of Applied Biology.  
Ann. Entomol. Fenn. — Annales Entomologici Fennici.  
Ann. Entomol. Soc. Amer. — Annals of the Entomological Society of America.  
Ann. Inst. Phytopathol. Benaki — Annales de l'Institut Phytopathologique Benaki.  
Ann. Soc. Entomol. Fr. — Annales de la Société Entomologique de France.  
Ann. Univ. Mariae Curie-Sklodowska Sect. C Biol. — Annales Universitatis. Mariae Curie-Sklodowska Sectio C Biologia.  
Ann. Serv. Épiphyt. — Annales du Service des Épiphyties.  
Annu. Rev. Entomol. — Annual Review of Entomology.  
Anz. Schädlingk. — Anzeiger für Schädlingkunde.  
Aquila — Aquila A Madártani Intézet Évkönyve.  
Aust. J. Sci. — Australian Journal of Science.  
Beitr. Entomol. — Beiträge zur Entomologie.  
Ber. Deut. Pharm. Ges. — Berichte der Deutschen Pharmazeutischen Gesellschaft.  
Beretn. Statens Forsoksvirk. PIKult. — Beretning fra Statens Forsoksvirkomhed i Plantekultur.  
Biol. Zentralbl. — Biologisches Zentralblatt.  
Bitki Koruma Bül. — Bitki Koruma Bülteni.  
Boll. Ist. Entomol. Univ. Studi Bologna — Bollettino dell'Istituto di Entomologia della Università degli Studi di Bologna.  
Boll. Lab. Entomol. Agr. 'Filippo Silvestri' — Bollettino del Laboratorio di Entomologia Agraria 'Filippo Silvestri'.  
Boll. Lab. Zool. Gen. Agr. R. Scuola Super. Agr. Portici — Bollettino del Laboratorio di Zoologia Generale e Agraria della R. Scuola Superiore d'Agricoltura, Portici.  
Boll. Soc. Entomol. Ital. — Bollettino della Società Entomologica Italiana.  
Brit. Columbia Dep. Agr. Publ. — British Columbia Department of Agriculture Publication.  
Brit. Grassl. Soc. J. — British Grasslands Society Journal.  
Bull. Ecol. Super. Agr. Tunis — Bulletin École Supérieure d'Agriculture Tunis.  
Bull. Entomol. Dep. Nikolaevsk Exp. Sta. — Bulletin of the Entomology Department of Nikolaevsk Experiment Station.

Bull. Entomol. Res. — Bulletin of Entomological Research.  
Bull. Hort. (Liège) — Bulletin Horticole (Liège).  
Bull. Inst. Rech. Biol. Sta. Biol. Univ. Perm. — Bulletin de l'Institut de Recherches Biologiques et de la Station Biologique à l'Université de Permiskom.  
Bull. Moscow Entomol. Soc. (Soc. Entomol. Mosquensis) — Bulletin of the Moscow Entomological Society (Societa Entomologica Mosquensis).  
Bull. Moskovsk. S-Kh. Obl. Op. Stantz. Polevod. — (Exact source unknown).  
Bull. Pests Agr. Meth. Control. — Bulletins on Pests of Agriculture and Methods of Controlling Them (Charkov).  
Bull. Plant Prot. (Leningrad) — Bulletin of Plant Protection (Leningrad).  
Bull. Soc. Entomol. Fr. — Bulletin de la Société Entomologique de France.  
Bull. Soc. Ouralienne Amis Sci. Natur. — Bulletin de la Société Ouralienne d'Amis des Sciences Naturelles.  
Bull. Soc. Pathol. Veg. Fr. — Bulletin de la Société de Pathologie Végétale de France.  
Bull. Soc. Sci. Natur. Phys. Maroc — Bulletin de la Société des Sciences Naturelles et Physiques du Maroc.  
Bull. Soc. Sci. Natur. Tunisie — Bulletin de la Société des Sciences Naturelles du Tunisie.  
Bull. Tiflis-Eriyan-Kars Bur. Control Pests Agr. — Bulletins of the Tiflis-Eriyan-Kars Bureau for the Control of Pests of Agriculture (Tiflis).  
Bull. Univ. Tehran Agr. Coll. — Bulletin, University of Tehran Agricultural College.  
Calif. Dep. Agr. Bull. — California Department of Agriculture Bulletin.  
Calif. Dep. Agr. Spec. Publ. — California Department of Agriculture Special Publication.  
Calif. State Comm. Hort. Mon. Bull. — California State Commission of Horticulture Monthly Bulletin.  
Can. Dep. Agr. Div. Entomol. Processed Publ. — Canada Department of Agriculture, Division of Entomology Processed Publication.  
Can. Dep. Agr. Publ. — Canada Department of Agriculture Publication.  
Can. Entomol. — Canadian Entomologist.  
Can. Exp. Farms Serv. West. Forage Crops Comm. Rep. — Canadian Experimental Farms Service, Western Forage Crops Committee Report.  
Can. Field Natur. — Canadian Field Naturalist.  
Can. Insect Pest Rev. — Canadian Insect Pest Review.  
Can. J. Agr. Sci. — Canadian Journal of Agricultural Science.  
Can. J. Bot. — Canadian Journal of Botany.  
Can. J. Plant Sci. — Canadian Journal of Plant Science.



TABLE OF REFERENCES BY SUBJECT AND PERIOD OF PUBLICATION

YEAR SUBJECT	Prior to 1900	1900- 1909	1910's	1920's	1930's	1940's	1950's	1960's	1970's
TAXONOMY	27,454		74,121,570	177,212,234	38,46,73,292	276,389,390	213,215,216,217, 248,293,308,448, 418,481,536	28,50,94,149,249, 250,251,356,398, 418,482,523	151,192
BEHAVIOR			566	529	39,43,45,435	135	98,317,515,516, 528	15,90,91,92,104, 187,188,311,320, 335,419,491,517	22,106,130, 513
LIFE HISTORY & BIOLOGY		142	78,121,171,296, 353,404,560,570	4,219,223,225, 229,230,239,266, 267,305,530,561, 581	37,38,39,40,43, 45,46,47,58,63, 83,112,160,282, 321,339,394,411, 443,456,522,527, 580,582	25,66,67,68,84, 85,135,303,369, 378,380,412,479, 576	69,70,132,145,175, 185,186,193,196, 200,202,203,317, 323,324,341,356, 384,441,462,463, 474,528,553,587	90,92,103,105,119, 174,179,252,258, 322,330,343,344, 345,346,360,361, 362,401,402,415, 420,432,490,491, 509,512,588	106,153,347, 365,403,460
ECOLOGY				223,336,529	37,45,278,394, 411,435,456,522		462,463,553,587	105,188,258,281, 315,318,401,402, 413,414,419,420, 490,491,563	130,365
DISTRIBUTION	472		54,72,100,138, 139,164,165,245, 260,264,270,316, 350,352	76,77,97,110, 140,141,150,169, 170,209,224,225, 236,243,305	73,82,89,112, 125,221,235,268, 274,278,283,292, 294,354,363,395, 434	66,87,88,115, 136,148,152,158, 220,325,333,349, 367,379	69,124,128,154, 155,163,178,194, 204,256,306	14,28,29,30,50,94, 119,120,127,137, 143,174,184,238, 330,357,359,386, 388,510,546	151
PHYSIOLOGY & MORPHOLOGY			171,566,570	225,228,229	39,41,42,43, 44,46,47,231, 233,367		108,215,216,462, 553	16,17,19,20,21,23, 26,91,187,188,319, 320,361,418,523	18,22,106, 151,153,162, 592
TRAPPING & SAMPLING					75				
ECONOMIC ROLE & DAMAGE	565	142	1,72,111,164, 264,269,289,290, 291,304,351,399, 400,404,405,416, 436,437,439,451, 452,461,465,466, 480,485,520,521, 534,535,540,541, 544,555,557,558, 567,583,591	2,3,5,76,99,209, 210,223,225,226, 236,239,243,255, 263,266,267,305, 327,348,381,431, 440,455,467,537, 545,554,559,560, 571,572,579,585	38,39,46,58,82, 89,96,112,211, 221,237,261,272, 273,274,282,283, 294,321,332,354, 383,394,410,443, 469,488,489,492, 493,506,333,538, 539,569,580	13,25,53,66,67, 87,148,242,277, 285,303,325,333, 337,338,355,364, 369,370,379,396, 409,412,449,459, 478,486,501,525, 568,589	31,32,33,48,59,64, 107,109,124,132, 134,167,175,193, 206,214,244,247, 254,256,262,279, 287,288,323,328, 341,374,391,421, 438,474,477,487, 499,502,510,514, 543,548,549,551, 552	49,51,80,102,104, 118,120,151,157, 168,174,179,208, 222,229,265,311, 330,331,343,344, 345,346,357,385, 386,401,402,413, 414,415,420,423, 424,427,429,432, 453,496,497,511, 512,547,562,586	129,207,347, 433
PARASITES, PREDATORS, & DISEASE			240,271,566,570	225,227,241	40,232,334,527	35,36,66,371, 372,375,376,377, 500,504	61,65,69,131,373, 393,403	14,102,253,295, 296,297,298,299, 300,301,302,362, 426	
NON- INSECTICIDAL CONTROL METHODS			62,246,289,353, 566,570	6,101,430	272,339,411,435, 527,560,582	66,68,71,84,158, 309,340,368,369, 375,377,378,380, 397,409,412,503	31,32,69,70,132, 358,382,442,575	16,17,19,23,26, 180,257,258,312, 313,415,490,491, 550,588	18,20,21,22
INSECTICIDAL CONTROL METHODS			123,444,445,447, 464,542,584	366	40,58,112,122, 160,272,282,284, 410,527,580,590	68,84,93,95,113, 135,190,191,303, 309,340,372,390, 417,450,468,475, 495,505,507,508, 576	7,8,9,10,11,31,32, 33,34,60,70,79,116, 117,132,143,146, 147,172,175,181, 182,183,189,194, 195,196,201,203, 247,275,286,287, 288,307,324,326, 341,342,446,470, 471,474,498,524, 528,556,564,573, 574,575,578	12,24,114,126,133, 144,161,173,174, 179,205,252,265, 280,301,323,329, 343,344,345,346, 392,406,407,408, 415,457,458,473, 483,484,490,491, 494,526,531,532, 563	129,347,460
PLANT RESISTANCE						86,159,380,503	64,98,200,218,518, 577	15,166,176,197, 198,199,310,314, 422,423,424,425	57,519,592
HOST PLANTS			52,81,139,165, 291,570	55,97,99,101, 110,141,169,225, 266,336,428,561	38,46,58,89,112, 125,160,506,527, 569	66,152,325,337, 478	132,317,441,515, 516	49,51,80,104,137, 184,314,331,358, 360,432	403,513
DISEASE TRANSMISSION							56,107		

- Can. J. Zool. — Canadian Journal of Zoology.
- Cas. Česk. Společnosti Entomol. — Casopis Československé Společnosti Entomologické.
- Cent. Agr. Soc. Riga (Wenden) — Central Agricultural Society of Riga (Wenden).
- Centralanst. Jorkbruksf. — Centralanstalten för Jordbruksförsök.
- Chem. Trade J. — Chemical Trade Journal.
- Chor. Szkodn. Rośl. — Choroby i Szkodniki Roślin.
- Coleopt. Bull. — Coleopterists' Bulletin.
- Columbia Port Dig. — Columbia Port Digest.
- Crop Sci. — Crop Science.
- Crops Soils Mag. — Crops and Soils Magazine.
- Cyprus Agr. J. — Cyprus Agricultural Journal.
- Dairy Top. — Dairy Topics.
- Déf. Plantes — Défense des Plantes.
- Dep. Agr. Cent. Bd. Land Admin. Agr. (Petrograd) — Department of Agriculture of the Central Board of Land Administration and Agriculture (Petrograd).
- Deut. Entomol. Z. (n.s.) — Deutsche Entomologische Zeitschrift (New series).
- Diss. Giessen — Dissertation Giessen.
- Diss. Göttinger — Dissertation Göttinger.
- Diss. Math.-Nat. Fakult. Leipzig — (Exact source unknown).
- Dokl. Akad. Nauk SSSR — Doklady Akademii Nauk SSSR.
- Dokl. Akad. Nauk Uz. SSR — Doklady Akademii Nauk Uzbekskoi SSR.
- Dokl. Mosk. Sel'sko-khoz. Akad. Imeni K. A. Timiryazeva — Doklady Moskovskoi Sel'sko-khozyaistvennoi Akademii Imeni K. A. Timiryazeva.
- Dokl. Vses. Akad. Sel'sko-khoz. Nauk Imeni V. I. Lenina — Doklady Vsesoyuznoi Akademii Sel'sko-khozyaistvennykh Nauk Imeni V. I. Lenina.
- East Malling Res. Sta. Annu. Rep. — East Malling Research Station Annual Report.
- Empire J. Exp. Agr. — Empire Journal of Experimental Agriculture.
- Entomol. Avd. — Entomologiska Avdelningen (Stockholm).
- Entomol. Blätter — Entomologishe Blätter.
- Entomol. Bur. Govt. Zemstvo Poltava — Entomological Bureau of the Government of the Zemstvo of Poltava.
- Entomol. Exp. Appl. — Entomologia Experimentalis et Applicata.
- Entomol. Mon. Mag. — Entomologist's Monthly Magazine.
- Entomol. Nachr. — Entomologische Nachrichten.
- Entomol. Obozrenie — Entomologicheskoe Obozrenie (Revue d'Entomologie de l'URSS).
- Entomol. Soc. Ont. Annu. Rep. — Entomological Society of Ontario Annual Report.
- Entomol. Tidskr. — Entomologisk Tidskrift.
- FAO Plant Prot. Bull. — FAO (Food and Agriculture Organization of the United Nations) Plant Protection Bulletin.
- FCI Mimeo. — (Exact source unknown).
- Farm Home Sci. — Farm and Home Science (Utah).
- Farmer Stock-Breed. — The Farmer and Stock-Breeder.
- Faune Fr. — Faune de France.
- Festschr. Appel — Festschrift Appel.
- Flugbl. Abt. Pflanzenkr. K. Wilhelm-Inst. Landwirt. Bromberg — Flugblatt Abteilung für Pflanzenkrankheiten d. Kaiser Wilhelm-Instituts für Landwirtschaft in Bromberg.
- Gard. Chron. (Ser. 3) — Gardeners' Chronicle (Series 3).
- Gesunde Pflanz. — Gesunde Pflanzen.
- Gleanings Bee Cult. — Gleanings in Bee Culture.
- Grain Prod. J. — Grain Production Journal.
- Gt. Brit. Min. Agr. Fish. Adv. Leaff. — Great Britain Ministry of Agriculture and Fisheries Advisory Leaflet.
- Gt. Brit. Min. Agr. Fish. Food Adv. Leaff. — Great Britain Ministry of Agriculture, Fisheries, and Food Advisory Leaflet.
- Höfchen-Br. Bayer Pflanzenschutz-Nachr. — Höfchen-Briefe, Bayer Pflanzenschutz-Nachrichten.
- Hort. Market-Gard. — Horticulture and the Market-Gardener.
- Ill. Agr. Coll. Ext. (Processed) — Illinois Agricultural College Extension (Processed).
- Ill. Agr. Exp. Sta. Bull. — Illinois Agricultural Experiment Station Bulletin.
- Ill. State Beekeeper. Assoc. Annu. Rep. — Illinois State Beekeepers' Association Annual Report.
- Inaug.-Diss. Bonn Würzburg — Inaugural-Dissertation, Bonn, Würzburg.
- Ind. Saccar. Ital. — Industria Saccharifera Italiana.
- Indiana Agr. Exp. Sta. Circ. — Indiana Agricultural Experiment Station Circular.
- Insect Pest Surv. Bull. — Insect Pest Survey Bulletin (USDA).
- Inst. Agron. "Dr. Petru Groza" Cluj Lucr. Stiint. Ser. Agr. — Institutul Agronomic "Dr. Petru Groza," Cluj, Lucrari Stiintifice, Seria Agricultura.
- Iowa Farm Sci. — Iowa Farm Science.
- Irrig. Farmer — Irrigation Farmer.
- Israel J. Entomol. — Israel Journal of Entomology.
- Izdat. Bülgar. Akad. Nauk. for Inst. Zashch. Rast. Kostinbrod. (Sofia) — (Exact source unknown).
- Izdat. FAN Uzbek SSR for Srednez. Inst. Zashch. Rast. (Tashkent) — (Exact source unknown).
- Izv. S'b. Kraev. Stantz. Zashch. Rast. — Izvestiya Sibirskogo Kraevoi Stantzii Zashchity Rastenii (Tomsk).
- Izv. Uz. Fil. Akad. Nauk SSSR — Izvestiya Uzbekistanskogo Filiala, Akademiya Nauk SSSR.
- J. Agr. S. Aust. — Journal of Agriculture, South Australia.
- J. Anim. Ecol. — Journal of Animal Ecology.
- J. Econ. Entomol. — Journal of Economic Entomology.
- J. Minn. Acad. Sci. — Journal of the Minnesota Academy of Science.
- J. Roy. Agr. Soc. Eng. — Journal of the Royal Agricultural Society of England.
- J. Soc. Brit. Entomol. — Journal of the Society for British Entomology.
- J. Southeast. Agr. Coll. Wye — Journal of the South-Eastern Agricultural College, Wye, Kent.
- Kans. Agr. Exp. Sta. Dir. Rep. — Kansas Agricultural Experiment Station Director's Report.
- Kans. State Agr. Coll. Ext. Bull. — Kansas State Agricultural College Extension Bulletin.
- Kans. State Bd. Agr. Bien. Rep. — Kansas State Board of Agriculture Biennial Report.
- Karteikurzber. Landwirt. — Karteikurzberichte für die Landwirtschaft.
- Kertész. Szölessz. Föisk. Évk. — Kertészeti és Szölesszeti Főiskola Évkönyve.
- Kii'v'ska Kraiova S.-G. Dosl. Statz., Vidd. Entomol. [Kiev Reg. Agr. Exp. Sta., Dep. Entomol.] — (Exact source unknown).
- Kisér. Kozl. — Kísérletügyi Közlemények (Budapest).
- Kolkhoz. Proizvod. — Kolkhoznoe Proizvodstvo.
- Ky. Agr. Exp. Sta. Circ. — Kentucky Agricultural Experiment Station Circular.
- Landbvoorlichtingsdienst. Landbvoorlichting. — (Exact source unknown).
- Landesb. Sachsen-Anhalt Wbl. — Landesbauernschaft Sachsen-Anhalt Wochenblatt.
- Landwirt. Jahrb. — Landwirtschaftliches Jahrbuch.
- Landwirt. Jahrb. Schweiz — Landwirtschaftliches Jahrbuch der Schweiz.
- Landwirt. Wschr. Halle — Landwirtschaftliche Wochenschrift Halle.
- Latvian Cent. Agr. Soc. — Latvian Central Agricultural Society.
- Lauksaimn. Mēnešrak. [J. Agr.] — Lauksaimniecības Mēnešraksts [Journal of Agriculture].
- Lenin Acad. Agr. Sci. Leningrad — Lenin Academy of Agricultural Science, Leningrad.
- Liet. TSR Mokslu Akad. Darb. Ser. C — Lietuvos TSR Mokslu Akademijos Darbai Serija C.
- Lucr. Stiint. Inst. Agron. 'N. Balcescu' Bucuresti Ser. A — Lucrari Stiintifice ale Institutului Agronomic 'N. Balcescu' Bucuresti Seria A.
- Magy. Mezogazdasag. — Magyar Mezogazdasag.
- Manitoba Agron. Annu. Conf. — Manitoba Agronomy Annual Conference.

- Manitoba Co-op. — (Exact source unknown).
- Md. Agr. Exp. Sta. Bull. — Maryland Agricultural Experiment Station Bulletin.
- Md. State Hort. Soc. Annu. Rep. — Maryland State Horticultural Society Annual Report.
- Medd. Centralanst. Jorsbruksf. — Meddelande fran Centralanstalt for Jorsbruksforsk.
- Meded. Landbouwhoogesch. Wageningen — Mededeelingen van de Landbouwhoogeschool te Wageningen.
- Meded. Proefsta. Akker- Weidch. — Mededeelingen Proefstation voor de Akker- en Weidebouw Wageningen.
- Meded. Rijks Hoogere Land- tuin- Boschbouwsch. — Mededeelingen van de Rijks Hoogere Land-, Tuin- en Boschbouwschool.
- Mem. Bur. Entomol. Sci. Comm. Min. Agr. (Petrograd) — Memoirs of the Bureau of Entomology of the Scientific Committee of the Ministry of Agriculture (Petrograd).
- Mem. Inst. Nat. Polonais Econ. Rur. Pulawy — Memoires de l'Institut National Polonais d'Economie Rurale à Pulawy.
- Mich. Agr. Exp. Sta. Quart. Bull. — Michigan Agricultural Experiment Station Quarterly Bulletin.
- Mich. Agr. Exp. Sta. Tech. Bull. — Michigan Agricultural Experiment Station Technical Bulletin.
- Mich. State Bd. Agr. Annu. Rep. — Michigan State Board of Agriculture Annual Report.
- Minn. Agr. Exp. Sta. Tech. Bull. — Minnesota Agricultural Experiment Station Technical Bulletin.
- Minn. Agr. Ext. Serv. Ext. Fold. — Minnesota Agricultural Extension Service Extension Folder.
- Minn. Farm Home Sci. — Minnesota Farm and Home Science.
- Minn. Sci. — Minnesota Science.
- Misc. Publ. Bd. Agr. Fish. Intell. Dep. Plant Dis. Br. London — Miscellaneous Publications, Board of Agriculture and Fisheries, Intelligence Department, Plant Disease Branch, London.
- Misc. Publ. Bd. Agr. Fish. London — Miscellaneous Publications, Board of Agriculture and Fisheries, London.
- Misc. Publ. Min. Agr. Fish. London — Miscellaneous Publications, Ministry of Agriculture and Fisheries, London.
- Misc. Zool. — Miscelánea Zoológica.
- Mitt. Biol. Reichsanst. Land- Forstwirt. — Mitteilungen der Biologischen Reichsanstalt für Land- und Forstwirtschaft.
- Mitt. Landwirt.-Bakter. Pflanzenschutzsta. Vienna — Mitteilungen Landwirtschaftlich-Bakteriologisch und Pflanzenschutzstation Vienna.
- Mitt. Schweiz. Landwirt. — Mitteilungen für die Schweizerische Landwirtschaft.
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- Monogr. Pflanzenschutz — Monographien zum Pflanzenschutz.
- Mont. Agr. Exp. Sta. Bull. — Montana Agricultural Experiment Station Bulletin.
- N. Dak. Agr. Exp. Sta. Bi-Mon. Bull. — North Dakota Agricultural Experiment Station Bi-Monthly Bulletin.
- N. Dak. Outdoors — North Dakota Outdoors.
- N. & S. Dak. Hort. — North and South Dakota Horticulture.
- Nachr. Schädlingsbekämpf. — Nachrichten über Schädlingsbekämpfung.
- Nachrichttbl. Deut. Pflanzenschutzdienst — Nachrichtenblatt für den Deutschen Pflanzenschutzdienst.
- Natur Volk — Natur und Volk.
- Nebr. Agr. Exp. Sta. Ext. Circ. — Nebraska Agricultural Experiment Station Extension Circular.
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- Nebr. Exp. Sta. Quart. — Nebraska Experiment Station Quarterly.
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- Ohio Biol. Surv. Bull. — Ohio Biological Survey Bulletin.
- Ohio J. Sci. — Ohio Journal of Science.
- Oreg. Agr. Exp. Sta. Bull. — Oregon Agricultural Experiment Station Bulletin.
- Pan-Pac. Entomol. — Pan-Pacific Entomologist.
- Petrograd Kitchen Gard. — Petrograd Kitchen Gardening.
- Plant Dis. Rep. — Plant Disease Reporter.
- Plant Pathol. — Plant Pathology.
- Plant Prot. (Belgrade) (Zašt. Bilja) — Plant Protection (Belgrade) (Zaštita Bilja).
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- Proc. Entomol. Soc. Wash. — Proceedings of the Entomological Society of Washington.
- Proc. Forage Insect Res. Conf. — Proceedings of the Forage Insect Research Conference.
- Proc. 12th Int. Congr. Entomol. (London) — Proceedings of the 12th International Congress of Entomology, London.
- Proc. Lenin Acad. Agr. Sci. USSR — Proceedings of the Lenin Academy of Agricultural Sciences of the U.S.S.R.
- Proc. N. Cent. Br. Amer. Assoc. Econ. Entomol. — Proceedings of the North Central Branch of the American Association of Economic Entomologists.
- Proc. N. Cent. Br. Entomol. Soc. Amer. — Proceedings of the North Central Branch of the Entomological Society of America.
- Proc. N. Dak. Acad. Sci. — Proceedings of the North Dakota Academy of Science.
- Proc. Oreg. Seed Growers Leag. — Proceedings of the Oregon Seed Growers League.
- Proc. Poltava Agr. Exp. Sta. — Proceedings of the Poltava Agricultural Experiment Station.
- Proc. Zool. Soc. London — Proceedings of the Zoological Society of London.
- Publ. Eur. Mediterr. Plant Prot. Org. Ser. A — Publications, European and Mediterranean Plant Protection Organization Series A.
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 Rostl. Výroba — Rostlinna Výroba.  
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 S. Beekeep. — Southern Beekeeper.  
 Sci. Agr. — Scientific Agriculture.  
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 Seale-Hayne Agr. Coll. Pamph. — Seale-Hayne Agricultural College Pamphlet.  
 Sel. Khoz. Uzb. — Sel'skoe Khozyaistvo Uzbekistana.  
 Seminar Rep. Univ. Wis. — Seminar Report, University of Wisconsin.  
 Soc. Sci. Fenn. Commentat. Biol. — Societas Scientiarum Fennica Commentationes Biologicae.  
 Sots. Nauka Tekh. — Sotsialisticheskaya Nauka i Tekhnika.  
 Stavropol-Caucasian Agr. Exp. Sta. Stavropol Munic. Auth. — Stavropol-Caucasian Agricultural Experiment Station of the Stavropol Municipal Authority (Stavropol).  
 Sugar Beet Grower Quart. — Sugar Beet Grower Quarterly.  
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 Tr. Khar'kov. Sel'skokhoz. Inst. — Trudy Khar'kovskogo Sel'skokhozyaistvennogo Instituta.  
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 Versl. Meded. Plantenziekten. Dienst Wageningen — Verslagen en Mededeelingen van den Plantenziektenkundigen Dienst te Wageningen.  
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 Warsaw Hort. Soc. Annu. — Warsaw Horticultural Society's Annual.  
 Wash. Agr. Exp. Sta. Bull. — Washington Agricultural Experiment Station Bulletin.  
 Wash. Agr. Ext. Serv. Ext. Mimco. — Washington Agricultural Extension Service Extension Mimeograph.  
 Wash. Farmer — Washington Farmer.  
 Welsh J. Agr. — Welsh Journal of Agriculture.  
 West. Can. Beekeep. — Western Canada Beekeeper.  
 Wis. Univ. Ext. Serv. Spec. Circ. — Wisconsin University Extension Service Special Circular.  
 Wkly. Market News — Weekly Market News.  
 Yearb. Dep. Agr. Petrograd — Yearbook of the Department of Agriculture, Petrograd.  
 Z. Angew. Entomol. — Zeitschrift für Angewandte Entomologie.  
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 Z. Morphol. Ökol. Tiere — Zeitschrift für Morphologie und Ökologie der Tiere.  
 Z. Pflanzenkr. — Zeitschrift für Pflanzenkrankheiten.  
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