## Subject Index

### A
- Abscission efficacy, 185
- Acetone, 163
- Adhesion modeling, spray droplet, 163
- Adjuvants, 11, 236
  - alcohol alkoxylates, 213
  - blend, 246
  - cellular toxicity, 3
  - chemistry, 221
  - emulsion adjuvant chemistries, 175
  - nonylphenol ethoxylates, 147
- Aerosol formulations, 90
- Alkylarylphenol ethoxylates, 221
- Alcohol alkoxylate, 79, 213
- Alcohol ethoxylates, 11, 79, 236
- Aliphatic fluid, 90
- Alkoxylated glyceride emulsifiers, 136
- Alkylbenzene sulfonate, linear, 79
- Alkyl diphenyl oxide disulfonate, 246
- Alkylphenols and Ethoxylates Research Council, 147
- Alkylpolyglycosides, 3, 221
- Ammonium nitrate, 11
- Ammonium sulfate, 23, 112
- Aniline point, 39
- ASTM standards
  - D 611, 39
  - D 1133, 39
  - spray characterization, 175
- Atllox, 213
- Atomizer, rotary, 197
- Atplus, 213, 236
- Best fit mathematical model, 79

### C
- Calcium, 23
- Canola oil, 136
- Canopy deposition, 185
- Castor oil ethoxylate, 136
- Cell membrane, 3
- Cellular toxicity, 3
- Ceramic tile, 90
- Citrus harvest, 185
- Clathrate urea, 236
- CMN-Pyrazole, 185
- Copolymer surfactants, 11
- Coupling agent, 112
- Crop oil concentrate, 112
- Crop protection, 213

### D
- Deltamethrin, 90
- Die expansion, 99
- Dispersant, 125
- Dispersional stability, 99
- Drift potential, 175
- Droplets, spray
  - drying time, 11
  - effect, 185
  - formation, 50
  - impaction, 50
  - modeling, spray adhesion, 163
  - size analysis, 175
  - size distribution, 197
  - spread, 11
  - velocity, 163

### E
- Electrolyte leakage, 3
- Emulsifiable concentrate, 39, 79, 136
- Emulsifiers, 112, 136
- Emulsion adjuvant chemistries, 175
- Emulsion stability, 112
- Ethoxylates, 236
  - alcohol, 11, 79
  - castor oil, 136
### 258 PESTICIDE FORMULATIONS AND APPLICATION

- **nonylphenol**, 147
- **rapeseed oil**, 136
- **triglycerides**, 136
- Experimental design, 112
- Extruded granule formulations, 125
- Extrusion, 99

#### F

- Fertilizers containing pesticides, 63
- Fertilizers, nitrogen, 11
- Fluorescence technology, 23
- Fluorescent tracer, 185
- Fluorometry, 185
- Foam control strategies, 221
- Foaming tendency, 213
- Foxtail
giant, 23
  green, 11
- Fruit detachment force, 185

#### G

- Gelling tendency, 213
- German cockroaches, 90
- Glyceride emulsifier, 136
- Glycerol, 3
- Glyphosate, 23, 246
- Gránules, 63, 99, 125
- Grasses, 246
- Green foxtail, 11
- Growth inhibition, 23

#### H

- Hansen solubility parameter, 39
- Herbicide, 11, 213, 246
  drift potential, 175
glyphosate, 246
jumbo, 63
  spray characteristics, 175
  sulfonyleurea formulation, 236
Hildebrand solubility parameter, 39
- Hydrocarbons, 39, 90
- Hydrophobe, 213
- Hydrotoping agents, 221

#### I

- Impaction processes, 50, 163
- Inerts, 147
- Insecticide penetration rate, 90
- Iron, 23

#### J

- Japan, pesticide formulation trends, 63

#### K

- Kauri Butanol value, 39

#### L

- Lambsquarters, 246
- Lamellar liquid crystalline phases, 213
- Leaf surface morphology, 163
- Lignin, Kraft, 99
- Linear alkylbenzene sulfonate, 79
- Low vapor pressure fluids, 90

#### M

- Magnesium, 23
- Methyl ester, 136
- Microcapsule, 63
- Models and modeling
  adhesion, 163
  aerial spray prediction, 197
  AgDRIFT, 197
  mathematical, 79
- Molecular weight distribution, 99
- Monobranched alcohol alkoxylates, 213

#### N

- Nightshade, 23
- Nitrogen fertilizer, liquid, 11
- Nonylphenol, 112
  ethoxylate, 147
- Nozzles, 175, 185
- NPE Environmental Management Program, 147
- NPE replacement, 213
INDEX 259

O
Orange, Hamlin, 185
Organosilicone, 246
Oscillating jet technique, 50

P
Paraffinic petroleum oil, 112
Paraffins, 90
Paste rheology, 99
Patternation, liquid, 175
Physical controlling methods, 63
Phytotoxicity, 3, 11
Polymer, 221
  styrene acrylic, 125
Polyethylene adjuvant classes, 3
Pore size distribution, 99
Potato, 3
Product development, 125

R
Rainfastness, 246
Response surface, 112
Risk assessment, 147
Rotary atomizer, 197

S
S-bioallethrin, 90
Screening method, 125
Seedling box treatment, 63
Shaker, tree trunk, 185
Solubility, 39
Solvent formulations, 90
Solvent selection, 39
Soybean, 136
Spark photography, 175
Spray application, 50
Spray characterization, 175
Spray deposition effect, 185
Spray drift, 175
Spray droplets
  drying time, 11
  effect, 185
  formation, 50
  impaction, 50
  modeling, spray adhesion, 163
  size analysis, 175
  size distribution, 197
spread, 11
velocity, 163
Spray formation, 175
Spray measurement, 197
Sprayer, air-blast tower, 185
Statistical design, 79
Styrene acrylic polymer, 125
Sulfonated Kraft lignin, 99
Sulfonation, degree of, 99
Sulfonyleurea, 236
Sulfosulfuron efficacy, 11
Surface tension, 50, 163
Surfactants, 23, 79
  agricultural, 50
  alkylpolyglycosides, 221
  castor-based, 136
  chemistry, 11
  monobranched alcohol alkoxylates, 213
  nonionic, 221, 236
  nonylphenol ethoxylates, 147
  organosilicone, 246
  penetration, 3

T
Tall oil fatty acid, 112
Tank mix-nozzle combinations, 175
Triethanolamine, 11
Trisiloxane, 246

U
Urea, 11
  clathrates, 236
U.S. Environmental Protection Agency
  agricultural formulations, 136

V
Velocity formulation, 163
Volatile organic compounds, 90
Water dispersible granules, 63, 125, 236
Water quality, 147
Weed control, post-emergent, 11
Wettable powder formulations, 125

Wetting, 221
Wind tunnel, 197
Drift measurements, 175

Yield value, 99