

Onderzoeksoverzicht insecten 2023

Onderzoeken uitgevoerd door samenwerkingen met WUR, Aeres, Fontys, HAS Green Academy en andere partijen.



Hoofdcategorie	Subcategorie	Titel project	Link documenten
Beleid	Overig	RDA zienswijze: De ontpopping van de insectensector	https://www.rda.nl/publicaties/zienswijzen/2018/06/04/rda-zienswijze-de-ontopping-van-de-insectensector---ongewervelden-als-productiedier
Economie	Benchmark	Economische benchmark	https://research.wur.nl/en/projects/addkwin-insecten-bo-43-111-040
Economie	Business model	Development of sustainable business models for insect-fed poultry production: opportunities and risks	Development of sustainable business models for insect-fed poultry production: opportunities and risks (wageningenacademic.com)

Economie	Business model	A sustainable business model for Black Soldier Fly production in the feed supply chain: Exploring business models for a farming transition with Black Soldier Fly	A sustainable business model for Black Soldier Fly production in the feed supply chain: Exploring business models for a farming transition with Black Soldier Fly I Request PDF (researchgate.net)
Economie	Doelgroepen	I am Flexigan': identifying pioneers groups for insect consumption. Journal of Insects as Food and Feed: Insects to Feed the World, 8(3), 339-350.	https://edepot.wur.nl/586639
Economie	Marketing	Overzicht van bedrijven betrokken in de eetbare insecten sector regio België - Nederland Marktverkenning in het kader van Entomospeed	Overzicht bedrijven betrokken in de eetbare insectensector (entomospeed.nl)
Economie	Marketing	Marktverkenning Vleesvervangers en insectenproducten NGN	http://www.entomospeed.nl/Portals/484/WP5%20NGN%20Rapportage%20-%20marktverkenning%20vleesvervangers.pdf
Economie	Marketing	Marktverkenning: consumentenonderzoek food (NGN)	http://www.entomospeed.nl/Portals/484/Marktverkenning%20consumenten%20food.pdf
Economie	Overig	The state of the art of the insect business in the Netherlands: Book of Abstracts insecta 2019	Floto-Stammen, S., & Fanter, M. (2019). The state of the art of the insect business in the Netherlands. In Proceedings of the Insecta 2019 Conference (p. 119 BAB_103_Insecta2019). BAB_103_Insecta2019 (insecta-conference.com)
Economie	Marketing	Foodmarketing: This is what you need to know on how marketing can support the agri-food transition in times of change	20. Food marketing (wageningenacademic.com)
Feed	Overig	Insects on the monogastric menu	https://doi.org/10.3920/JIFF2022.x005

Gezondheid	Emmissies	Bioconversion efficiencies, greenhouse gas and ammonia emissions during black soldier fly rearing – A mass balance approach	https://doi.org/10.1016/j.jclepro.2020.122488
Gezondheid	Feed	Advice on animal and public health risks of insects reared on former foodstuffs as raw material for animal feed	https://english.nwva.nl/documents/consumers/food/safety/documents/advice-on-animal-and-public-health-risks-of-insects-reared-on-former-foodstuffs-as-raw-material-for-animal-feed
Gezondheid	Feed	Benefits of feeding insects for piglets, broilers and the environment	https://www.wur.nl/en/newsarticle/wur-and-industry-explore-benefits-of-feeding-insects-for-piglets-broilers-and-the-environment.htm
Gezondheid	Feed	Bioactive properties of insect products for monogastric animals – a review	https://doi.org/10.3920/JIFF2021.0031
Gezondheid	Feed	Use of insect products in pig diets	https://doi.org/10.3920/JIFF2020.0091
Gezondheid	Feed	Insectenvoer voor een betere gezondheid van pluimvee- en varkens	https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksprojecten-Inv-soorten-onderzoek/kennisonline/insect-products-as-health-promoter-in-poultry-and-pig-feed.htm
Gezondheid	Feed	Intestinal health supportive effects of insect derivatives	544786 (wur.nl)
Gezondheid	Feed	Digestibility of insect proteins and insect-based products	https://www.nweurope.eu/media/15435/literature-review_digestibility-of-insect-proteins-and-insect-based-products.pdf
Gezondheid	Food	Advies van BuRO over risico's consumptie gekweekte insecten	https://www.nwva.nl/documenten/consument/eten-drinken-roken/overige-voedselveiligheid/risicobeoordelingen/advies-consumptie-gekweekte-insecten
Gezondheid	Food	Allergenic risks of mealworm and other insects	https://nvdv.nl/storage/app/media/allergenic-risks-of-mealworm-and-other-insects-hch-broekman-ntvdv-2018-02.pdf
Gezondheid	Insecten	Insect Dokters	https://www.insectdoctors.eu/en/insectdoctors.htm

Gezondheid	Insecten	Toegestane niveaus van pesticideresiduen schadelijk voor groei en overleving van insecten gekweekt voor diervoeder en voedingsmiddelen	https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksinstituten/food-safety-research/show-wfsr/toegestane-niveaus-van-pesticideresiduen-schadelijk-voor-groei-en-overleving-van-insecten-gekweekt-voor-diervoeder-en-voedingsmiddelen.htm
Gezondheid	insecten	Intestinal health supportive effects of insect derivatives: In vitro studies towards immune activity, epithelial protection and microbiota modulation	https://www.wur.nl/nl/show/intestinal-health-supportive-effects-of-insect-derivatives-in-vitro-studies-towards-immune-activity-epithelial-protection-and-microbiota-modulation.htm
Gezondheid	Insecten	Het effect van mycotoxinen en pesticiden in reststromen op de groei, overleving en bioaccumulatie van eetbare insecten (HAS Hogeschool)	http://www.entomospeed.nl/Portals/484/Algemeen_effecten%20van%20mycotoxinen%20en%20insectiden_HAS.pdf
Gezondheid	Insecten	Health of the black soldier fly and house fly under mass-rearing conditions: innate immunity and the role of the microbiome	Health of the black soldier fly and house fly under mass-rearing conditions: innate immunity and the role of the microbiome (wageningenacademic.com)
Gezondheid	Insecten	A systematic literature review on the effects of mycotoxin exposure on insects and on mycotoxin accumulation and biotransformation	A systematic literature review on the effects of mycotoxin exposure on insects and on mycotoxin accumulation and biotransformation SpringerLink
Gezondheid	Landbouwhuisdieren	Fly in the coop How black soldier fly larvae improve broiler and pig welfare	Microsoft Word - Allyson Ipema_thesis_v1.docx (wur.nl)
Gezondheid	Landbouwhuisdieren	Assessing the Effectiveness of Providing Live Black Soldier Fly Larvae (Hermetia illucens) to Ease the Weaning Transition of Piglets	Frontiers Assessing the Effectiveness of Providing Live Black Soldier Fly Larvae (Hermetia illucens) to Ease the Weaning Transition of Piglets (frontiersin.org)

Gezondheid	Mensen	Edible insects unlikely to contribute to transmission of coronavirus SARS-CoV-2	Edible insects unlikely to contribute to transmission of coronavirus SARS-CoV-2 (wageningenacademic.com)
Gezondheid	Overig	Clostridioides difficile toxin A-mediated Caco-2 cell barrier damage was attenuated by insect-derived fractions and corresponded to increased gene transcription of cell junctional and proliferation proteins	https://doi.org/10.1039/D1FO00673H
Insectenvoeding	Overig	Scientific overview of the present knowledge on insect rearing, use of residual streams as substrates, and safety aspects	https://edepot.wur.nl/571273
Insectenvoeding	Reststromen	Upgrading ammonia-nitrogen from manure into body proteins in black soldier fly larvae	https://doi.org/10.1016/j.resconrec.2022.106343
Insectenvoeding	Reststromen	Black soldier fly reared on pig manure: Bioconversion efficiencies, nutrients in the residual material, greenhouse gas and ammonia emissions	https://doi.org/10.1016/j.wasman.2021.04.001
Insectenvoeding	Reststromen	Safe Insects	https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksprojecten-Invsoorten-onderzoek/kennisonline/veilig-insecten-kweken-wachten-op-wettelijke-goedkeuring-afvalstromen-1.htm
Insectenvoeding	Reststromen	The profitability potential of black soldier fly (BSF) larvae raised on pig manure at farm leve	https://www.wur.nl/nl/Publicatie-details.htm?publicationId=publication-way-353930383534

Insectenvoeding	Reststromen	Suitability of side flows as ingredients for poultry feed: Wildcard connected circularity – agrologistics of side flows: the missing link for circularity by design	https://doi.org/10.18174/548289
Insectenvoeding	Reststromen	Bioconversion of Different Waste Streams of Animal and Vegetal Origin and Manure by Black Soldier Fly Larvae <i>Hermetia illucens</i> L. (Diptera: Stratiomyidae)	https://doi.org/10.3390/insects14020204
Insectenvoeding	Reststromen	Bioconversion of Digestate, Pig Manure and Vegetal Residue-Based Waste Operated by Black Soldier Fly Larvae, <i>Hermetia illucens</i> L. (Diptera: Stratiomyidae)	https://doi.org/10.3390/ani11113082
Insectenvoeding	Reststromen	Valorisation Potential of Using Organic Side Streams as Feed for <i>Tenebrio molitor</i> , <i>Acheta domesticus</i> and <i>Locusta migratoria</i>	https://www.mdpi.com/2075-4450/12/9/796
Insectenvoeding	Reststromen	Analyses substraat op laboschaal (KU Leuven)	http://www.entomospeed.nl/Portals/484/Analyses%20op%20substraten%20op%20laboschaal.pdf
Insectenvoeding	Reststromen	Analyses substraat op pilootschaal (KU Leuven en Inagro)	http://www.entomospeed.nl/Portals/484/Analyses%20op%20substraat%20op%20pilootschaal.pdf
Insectenvoeding	Reststromen	Growth of BSF (black soldier fly, <i>Hermetia illucens</i>) larvae on organic waste streams of potato processing and malting industries in the Netherlands	https://edepot.wur.nl/559066

Kweek	Genetica	Impact of genetic selection in insect populations using different selection designs – a simulation study	https://edepot.wur.nl/583981
Kweek	Handleiding	Handbook for the production chain WUR	https://doi.org/10.3920/978-90-8686-902-2
Kweek	Meelworm	Determining the Effect of Different Reproduction Factors on the Yield and Hatching of Tenebrio Molitor Eggs	https://www.nweurope.eu/media/18223/insects-13-00615-v4.pdf
Kweek	Meelworm	Entomoponics: combining insect rearing and greenhouse vegetable production – a case study with Tenebrio molitor and high-wire cucumber cultivation	https://www.wageningenacademic.com/doi/abs/10.3920/JIFF2021.0130
Kweek	Overig	Literature review to define knowledge gaps on the sustainable production of insects for feed	https://www.nweurope.eu/media/18814/wp5act1-report-literature-search-on-insects-for-feed.pdf
Kweek	Welzijn	These 7 principles make responsible use of farmed insects possible - WUR	These 7 principles make responsible use of farmed insects possible - WUR
Kweek	Welzijn	The ethics and mindedness of insects	32. The ethics and mindedness of insects Justice and food security in a changing climate (wageningenacademic.com)
Kweek	Welzijn	Behaviour of two fly species reared for livestock feed: optimising production and insect welfare	Behaviour of two fly species reared for livestock feed: optimising production and insect welfare Journal of Insects as Food and Feed (wageningenacademic.com)

Overig	Efficiëntie insecten	Growth efficiency, intestinal biology, and nutrient utilization and requirements of black soldier fly (<i>Hermetia illucens</i>) larvae compared to monogastric livestock species: a review	https://doi.org/10.1186/s40104-022-00682-7
Overig	Techniek	Overcoming Technical and Market Barriers to Enable Sustainable Large-Scale Production and Consumption of Insect Proteins in Europe	https://doi.org/10.3390/insects13030281
Overig	Techniek	Kweekhandleidingen meelwormen en zwarte soldaatvlieg Entomospeed	Publicaties (entomospeed.nl)
Samenstelling insecten	Overig	Yellow mealworms (<i>Tenebrio molitor</i>) as an alternative animal feed source: A comprehensive characterization of nutritional values and the larval gut microbiome	https://doi.org/10.1016/j.jclepro.2023.136104
Samenstelling insecten	overig	Clostridium perfringens suppressing activity in black soldier fly protein preparations	https://doi.org/10.1016/j.lwt.2021.111806
Samenstelling insecten	Proteïne	Characterization and functional properties of protein fractions from insects	https://www.wur.nl/en/research-results/chair-groups/agrotechnology-and-food-sciences/food-sciences-technology/food-quality-and-design-1/phd-study-trip/liya-yi.htm
Samenstelling insecten	Proteïne	Extraction and characterization of protein fractions from five insect species	https://www.sciencedirect.com/science/article/abs/pii/S0308814613007218?via%3Dihub

Toepassingen	Consumenten acceptatie	Information about circular benefits makes insect food a little more acceptable to consumers	https://www.wur.nl/en/research-results/research-institutes/economic-research/show-wecr/information-about-circular-benefits-makes-insect-food-a-little-more-acceptable-to-consumers.htm
Toepassingen	Consumenten acceptatie	Eating Insects; Consumer acceptance of a culturally inappropriate food	https://edepot.wur.nl/410874
Toepassingen	Consumenten acceptatie	Consumer acceptance of insect-based foods in the Netherlands: Academic and commercial implications	https://www.researchgate.net/publication/305459348_Consumer_acceptance_of_insect-based_foods_in_the_Netherlands_Academic_and_commercial_imPLICATIONS
Toepassingen	Consumenten acceptatie	Introducing insect- or plant-based dinner meals to families in Denmark: study protocol for a randomized intervention trial	https://doi.org/10.1186/s13063-022-07000-6
Toepassingen	Consumenten acceptatie	Eating full circle: Exploring consumers' sympathy for circularity in entomophagy acceptance	https://doi.org/10.1016/j.foodqual.2022.104760
Toepassingen	Consumenten acceptatie	Consumer acceptance among Dutch and German students of insects in feed and food	https://onlinelibrary.wiley.com/doi/10.1002/fsn3.2006
Toepassingen	Consumenten acceptatie	Consumerscience: Value Proposition and target group definition	Market-opportunities-for-insects-in-dog-food.pdf (bioinsect.dk)
Toepassingen	Consumenten acceptatie	Increase the consumer acceptance of insect-based food in western European countries: A German and Dutch market study.	Chapter VII : Increase the consumer acceptance of insect based food in western European countries : A German and Dutch market study Groenekennis (wur.nl)
Toepassingen	Consumenten acceptatie	<u>Consumer acceptance among Dutch and German students of insects in feed and food.</u>	https://onlinelibrary.wiley.com/doi/10.1002/fsn3.2006

Toepassingen	Consumenten acceptatie	<u>The influence of the product name on the acceptance of insect-based food. In Proceedings of the Insecta 2022 Conference</u>	<u>The influence of the product name on the acceptance of insect-based food. In Proceedings of the Insecta 2022 Conference</u>
Toepassingen	Consumenten acceptatie	Packaging communication as a tool to reduce disgust at edible insects.	<u>Packaging communication as a tool to reduce disgust at edible insects. Journal of Insects as Food and Feed, 8(1), 122. Retrieved from Insects to Feed the World 2022 (wur.nl)</u>
Toepassingen	Consumenten acceptatie	Increase the consumer acceptance of insect-based food in western European countries: A German and Dutch market study. In Pijnenburg V., Szillat P., Lucas J. (eds.), Cross-Border Business Development (Vol. 1, pp. 194-225). Duren: Shaker.	<u>HBO Kennisbank (hbo-kennisbank.nl)</u>
Toepassingen	Feed	Insect Feed	<u>https://insectfeed.nl</u>
Toepassingen	Feed	Development of sustainable business models for insect-fed poultry production: opportunities and risks	<u>https://doi.org/10.3920/JIFF2021.0216</u>
Toepassingen	Feed	Use of black soldier fly and house fly in feed to promote sustainable poultry production	<u>https://doi.org/10.3920/JIFF2020.0064</u>
Toepassingen	Feed	Krachten bundelen voor onderzoek naar insecteningrediënten in pluimveevoer	<u>https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksinstututen/livestock-research/show-wlr/krachten-bundelen-voor-onderzoek-naar-insecteningredienten-in-pluimveevoer.htm</u>
Toepassingen	Feed	KWIN Veehouderij 2022-2023 nu met insecten	<u>https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksinstututen/livestock-research/show-wlr/kwin-veehouderij-2022-2023-nu-met-insecten.htm</u>

Toepassingen	Feed	Factors affecting the decision-making process of using insect-based products in animal feed formulations	https://doi.org/10.3920/JIFF2022.0164
Toepassingen	Feed	Adaptation of Livestock to New Diets Using Feed Components without Competition with Human Edible Protein Sources –A Review of the Possibilities and Recommendations	https://doi.org/10.3390/ani11082293
Toepassingen	Feed	Why should we feed pigs and poultry with insect protein?	https://www.nweurope.eu/media/18813/policy-paper-feed-valusect_020421-final.pdf
Toepassingen	Feed	Use of black soldier fly and house fly in feed to promote sustainable poultry production	https://www.wageningenacademic.com/Use-of-black-soldier-fly-and-house-fly-in-feed-to-promote-sustainable-poultry-production-Journal-of-Insects-as-Food-and-Feed (wageningenacademic.com)
Toepassingen	Feed	Insects as a sustainable feed ingredient in pig and poultry diets	https://library.wur.nl/WebQuery/wurpubs/fulltext/234247
Toepassingen	Food	A literature review of consumer research on edible insects: recent evidence and new vistas from 2019 studies	https://doi.org/10.3920/JIFF2020.0052
Toepassingen	Food	Insecten als ingrediënt voor voeding	https://www.wur.nl/nl/project/insecten-als-ingrediënt-voor-voeding.htm
Toepassingen	Food	Farmed insects for sustainable food systems Farmed insects for sustainable food systems	Farmed insects for sustainable food systems – Research@WUR

Toepassingen	Food	Moral Food Lab: transforming the food system with crowd-sourced ethics. Conference paper presented at the 21st STS Conference Graz 8-10. May 2023 Critical Issues in Science, Technology and Society Studies, Graz, Austria	https://openlib.tugraz.at/download.php?id=6454c7ae237fa&location=browse
Toepassingen	Food/feed	Potential of insect proteins for food and feed : effect of endogenous enzymes and iron-phenolic complexation	https://library.wur.nl/WebQuery/wda/2241021
Toepassingen	Food/feed	Standardisation of quantitative resource conversion studies with black soldier fly larvae	https://doi.org/10.3920/JIFF2019.0004
Toepassingen	Frass	Verkennend onderzoek naar selectieve gravimetrische bepalingen van plantaardige vezels en chitine (KU Leuven)	https://subsite.inagro.be/Portals/484/BSF_gravimetrische_bepalingen_plantaardige_vezels_chitine_KU.pdf
Toepassingen	Frass	Prospects of residual streams from insect cultivation for sustainable crop management	Prospects of residual streams from insect cultivation for sustainable crop management — Research@WUR
Toepassingen	Frass	Insectenhuid verbetert de bodem	Insectenhuid verbetert de bodem - Resource online (resource-online.nl)
Toepassingen	Frass	Arable farmers' innovation decision process towards using by-products of insect production	https://library.wur.nl/WebQuery/wurpubs/fulltext/576412
Toepassingen	Frass	Closing the loop: Exploiting sustainable insect production to improve soil, crop and animal health	Closing the loop: Exploiting sustainable insect production to improve soil, crop and animal health - WUR

Toepassingen	Overig	Techno-functional analysis of insect proteins and insect-based products	https://www.nweurope.eu/media/15468/literature-review_techno-functional-analysis-of-insect-proteins-and-insect-based-products.pdf
Toepassingen	Overig	Closing the loop: Exploiting sustainable insect production to improve soil, crop and animal health	https://www.wur.nl/en/project/closing-the-loop-exploiting-sustainable-insect-production-to-improve-soil-crop-and-animal-health.htm
Toepassingen	Overig	Susinchian (horizon)	https://susinchain.eu
Toepassingen	Petfood	Insect-based dog and cat food: A short investigative review on market, claims and consumer perception	Insect-based dog and cat food: A short investigative review on market, claims and consumer perception - ScienceDirect
Toepassingen	Petfood	Market opportunities for insects in dog food	Insects to Feed the World 2020 Virtual Conference (wageningenacademic.com)
Toepassingen	Veiligheid	Borgen van de veiligheid van insecten	https://www.wur.nl/nl/onderzoek-resultaten/onderzoeksprojecten-Invsoorten-onderzoek/kennisonline/borgen-van-de-veiligheid-van-insecten-2.htm
Toepassingen	Veiligheid	Controlling the safety for feed and Food	https://topsectoragrifood.nl/project/controlling-the-safety-of-insects-for-feed-food/
Toepassingen	Consumenten acceptatie	Eating full circle: Exploring consumers' sympathy for circularity in entomophagy acceptance	https://www.sciencedirect.com/science/article/pii/S095032932200235X
Toepassingen	Food	Insects are a viable protein source for human consumption: from insect protein digestion to postprandial muscle protein synthesis in vivo in humans: a double-blind randomized trial	https://cris.maastrichtuniversity.nl/en/publications/insects-are-a-viable-protein-source-for-human-consumption-from-in
Verwerking	Houdbaarheid	Packaging, storage and shelf life analysis	https://www.nweurope.eu/media/17902/literature-review_packaging-storage-and-shelf-life-analysis.pdf
Verwerking	Overig	Processing of insects as a whole or as fractions	https://www.nweurope.eu/media/15862/literature-review_processing-of-insects-as-a-whole-or-as-fractions.pdf

Welzijn	Insecten	Insects as mini-livestock: Considering insect welfare in feed production	https://doi.org/10.1080/27685241.2023.2191797
Welzijn	Kippen	Provisioning of live black soldier fly larvae (<i>Hermetia illucens</i>) benefits broiler activity and leg health in a frequency- and dose-dependent manner	https://doi.org/10.1016/j.applanim.2020.105082
Wetgeving	Marketing	Why selling edible insects is now illegal in the UK?	https://www.nweurope.eu/media/19745/policy-paper-uk-edible-insects-legal-situation-valusect_update-from-november-2022.pdf
Wetgeving	Novelfood dossier	Novel Food Dossiers: van black box naar tool box	https://topsectoragrifood.nl/project/novel-food-dossiers-van-black-box-naar-tool-box/
Wetgeving	Overig	Toelatingsprocedure voor insecten als mini-vee	https://edepot.wur.nl/353333
Wetgeving	Overig	Policy Paper - Recommendations for Guidelines on insect research	https://www.nweurope.eu/media/18883/policy-paper-need-for-guidelines-on-insect-research_full-version_final.pdf
Wetgeving	Overig	Policy paper - Guidelines on insect research	https://www.nweurope.eu/media/18884/policy-paper-need-for-guidelines-on-insect-research.pdf