

骆焱平 徐冰 杨育红 编

# 农药外贸英语

Foreign Trade English  
of  
Pesticides



化学工业出版社

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· 北京 ·

本书紧扣当前农药国际贸易中的重点知识和关键点,详细介绍了农药的基本术语、农药的国际法规与管理以及相关的外贸知识:外汇、关税、商务谈判、商务信函等,同时还列举了中国、美国、坦桑尼亚等国的农药贸易案例,以帮助读者更深入地了解有关农药的贸易、运输及规范管理等内容。书后附有农药的关税代码及农药中、英文名称对照,以便从事农药外贸的相关人员进一步查阅学习。

本书适合农药管理人员、农药外贸人员、农药进出口公司职员、海关人员及大、中专学生学习和参考使用。

### 图书在版编目(CIP)数据

农药外贸英语/骆焱平,徐冰,杨育红编. —北京:  
化学工业出版社, 2017.5  
ISBN 978-7-122-29426-5

I. ①农… II. ①骆…②徐…③杨… III. ①农药-  
对外贸易-英语-研究 IV. ①F75

中国版本图书馆 CIP 数据核字 (2017) 第 068804 号

---

责任编辑:刘 军 冉海滢  
责任校对:宋 夏

装帧设计:关 飞

---

出版发行:化学工业出版社(北京市东城区青年湖南街13号 邮政编码100011)

印 装:高教社(天津)印务有限公司

710mm×1000mm 1/16 印张12 $\frac{3}{4}$  字数252千字 2017年7月北京第1版第1次印刷

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购书咨询:010-64518888(传真:010-64519686) 售后服务:010-64518899

网 址: <http://www.cip.com.cn>

凡购买本书,如有缺损质量问题,本社销售中心负责调换。

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定 价:80.00 元

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## 前言

自 2001 年加入 WTO 后,中国与世界上其他国家和地区间的贸易得到迅猛发展。一方面,中国自觉遵守世贸规则,积极从事外贸活动;另一方面,中国根据自身发展,制定自己的法律法规体系,以适应对外贸易需要。中国现已成为世界第二大经济体,在世界贸易中起着举足轻重的作用。随着中国倡导的“一带一路”政策的实施,中国的对外贸易将再上一个新台阶,中国农药的对外贸易也将会面临新的春天。

目前,中国依然是农业大国,农药在保护农作物、避免病虫害的危害、增加粮食产量供给 13 亿多人口等方面发挥了重要作用。现阶段中国农药产量位居世界第一,一方面新的农药品种不断涌现,另一方面农药产品出现过剩现象,亟需发展农药的进出口贸易。由于农药属于危险化学品,在世界贸易中管制相当严格。国际农药贸易管理十分规范,任何细小的疏忽,都将导致贸易失败,给中国的进出口公司带来巨大损失。因此,详细了解农药的贸易规则尤为重要,在此背景下,我们组织编写了《农药外贸英语》。

本书由 18 个单元组成,内容涵盖农药的基本术语、农药的国际法规与管理以及与农药外贸相关的外贸知识,如外汇、关税、商务谈判、商务信函等方面内容,同时列举中国、美国、坦桑尼亚等国的农药贸易案例,配合介绍有关农药贸易的规范及管理。每个单元后面均列出重要的专业词汇、注释和阅读材料,其中阅读材料部分是对正文的补充和扩展。文末附有农药的关税代码及农药中英文名称对照。

本书由骆焱平(海南大学)、徐冰(重庆交通大学)、杨育红(海南大学)编写,另外,王兰英、刘诗诗、韩丹丹、李花、章杰、陈宇丰、侯文成、张鹏等参与了本书资料收集、整理与校对工作,在此表示衷心的感谢。

本书出版得到 2017 年海南省重大科技计划项目和热带生物资源可持续利用重点实验室的资助。

本书收集、整理、参考和引用了国内外相关资料,在此对相关作者表示衷心的感谢。由于编者水平有限,不足之处在所难免,敬请读者批评指正。

编者

2017 年 4 月

## Acronyms and Abbreviations

AI	Active Ingredient
AIT	Advance Income Tax
AMPs	Administration of Monetary Penalties
BATNA	Best Alternative to a Negotiated Agreement
BNSF	Burlington Northern Santa Fe
CAC	Codex Alimentarius Commission
CAFTA	Central American Free Trade Agreement
CAGR	Compound Annual Growth Rate
CAS	Chemicals Abstract Service
CIF	Cost Insurance and Freight
CIPAC	Collaborative International Pesticides Analytical Council
CLC	Canada Labor Code
CPI	Consumer Price Index
CS	Capsule Suspensions
CSC	Customs Service Charge
CST	Customs Service Tax
DNR	Department of Natural Resources
DC	Documentary Collection
DP	Dustable Powder
EC	Emulsifiable Concentrates
EEC	European Economic Community
EMS	European Monetary System
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
FCVR	Final Classification and Valuation Report
FDA	Food and Drugs Act
FFDCA	Federal Food, Drug, and Cosmetic Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FOB	Free On Board
FTAs	Free Trade Agreements
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product

GIAFP	Groupement International des Associations Nationales de Fabricants de Produits Agrochimiques
GLP	Good Laboratory Practice
GMO	Genetically Modified Organism
GR	Granules
HAI	Health Action International
ICAMA	Institute for the Control of Agrochemicals, Ministry of Agriculture
ICCDUP	International Code of Conduct on the Distribution and Use of Pesticides
IDF	Importation Declaration Form
IFC	International Finance Corporation
IP	Intellectual Property
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IRPTC	International Register of Potentially Toxic Chemicals
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
JMPR	Joint Meeting on Pesticide Residues
JMPS	Joint Meeting on Pesticides Specifications
KIA	Kilimanjaro International Airports
LCs	Letters of Credits
LNG	Liquefied Natural Gas
LTL	Less-Than-Truckload
MBCA	Migratory Birds Convention Act
MFN	Most Favored Nation
MOA	Ministry of Agriculture
MOH	Ministry of Health
MRLs	Maximum Residue Limits
MSDS	Material Safety Data Sheets
NAFTA	North American Free Trade Agreement
NHS	National Highway System
NIP	National Implementation Plans
NTMs	Non Tariff Measures
OECD	Organization for Economic Co-operation and Development
OP	Organophosphate
OSHA	Occupational Safety and Health Administration
P. S	Postscript

PAL	Ports and Airport Levy
PAN	Pesticide Action Network
PCP	Pest Control Products
PCVR	Provisional Classification and Valuation
PIC	Prior Informed Consent
POPs	Persistent Organic Pollutants
R&D	Research and Development
RD	Regulatory Duty
ROW	Rest of the World
SBE	Single Bill of Entry
SCF	Standard Compliance Fee
SD	Supplementary Duty
SDRC	State Development and Reform Committee
SPS	Sanitary and Phytosanitary
STDF	Standards and Trade Development Facility
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TBT	Technical Barriers to Trade
TC	Technical Material
3PLs	Third Party Logistics
TDG	Transportation of Dangerous Goods Act
TFA	Tanganyika Farmers Association
TGAI	Technical Grade Active Ingredient
TK	Technical Concentrate
TL	Truckload
TPRI	Tropical Pesticide Research Institute
TRA	Tanzania Revenue Authority
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TSCA	Toxic Substances Control Act
UCP	Uniform Customs and Practice
UNEP	United Nations Environment Programme
UP	Union Pacific
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization
WHOPES	WHO Pesticide Evaluation Scheme
WP	Wettable Powders
YOY	Year-On-Year Percentage



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## Unit 1

# Terminologies and Definitions of Pesticide

### Learning Objectives

- *Understand words related to pesticides.*
- *Know how different types of pesticides work.*
- *Identify different pesticide formulations, learn the benefits and the uses of each type.*
- *Know about the function of adjuvants.*

## Pest

A pest is any harmful, noxious, or problem organism that causes an unwanted effect. Pests include: fungi, bacteria, viruses, weeds, insects, mites, rodents and birds. Wildlife (e.g. raccoons, wolves, deer) can sometimes be named as pests. If left unmanaged, pests may impact human health or cost money.

## Pesticide

A pesticide is designed to kill, control, repel, attract, or manage pests. Any product that claims to do any of these things is a pesticide under the Pest Control Product Act and Regulations. Pesticides include chemicals that regulate plant growth, defoliants, or plant desiccants.

## Contact Pesticides

Contact pesticides control pests when they come in direct contact with the pest. Weeds are killed when enough of their surface area is covered with a contact herbicide. Insects are controlled when sprayed directly, or when insects travel across treated surfaces.

# Systemic Pesticides

Systemic pesticides control pests when applied to one area of a plant or animal. The pesticide eventually moves throughout the entire plant or animal. A systemic herbicide absorbed through a plant's roots moves throughout the whole plant and kills it. Systemic insecticides enter plants through the roots or plant surfaces. They move throughout the plant and kill insects that feed on plant juices. A systemic insecticide applied to the skin of an animal (e.g. beef, cow) will control internal parasites and pests when it moves throughout the animal's body.

## Classification of Pesticides

There are many pesticides available. They can be grouped in a number of ways. The most common groupings are based on:

- Target pests
- The way they work (mode of action or route of entry)
- Chemical family

The most common way to group pesticides is by the pest(s) they are registered to control. Common pesticide types and the groups of pests they are designed to control are given in Table 1-1.

Table 1-1 List of pesticide type with target pest

Pesticide Type	Target Pest
Acaricide	spiders, mites and ticks
Algicide	algae
Avicide	birds
Bactericide	bacteria
Fungicide	fungi
Growth regulator	plants and insects
Herbicide	plants (mostly weeds)
Insecticide	insects
Miticide	mites
Molluscicide	snails and slugs
Nematicide	nematodes
Piscicide	fish
Rodenticide	rodents

Pesticides can be grouped by the way in which they work to control target pests (mode of action or route of entry). Two main modes of action are contact and systemic (Table 1-2).

# Public health uses of pesticides

Pesticides used in the control of pests of public health significance. They include disease vector control pesticides, household pesticide products and professional pest control pesticides (used by pest control operators in homes and public areas).

## Formulant

A formulant is an inert (non-active) substance added by the manufacturer to the active ingredient. This allows it to be stored, handled, or applied. A formulant can be liquid or solid.

Table 1-2 List of pesticides grouped by mode of action or route of entry

Group	Mode of Action
Attractants	Pesticides that have a particular odor or scent that attracts insects to a trap for identification or control
Eradicants	Fungicides that can kill a pest once the pest has infected a plant, but before the pest becomes well established. Eradicants provide better pest control than protectants, because they have an element of post-infection control
Fumigants	Pesticides that work in the gaseous form and control pests when the pests breathe in gases, or the gases are absorbed into their bodies through another manner
Growth regulators	Pesticides that, once taken in by the pest, act like a pest's own hormones, disrupting normal development, causing it to die before it can become fully developed
Protectants	Fungicides that prevent disease infection by creating a barrier between the pest and the plant preventing the disease from becoming established
Repellents	Pesticides that produce an odor, repelling the pest from the treated area or plants
Stomach ingestion	Pesticides that poison the pest once they are eaten
Contact	Contact pesticides control pests when they come in direct contact with the pest
Systemic	Systemic pesticides, when applied to one area of a plant or animal, are transported throughout the plant or animal. They kill all pests that feed on or in that plant or animal

## Formulation

A formulation is one or more active ingredients combined with formulants to make an effective product. The pesticide manufacturer develops the formulation to make it safe, convenient, and effective. A formulation is one or more active ingredients combined with one or more formulants (inerts or non-active materials).

## Active Ingredient

The active ingredient is the part of the formulation that gives the desired or toxic effect. A pesticide can have more than one active ingredient.

## Formulation Types

Pesticides can be liquids, solids, or gases. Liquid formulations include: Emulsifiable concentrates; Flowables; Microcapsulated suspensions; Solutions. Solid formulations include: Dusts; Baits; Granules; Tablets; Pellets; Dry flowable powders; Soluble granules; Wettable powders; Soluble powders.

## Special Formulations

Pesticide manufacturers produce special formulations to meet the needs of specific applicators. These include fumigants and soluble packages.

Fumigants are available as gases, liquids, and solids. Carbon dioxide and ethylene oxide are compressed gases used as fumigants. Liquid fumigants become gases when applied. Solid fumigants come as dust, pellets, or tablets that release gases when exposed to moist air.

Pre-weighed amounts of wettable or soluble powder can be packaged in water-soluble plastic bags. When bags are placed in spray tank water, they dissolve and release their contents. These formulations reduce hazards around mixing and loading; there is no need to measure and no leftover product.

## Carrier

A carrier is mixed with an active ingredient to make the pesticide: Safer to handle; Easier to apply; Better suited for storage. Carriers include water, oil, solvents, or clay. Some pesticides do not need a carrier.

## Adjuvant

The manufacturer can add an adjuvant to the formulation. An adjuvant can also be added to the spray tank by the applicator. Adjuvants change application traits to make products: Safer; More effective; Easier to handle; Easier to apply.

Adjuvants increase the effectiveness of a pesticide by changing a physical or chemical trait. These broaden the conditions under which a pesticide can be used (Table 1-3).

## Technical Material (TC)

Technical-grade materials and technical concentrates; also known as technical-grade active ingredient.

**Table 1-3 Adjuvants**

Type	Activity
Penetrants	Allow the pesticides to get through the outer layer of a treated surface
Spreaders	Allow the pesticides to form a uniform coating over the treated surface
Stickers	Allow the pesticide to remain on the treated surface
Surfactants	Improve the spreading, dispensing, or wetting properties of a pesticide
Wetting Agents	Allow wettable powders, and dry flowables to mix with water and better stick to target surfaces
Antifoaming Agents	Reduce foaming of spray mixtures that require vigorous agitation
Buffering Agents	Increase the solubility of pesticides in water or slow the chemical breakdown of some pesticides by lowering the pH of alkaline water
Drift Retardants or Thickeners	Increase the droplet size of the spray material, reducing particle drift
Emulsifiers	Allow oil-based pesticides to mix with water
Invert Emulsifiers	Allow water-based pesticides to mix with oil-based carriers

## Naming Pesticides

A pesticide can be identified by product name, common name, or chemical name. Understanding the use of these can reduce confusion when seeking information on a pesticide.

The product name is the registered trade name or trademark chosen by the manufacturer. The product name is clearly displayed on the principal panel of the label.

The common name is the name of the active ingredient in the product. It appears in lower case letters, often next to the word “Guarantee” on the principal panel of the label. The same active ingredient may be present in a number of products. Active ingredients are not always limited to one manufacturer. For example, the active ingredient glyphosate is made by a number of companies.

The chemical name refers to the complex chemical structure of the active ingredient. These are used mostly by chemists. The chemical name does not always appear in full on the label. It is found in the Material Safety Data Sheet for the product.

## Pesticide Registration

The process whereby the responsible national government or regional authority approves the sale and use of a pesticide following the evaluation of scientific data aimed at demonstrating that the product is effective for its intended purposes and does not pose an unacceptable risk to human or animal health or the environment under the conditions of use in the country or region.

## Risk

The probability and severity of an adverse health or environmental effect occur as a function of a hazard and the likelihood and the extent of exposure to a pesticide.

## Hazard

The inherent properties of a substance, agent or situation have the potential to cause undesirable consequences (e.g. properties that can cause adverse effects or damage to health, the environment or property).

## Maximum Residue Limit (MRL)

The maximum concentration of a residue is legally permitted or recognized as acceptable in or on a food or agricultural commodity or animal feedstuff.

## Good Laboratory Practice (GLP)

A quality system concerned with the organizational process and the conditions under which non-clinical health and environmental safety studies are planned, performed, monitored, recorded, archived and reported.

### Words and Phrases

pesticide [ˈpestɪsaɪd] *n.* 杀虫剂, 农药

acaricide [əˈkærɪsaɪd] *n.* [农药] 杀螨剂

algicide [ˈældʒɪsaɪd] *n.* 灭藻剂, 杀藻剂, 除海藻的药

avicide [ˈævɪsaɪd] *n.* 杀害鸟类, [农药] 杀鸟剂

bactericide [bækˈtɪərɪsaɪd] *n.* [药] 杀菌剂, 杀细菌剂

fungicide [ˈfʌŋ(d)ʒɪsaɪd] *n.* 杀真菌剂, 杀菌剂

plant/insect growth regulator 植物/昆虫生长调节剂

herbicide [ˈhɜːbɪsaɪd] *n.* [农药] 除草剂

insecticide [ɪnˈsektɪsaɪd] *n.* 杀虫剂

miticide [ˈmɪtɪsaɪd] *n.* [农药] 杀螨药

molluscicide [mɒˈlʌskɪsaɪd] *n.* 软体动物杀灭剂, 灭螺剂 (等于 molluscicide)

nematicide [ˈnemətɪsaɪd] *n.* [农药] 杀线虫剂 (等于 nematocide)

piscicide [ˈpɪsəsaɪd] *n.* 鱼类灭绝 (尤指在一定区域内将鱼类消灭尽); 杀鱼剂

rodenticide [rəʊˈdɛntɪsaɪd] *n.* [农药] 灭鼠剂, 杀虫剂

glyphosate [ˈglɪfəseɪt] *n.* [农药] 草甘膦

defoliant [diˈfəʊliənt] *n.* [农药] 落叶剂, 脱叶剂

desiccant [ˈdesɪk(ə)nt] *adj.* 去湿的, 使干燥的; *n.* [助剂] 干燥剂

attractant [əˈtrækt(ə)nt] *n.* 具有诱引力的物质, [昆] 引诱剂; *adj.* 具有诱引力的

eradicant [ɪˈrædɪkənt] *n.* [植物病理学] 根除剂 铲除剂、根除剂

fumigant [ˈfjuːmɪɡənt] *n.* 熏剂, 熏蒸消毒剂

protectant [prəʊˈtektənt] *n.* 保护剂, 杀虫剂

repellent [rɪˈpel(ə)nt] *n.* 趋避剂, 防护剂, 防水布, 排斥力; *adj.* 排斥的, 防水的

contact pesticide 触杀性农药

systemic pesticide 内吸性农药

formulant [ˈfɔːmjʊlənt] *n.* 制剂

formulation [fɔːmjʊˈleɪʃn] *n.* 剂型, 构想, 规划, 公式化, 简洁陈述

active ingredient 活性成分

emulsifiable concentrate 乳油

microcapsulated suspension 微囊悬浮剂

dust [dʌst] *n.* 粉剂, 灰尘, 尘埃, 尘土; *vt.* 撒, 拂去灰尘

bait [beɪt] *n.* 饵, 诱饵; *vt.* 引诱, 在……中放诱饵, 折磨; *vi.* 中途休息

granule [ˈgrænjuːl] *n.* 颗粒, 颗粒剂

tablet [ˈtæblɪt] *n.* 片剂, 药片, 写字板; *vt.* 用碑牌纪念, 将……制成小片或小块

pellet [ˈpelɪt] *n.* 丸剂, 小球; *vt.* 将……制成丸状

dry flowable powder 干悬剂

soluble granules 可溶性粒剂

wettable powder 可湿性粉剂

soluble powder 可溶性粉剂

penetrant [ˈpenɪtr(ə)nt] *n.* 渗透剂; *adj.* 渗透的

spreader [ˈspredə(r)] *n.* 撒布机, 散布者, 推广者, 涂抹剂

sticker [ˈstɪkə] *n.* 黏结剂, 难题, 张贴物, 坚持不懈的人; *vt.* 给…贴上标签价

surfactant [səˈfæktənt] *n.* 表面活性剂; *adj.* 表面活性剂的

wetting agent 润湿剂

antifoaming agent 消泡剂

buffering agent 缓冲剂

drift retardant 防漂移剂

thickener [ˈθɪkənə] *n.* [助剂] 增稠剂, 浓缩剂

emulsifier [ɪˈmʌlsɪfaɪə] *n.* 乳化剂, 黏合剂

invert emulsifier 反相乳化剂

adjuvant [ˈædʒʊvənt] *n.* [药] 助剂, 佐药, 助理员; *adj.* 辅助的

soluble package 可溶性包装袋

carrier ['kæriə] n. [化学] 载体, 运送者, 带菌者, 货架  
mode of action 作用机理、作用方式

## Notes

1. Pest Control Product Act and Regulations: 有害生物防制产品法案。

2. Maximum Residue Limit (MRL): 最大残留限量, 是农药在某农产品、食品、饲料中的最高法定允许残留浓度。是指优良农业措施 (GAP) 下使用农药时, 可能在食物中产生的最高残留浓度。国际上制定农产品及食品中农药最大残留限量通行的程序是根据农药的毒理学和残留化学实验结果, 结合本国居民膳食结构和消费量, 对因膳食摄入农药残留产生风险的可能性及程度进行量化评价。主要包括 4 个步骤: 确定农药每日允许摄入量 (ADI) 或急性参考剂量 (ARfD)、确定规范残留试验中值 (STMR) 和最高残留量 (HR)、进行膳食摄入评估 (包括长期和短期膳食摄入评估)、推荐农药最大残留限量。

3. Good Laboratory Practice (GLP): 良好实验室规范, 是就实验室实验研究从计划、实验、监督、记录到实验报告等一系列管理而制定的法规性文件, 涉及实验室工作的所有方面。是主要针对医药、农药、食品添加剂、化妆品、兽药等进行的安全性评价实验而制定的规范。

4. Technical material (TC): 原药, 在制造过程中得到的有效成分及杂质组成的最终产品, 不能含有可见的外来物质和任何添加物, 必要时可加入少量的稳定剂。

## Exercises

### I Answer the following questions according to the text.

1. What is the definition of pesticide?
2. How many groups can pesticides be classified into? What are they?
3. Please list the formulation types of pesticides.
4. How to name the pesticides?
5. What are the different types of adjuvants?

### II Translate the following English phrases into Chinese.

emulsifiable concentrate    contact pesticide    systemic pesticide  
mode of action    plant/insect growth regulator    soluble granules  
wettable powder    soluble powder    microcapsulated suspension  
active ingredient

### III Reading Material

#### What Are Pesticides?

Pesticides are natural or synthetic agents that are used to kill unwanted plant or an-



imal pests. While the term *pesticide* is now often associated with synthetic chemical compounds, it was not until relatively recently that synthetic pesticides came into use. Naturally occurring compounds or natural extracts have been used as pesticides since ancient times. The earliest pesticides were most likely salt, sulfurous rock, and extracts of tobacco, red pepper, and the like. It is rumored that the Napoleonic army used crushed chrysanthemums to control lice, with limited effectiveness. Petroleum oils, heavy metals, and arsenic were used liberally to control unwanted pests and weeds until the 1940s, when they were largely replaced for many uses by organic synthetic pesticides, the most famous of which is DDT.

Because the broad term *pesticide* encompasses a diverse collection of substances, an explanation of pesticide taxonomy and nomenclature is warranted. Pesticides can be classified either by target pest or by chemical identity. Classification by target pest is perhaps the most familiar. For example, insecticides are pesticides that target insects, and herbicides target plants. There are many more examples (acaricides target ticks, nematocides target nematodes, etc.). DEET, is also directed against insects and ticks, but it is unique in that it is considered a repellent rather than an insecticide. Pesticides can also be organized by their chemical class. A pesticide class is a group of pesticidal compounds that share a common chemistry. For example, all pesticides in the class organophosphate (OP) are derivatives of phosphoric acid, and all pesticides in the class organochlorine are composed of carbon, hydrogen, and chlorine.

When discussing a pesticide, it is possible to refer to the pesticidal compound itself or to the pesticide product or formulation. The compound itself is also known as the active ingredient—the chemical responsible for killing the target pest. The formulation is the manner in which the active ingredient is delivered. Typical formulations include liquids, dusts, wettable powders, and emulsifiable concentrates. The pesticide formulation includes the active ingredient as well as other ingredients. These other ingredients may be inert, such as talcum powder, or they can act to enhance the pesticidal properties of the active ingredient.

For example, some pesticide formulations include a synergist that enhances the toxic activity of the active ingredient. Other ingredients in many pesticide formulations are solvents. When considering the potential health effects of pesticides, it is important to consider the toxicity of the active ingredient as well as the other ingredients in the formulation. This is often a daunting task. Clinical reports of pesticide poisoning provide clues about the toxicity of the pesticide formulation or product, while controlled experiments involving laboratory animals may include the formulation or just the active ingredient alone.