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SELECTED BIBLIOGRAPHY ON SELENIUM

By

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INTRODUCTION

Selenium toxicity has been of concern to states in the Western United States since the 1930s. Selenium deficiency has been of nationwide concern for a number of years also. In Wyoming, both toxic and deficient conditions have been identified. In 1987, a Governor's Task Force was created in order to investigate the status of selenium in Wyoming. In 1988, funding was made available from the Wyoming Water Research Center to acquire key literature on selenium for the use of the Task Force. In order to facilitate the use of the literature and assist selenium research in Wyoming, this bibliography and index have been generated.

All subtopics within the index are cross referenced within main topic categories. For example, all listings for specific plant species are also listed under the listing for "Plants". All "Plants" listings are included in the main topic listing of "Soil and Plant Science". This bibliography does not include all bibliographic references for selenium. Selected references that apply to ongoing or needed research in Wyoming were given preference.

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Aster: 25,34,36,40,72,85,280,341,362,489,490,528,567,578,612,
721,793

Astragalus: 17,25,27,32-40,42,43,63,72-74,85,130,242,280,283,
290,316,341,361,362,370,378,379,390,425,436,439,440,452,
459,480,489,490,520,526,528,567,587,604,612,639,663,665,
721-723,725,745,782,793

Atriplex: 25,34,36,40,280,341,362,489,528,567,612,721,722,725

Australia: 226,371

Avoidance: 757

Aycross Formation: 103,104

Bacon Ridge Sandstone: 104

Bacteria: 127,294,364,542,622,694,697,698

Baggs Area, Wyoming: 145

Baggs, Wyoming: 33,393

Barium: 127,496,794

Barium Chloride: 200

Barley: 36,239,244,246,546,567,612,654,669,721,798,809

Battle Springs Formation: 104

Baxter Shale: 103,104

Bear River Formation: 104,370,612,721

Beaver: 790

Behavior: 447,803

Belle Fourche Shale: 34,104

Bentgrass: 791

Bentonite: 64

Benzene: 86,778

Bermudagrass: 791

Beryllium: 289

BHA: 460,761

Bibliographies: 231,583,585,621

Bioaccumulation: 2,25,57,60,70,97,124,127,133,147,176,196,305,
330,352,353,401-404,426,571,577,616,623,674,735,739,778

Bioavailability: 14,15,22,45,60,124,127,162,195,203,211,340,416,
422,431,438,459,463,500,509,571,597,692,752,801

Biochemistry: 8,9,16,25,29,47,53,63,65,72,77,79,80,81,83,84,86,
105,107,110,117,120,123,124,126-129,148,149,156-158,160,164,
167,177,179,188,195,196,203,207,208,213,217-220,222,223,225,
237,243,246,250,255,257,262,280,293,294,300,307-310,323,336,
338,340,351,355,363,366,375,377,379,382,409,410,412,413,415,
416,418,421,425,429,430,436,441,444,449,450,452,453,471,472,
476,494,499,500,513,515,517-519,524,526,537,567,574,577,579,
591,592,595,604,605,606,612,624,632,633,648,650,651,654,660,
661,663,664,673,680,693-696,698,707,711,721,730,734,741,750,
766,768,769,778,783,801

Biology: 213,494,519

Biotransformation: 312,518

Birds: 17,25,47,124,147,176,179,180,252,275,284,285,295,364,369,
395,404,426,506,521,522,566,577,581,595,612,630,674,701,727,
774,775,792,793

Bismuth: 312,496,641

Blair Formation: 103,104

Blood, Animal: 14,24-26,46,62,77,79,82,86,91,93,94,102,120,124,
125,127,148,163,180,183,204,213,217,222,232,246,252-254,256,
272,280,283,299,301-303,307,320,331,348,349,351,364,371,377,
403,407,411,418,420,427,431,434,436,438,440,441,444,449,461,
466,473,475,485,486,496-500,506,533,553,556,559,561,563,570,
574,592,595,606,607,610,612,627,634,648,654,672,676,688,691,
708,718,721,722,725,726,730-732,750,752,753,766-768,778,787,
805,807,808

Blood, Human: 4,7,8,21,22,25,52,76,79-82,105,116,120,122,124,127,
131,158,159,162,181,193,195-197,206,222,229,246,257,280,309,
312,318,320,326,327,331,333,340,342,377,380,399,406,411,417,
418,421,427,435-437,443,449,456,466,476,499,500,506,507,529,
530,572,588,589,602,603,617,627,646,648,652,654,692,705,712-
714,730,742-744,758,764,768,780,785,795-797,804

Bluestem: 85,721

Bodily Fluids: see Blood, Milk, Urine

Bolus: 11,78,93,94,807,808

Bone, Animal: 168,436,623,735

Boron: 265,369,395,566,701,762

Brain, Animal: 180,579

Brazil Nuts: 553

Bridger Formation: 17,33,37,85,103,104,370,612,721

Brome: 265,754

Bromobenzene: 131,188,449,530,552,721

Browns Park Formation: 33,103,104,145,288,393,612,721

Brule Member: 370

Buffalo: 655

Buffalograss: 791

Bullet: 347,348

Cadmium: 8,15,77,79,100,157,167,169,188,190-193,213,217,229,252,
280,301,311,312,365,375,376,383,415,444,448,458,461,494,496,
497,500,513,519,561,563,564,579,597,615,648,701,718,734,735,
747,753,762,767,768,770,778

Calcium: 250,260,267,340,597

California: 25,41,49,129,132,133,151-154,214,215,284,330,367,392,
398,408,426,521,545,575,576,577,581,618,620,621,630,674,675,
707,720,736-740,755,774,775

Campbell County, Wyoming: 378,379

Canada: 97,441,546,754,790

Cancer: 27,29,61,76,79,83,98,105,116,120,122,124,127,158,160,161,
167,192,193,195-197,201,206,208-213,225,258,262,280-282,294,
312,323,324,338,342,359,366,377,382,387,415,417,418,420,421,
426,433,460,464,475,477,494,497,500,505,506,507,519,525,564,
602,627,629,636,644-647,649-652,692,699,705,712,713,749,760,
761,778-780,811

Carbohydrates: 302

Carbon: 289

Carbon County, Wyoming: 44,85,198,352,483

Carbon Dioxide: 542

CardiovascularDisease:76,124,127,312,320,406,415,420,421,432,497,
500,506,564,602,645,650,651,692,712,713,753

Carlile Shale: 17,33,103,104,612,721,786

Carp: 368,623

Casper, Wyoming: 127,742,744

Castilleja: 25,34,36,42,280,283,567,612,721,725

Catfish: 228

Cats: 124

Cattle: 11,13,14,17,34-37,71,78,91,124,127,139,157,168,175,177,
193,205,230,246,280,284,285,298,299,313,346,348,349,358,360,
362,364,370,394,439,440,472,487,489,493,499,503,529,533,549,
594,610,636,645,648,653,655,671,672,721,726,730,750,756,766,
778,796

Cells: 127,338,340,613,794

Chadron Member: 33,103,104,370,612,721

Chalk Buttes Area, Wyoming: 34

China: 127,472,529,593,795-797

Chlorate: 102

Choline: 613

Chromium: 9,203,411,496,762

Chugwater Formation: 33,39,104,370,612,721

Clover: 36,75,237,239,246,341,390,459,490,721,754,781,809

Cloverly Formation: 103,104,370,612,721

Coal: 64,97,130,315,391,468,495,497,505,516,540,567,582,778,796

Cobalt: 14,188,226,289,312,449,496,499,648,719,734,747

Cod: 596

Cody Shale: 33,37,103,104,137,370,612

Colorado: 41,60,68,85,530,679,721,724
Comandra: 34,36,280,283,612,721
Controlled Release Glass: 11
Cooking: 124,216
Copper: 14,77,79,84,102,108,127,169,177,188,203,251,257,289,301,
312,340,365,419,459,496,499,500,519,597,612,648,671,701,718,
719,734,735,747,763,784,788
Copper Mountain District: 288
Corn: 8,36,121,230,256,268,390,559,612,655,721,728
Crooks Gap District: 288
Cruciferae: 459
Cyanide: 399,415,555,556
Cysteine: 595,766
D-penicillamine: 410,413
Dakota Sandstone: 68,721
Daphnids: 547,590
Deer: 66,672,732
Deficiency: 8,13,14,22,23,25,30,34,55,76,77,79-81,83,89,90,93,94,
99,102,105,108,120,121,123-127,139,157,159-162,167,175-177,
188,193,195,196,200,208,211,225,226,237,243,246,250,255-
258,269,270,274,280-283,297,307,308,312,313,316,320,323,324,
328,329,332,342,346,349,358,360,364,366,373,374,377,385,387,
389,394,409,411,414,418-421,423,425,429,432,441,443,459,462,
472,474,497,499,500,506,508,514,523,524,549,556,564,579,594,
602,603,612,614,617,628,632-637,648,650,651,653,659,662,671,
680,692,694,703,711,712,714,728,729,732,746-748,750,766,769,
794,795,797,803,805,807,808
Deformities: 17,25,36,61,77,124,192,271,292,295,362,433,487,521,
522,544,577,608,701,721
Denmark: 240,242,715
Dental Caries: 124,193,267,387,434,497,499,500
Desorption: 584,585,668

Diet: see Food and Diet

Dietary Limit: 9,25,70,76,79,97,124,127,131,139,162,176,177,193,
232,237,274,304,305,360,364,367,377,401,417,419,421,433,434,
436,466,469,494,498-500,502-504,529,544,558,572,577,588,612,
627,643,690,735

Dimethylselenide: 219,223,310,355,412,425,542

Dinosaurs: 372

Dinwoody Formation: 17,33,39,103,104,370,612,721

Diquat: 125

DNA: 649

Dogs: 124,493

Dose-Response Relationship: 127,291,312,324,560

Drainage: 408,618,621,707

Eczema: 672

Effluents: 401

Encephalomalacia: 124,634,635,648

Environmental Chemistry: 468,588

Enzymes: 12,14,16,26,62,66,76,77,79,80,83,87,89,105,107,116,120,
121,123,124,126,127,148,156,157,159,161,167,177,188,195,202,
203,213,217,219,220,222-224,232,246,250,253,257,258,262,280,
303,304,307-309,320,338,346,366,377,384,386,387,396,412,415,
416,420,423,425,437,441,444,460,463-465,472,476,500,506,518,
525,556,574,579,589,591,592,595,603,604,612,628,632,634,637,
648-651,664,665,670,682,692-698,703,708,709,711-713,721,730,
741,742,747,748,750,761,765,767-769,771,783,784,804

Essentiality (animals): see Nutritional Requirements

Essentiality (humans): see Nutritional Requirements

Essentiality (plants): 16,25,63,72,73,242,341,342,489,497,500,
567,612,663,721,723

Evanston Formation: 612,721

Excretion, Animals: 9,24,77,80,81,124,125,177,196,211,217,219,
220,234,237,261,274,280,301,306,312,341,348,410,413,420,425,
433,436,439,440,449,459,466,482,485,497,498,500,509,514,518,
550-552,570,606,612,623,648,691,721,750,766,768,778

Excretion, Humans: 79,81,124,127,131,181,195,196,220,249,260,261,
280,312,318,326,327,331,333,418,420,433,436,443,499,506,529,
530,558,572,588,598,599,603,677,678,713,721,724,742-744,753,
795,796,811

Eyes: 127,249,608,692

Fall River Formation: 288

Fatty Acids: 124,163

Feces, Animal: 9,77,80,177,211,234,280,301,312,341,348,436,449,
459,485,497,500,518,570,612,648,691,750,766,778

Feces, Human: 260,333

Ferris Formation: 33,40,103,104,370

Ferroselite: 259,317

Fertilizer: 22,25,99,101,124,127,200,211,226,241,242,244,246,373,
381,641,683,750,798

Fescue: 791

Finland: 22,127,320,373,374,381,692,798

Fish: 2,25,28,47,53,57,92,97,124,147,176,183,206,228,275,285,302,
303,305,306,350,353,368,369,391,395,400-404,426,458,483,501,
506,521,547,566,571,581,596,612,616,623,630,649,656,674,679,
685-688,701,721,739,757,762,774,775,778,792,793

Fish and Wildlife: 2,8,17,25,28,34,47,53,57,66,92,97,124,132,147,
153,176,179,180,183,206,228,234,252,261,275,284,285,295,302,
303,305,306,330,350,353,364,367-369,391,395,400-404,426,458,
483,500,501,506,509,519,521,522,547,566,571,577,581,595,596,
612,616,620,623,630,649,656,672,674,675,679,685-688,701,717,
721,727,732,735,739,757,762,774,775,778,790,792,793

Fixation: 241,532,654

Fluorine: 102,641

Fly Ash: 19,97,121,265,401,582

Focal Symmetrical Poliomalacia: 286

Food and Diet: 8,12-14,20,25,31,45,52,58,60,71,79,81,90,119,123,
124,126,127,131,139,162,177,191,192,194-196,203,206,216,218,
235,237,246,272,274,285,286,305,312,313,321,322,331,342,344,
345,373,382,383,387,396,411,415-418,420,422,426,433,453,463,
466,472,482,484,487,497,499,500,501,505,506,519,529,538,544,
546,558,559,574,579,588,594,602,603,606,615,625,627,631,633,
635,643,648,657,678,699,713,716,721,722,728,729,740,750,760,
778,795-797,801

Fort Union Formation: 33,42,103,104,288,370,612,721

Fossil Fuels: 64,97,130,280,315,391,401,468,495,497,505,516,540,
567,582,778,796

France: 172,394,506

Free Radicals: 160,784,804

Fremont County, Wyoming: 44,85

Frontier Formation: 17,33,103,104,612,721,786

Fruit: 643

Fruitland Formation: 68

Fungi: 315,526,567

Game Animals: 66,285,717,792

Gannett Group: 103,104,612,721

Gas Hills District: 288

Gas Hills, Wyoming: 289,393

General Information: 8,25,55,71,83,119,124,130,132,133,157,182,
194,196,209,237,246,258,398,408,468,499,500,505,612,619,
626,654,666,693,755,792,806

Genitals, Animals: 298,494

Genotoxicity: 649

Geochemistry: 17,25,59,64,68,69,102,115,127,129,130,135,136,142,
150,153,164,184,189,194,196,200,214,241,287-289,312,317,328,
330,342,343,369,374,379,390-393,395,433,436,468,492,494,495,
497,500,505,516,540,566,567,577,581,612,630,654,701,707,718,
719,721,750,762,778,793,802

Geology: 17,25,33,34,37-44,49,64,68,71,85,103,104,127,130,132,
136,137,145,146,150,153,187,189,198,200,231,237,241,259,287-
289,312,315,341,342,364,369,370,372-374,378,379,390-393,395,
403,433,436,468,487-490,497,500,505,516,540,565-567,577,581,
612,620,630,638,639,654,701,704,721,722,762,786,793,796,802

Geomorphology: 379,490

Glutathione: 12,124,424,489,799

Glutathione Peroxidase: 12,14,16,26,62,66,76,79,80,83,87,89,105,
120,123,124,126,127,148,156,157,159,161,167,177,188,195,202,
203,219,220,222-224,232,246,250,253,257,262,280,303,304,307-
309,320,346,366,377,386,396,412,415,416,420,423,437,464,465,
472,476,500,506,525,556,574,579,589,591,592,603,628,632,637,
648,650,651,694,697,698,703,708,709,711-713,730,741,742,747,
748,750,765,768,771,783,804

Glycosides: 673

Goats: 71,385

Gold: 496

Goose Egg Formation: 103,104,612

Grasses: 34,85,127,246,265,362,364,390,436,459,489,528,567,587,
593,612,654,721,750

Grayia: 40,612,721

Greasewood: 352,587,800

Great Lakes: 306

Green River Formation: 17,104,370,612

Greenhorn Formation: 17,104

Grindelia: 34,36,40,280,362,489,490,528,567,612,721

Gun Blueing: 456

Gutierrezia: 34,36,280,490,612,721

Gypsum Spring Formation: 103,104,612

Hair, Animal: 232,253,254,272,313,364,371,418,434,436,439,440,
441,449,498,612,730,756,772,807

Hair, Human: 25,127,172,181,195,312,318,326,327,377,417,418,436,
443,447,500,529,530,564,572,602,648,743,744,795-797

Half Life(biological):312,426

Halogeton: 361,587,782,800

Hanna Formation: 104,370

Haplopappus: 17,25,34,341,436,459,489,528,567,612

Harebell Formation: 104

Harts Basin, Colorado: 679

Herbicides: 125,415,648,735,778

High Altitude Effects: 328

Hilliard Shale: 33,37,103,104,370,612,721

Holland: 252

Hoof: 371,487

Horse:71,124,127,139,193,304,364,370,371,472,487,493,499,529,691,
692

Human Health: 4,5,7,8,10,12,17,20-22,25,27,31,48,52,54,68,70,76,
79-83,86,97,98,105,108,116,119,120,122,124,127,131,133,153,
157-160,162,167,171-173,181,192,193,195,196,201,206,208,210-
213,222,225,229,235,246,249,257,258,260-262,267,274,278-
280,283,285,309,312,316,318,320,326-329,331,333,334,337,340,
342,359,366,367,373,375-377,380,382,383,387,399,406,411,414-
421,426,427,432,433,435,437,443,447,456,460,466,472,475,478,
481,482,494,497,499,500,505-507,511,519,524,525,529,530,558,
560,564,572,574,577,579,588,598-600,602,603,612,614,615,617,
627,628,633,636,644,645,648-652,658,676-678,689,692,699,703,
705,712-714,721,724,742-744,748,749,753,758,760,764,777-
780,785,792,795-797,801,811

Hydrogen Selenide: 25,48,123,131,173,193,219,220,249,366,505,548,
648,699,702

Hydrology: 49,68,142,151,330,369,395,566,577,581,620,630,701,738,
762,786

Hydrothermal: 189

Hymenoxys: 36

Iceland: 374

Idaho: 41,146

Immune System: 29,124,127,213,338,364,366,375,377,420,453,506,564,
659

India: 653,655

Industry: 130,193,249,405,466,468,505,519,612,666,699,778

Inorganic Chemistry: 3,16,25,48,56,67,114,124,127,130,138,151,
166,182,200,217,233,236,249,280,312,339,342,390,408,436,497,
500,518,519,573,580,582,584,612,645,648,690,702,721,776,777,
783,793

Insecticides: 17,489

Insects: 721

Invertebrates: 60,70,97,147,176,402,547,590,735,778,788

Inyan Kara Group: 104,145,288

Iodine: 200,564

Iodipamide: 125

Iowa: 448

Iron: 23,77,84,86,127,169,188,191,203,251,289,365,459,481,496,
597,612,654,734,784

Irrigation: 34,49,132,403,408,530,545,577,618,674,675,707,736-
738

Isotope Tracers: 334,801

Kansas: 721

Kashin-Beck Disease: 124,127,421

Kendrick Project: 137,786,793

Kentucky: 97

Keshan Disease: 124,127,417,421,472,692,795,797

Kirtland Shale: 68

Kwashiorkor: 124,421

L-Value: 247

Laboratory Animal Research: 17,23,25,26,29,30,35,46,52-55,59,61,
62,65,71,77,79-81,83,84,113,118,120-127,131,143,144,156-
158,173,174,176,177,188,191,193,195-197,203,204,213,217,222,
225,229,250,251,253,255,262,269-272,274,278,280-283,293,294,
301,307,310-312,323,324,331,351,354,359,364,366,375,396,410,
413,420,423-425,428,431,434,438,449,451,453,461,464-466,475-
477,487,493,494,496,497,499,500,506,508,512,514,523,529,550-
557,559,562,563,574,579,605-607,609,611-613,617,627,629,632-
634,647-651,657,659,699,714,721,722,730,734,741,749,751,752,
761,766-768,770,772,778,780,799,804

Lakota Formation: 145,288,370

Lance Formation: 33,42,103,104,612,721

Landscape Distribution: 490

Landslides and Distribution: 490

Laramie, Wyoming: 85

Law: 494,501,675

Leaching: 19,248,401,654

Lead: 15,50,102,167,191,192,312,319,344,365,375,376,383,415,448,
458,459,482,496,519,597,615,648,718,747,753

Lead Absorption: 482

Legal Limits: 501

Legal Aspects: 408

Lettuce: 100,268

Lewis Shale: 33,68,103,104,370,612,721

Lime Neutralization: 446

Limestone: 17

Linseed Meal: 157,188,280,409,410,413,424,449,459,497,498,557,673

Linseed Oil Meal: see Linseed Meal

Lipid Peroxide: 515,709

Lithium: 641

Little Mountain District: 288

Livestock and Domestic Animals: 8,11,13-15,17,24,25,34-37,50,55,58,59,71,77-79,84,89-91,93-95,102,103,105,113,120,121,123-127,131,139,148,157,163,168,169,174,175,177,178,188,193,196,205,210,213,217,226,229,230,232,237,246,250,253,254,256,271,280,283-286,290,292,293,295,297-301,304,307,308,312,313,316,319,330,332,341,342,346,348,349,358,360,362,364,366,370,371,377,385,389,390,394,405,407,420,425,433,436,439-441,449,451,453,459,462,469,471-474,485-487,489,491,493,494,497-500,502-504,506,508,519,523,524,526,528-530,533,544,549,570,578,587,594,606,608-610,612,617,634-637,645,648,651,653-655,671,672,677,691,692,694,699,700,711,721,722,725,726,728-731,745,747,750,756,766,769,771,773,778,786,787,792,796,805,807,808

Locoism: 37

Locoweed: 290,480,587,745

Lysite, Wyoming: 33,34,44,187

Machaeranthera: 25,34,36,40,280,341,436,459,489,528,612,721

Magnesium: 340,496,597

Maize: 230,655

Mammary Glands: 298

Mancos Shale: 68

Manganese: 77,84,126,169,191,192,203,365,496,597

Marine Waters: 252

Medicine Bow Formation: 17,38,40,44,103,104,370,612,721

Meeteetse Formation: 104

Mentzelia: 25,721

Mercury: 8,15,,26,47,54,59,79,80,83,92,102,157,167,179,180,188,190,191,206,213,217,218,229,237,252,263,278,280,301,312,350,368,369,375,376,383,395,415,428,444,448,458,466,492,496,497,500,513,519,561-564,566,571,579,596,612,615,648,670,703,718,734,735,747,762,767,768,778,790

Mesaverde Group: 68,103,104,370,612,721

Metabolism: 8,14,16,46,52,54,63,72,79,81,83,84,102,105,107,113,
118,122-125,127,148,156,157,161,162,164,165,167,177,181,188,
195,196,198,208,217,219-221,223,225,226,234,241,246,250,257,
260-263,267,271,280,283,300,302,306,308,309,312,324,333,334,
338,363,384,399,410,412,413,416,424,433,435,441,443,444,449-
451,467,476,477,489,494,497-500,506,509,518,519,524-526,531,
532,551,567,579,591,592,602,604,610,617,632,633,637,645,648,
651,654,663,665,671,682,691,713,729,734,741,750,767-770,773,
795,801

Metalloids: 567

Methane: 363,542

Methanogen: 384

Methionine and Selenomethionine: 79,86,124,127,157,280,300,355,
409,410,413,425,449,471,537,605,624,661,711,721,766

Methylation: 107,110,112,123,129,165,219,220,223,306,354,355,363,
408,412,443

Microbial Transformations: 165,567

Microfungi: 315

Microorganisms: 18,25,65,110,112,127,157,164,165,167,176,217,273,
294,315,357,364,384,412,425,450,494,497,500,526,542,567,591,
622,665,694,697,698,741,750,766,778

Milk, Animal: 14,123,246,297,298,313,394,420,478,491,498,518,588

Milk, Human: 127,326,327,478,588,600,658,778

Mineral Supplements: 11,13-15,78,89,93,94,105,127,139,172,177,
208,210,226,246,250,256,257,285,299,324,342,347-349,417,420,
433,464,499,506,524,549,570,594,636,711,731,747,807,808

Mining and Reclamation: 19,64,170,198,343,403,446,495,569,719

Minnow: 53,57,757

Miocene Rocks: 103,104

Missouri River Basin: 571

Modelling (Human Uptake): 466

Mollusks: 234

Molybdenum: 9,14,37,77,84,102,265,289,365,519,718,719,722,781

Monitoring (selenium): 181

Montana: 41,85,146,369,395,448,721

Moreno Formation: 577

Morrison Formation: 17,42,103,104,370,612,721

Mowry Shale: 33,103,104,612,721

Muddy Sandstone Member: 103,104,612

Multiple Sclerosis: 4,124,127,579

Muscle, Animal: 8,14,28,55,60,92,203,217,246,306,342,346,349,394,
402,418,420,436,440,444,449,483,494,498-500,509,563,606,623,
670,688,708,721,728,730,735,768,778

Muscle, Human: 329,418,436,456,676

Muscular Dystrophy: 14,124,255,299,316,329,349,420,472,486,506,
612,634,635,645,694,711

Mutations: 338,359

Mycotoxin: 124,125,148,192

Myopathy: 374,472

Natrona County, Wyoming: 85,127,137,786

Nebraska: 85,274,448,677,678,721

Nevada: 41,392,581,721

New Mexico: 41,85,145,721,743,744

Newspaper Articles: 284,285

New York: 97,337

New Zealand: 127,189,381,473,494,589,603,692,712,713,758

Nickel: 365,496,597

Niobrara County, Wyoming: 44,352

Niobrara Formation: 17,33,37,40,42,85,103,104,137,364,370,487,
490,565,612,721,722,786

Nitrates: 369,701,782

Nitrites: 127,455,692

Nitro Compounds: 782

Nitrogen: 654

North Carolina: 97,401,402,688

North Dakota: 41,448

North Park Formation: 33,370,612,721

Norway: 388

Nutritional Requirements: 8,9,13,14,16,20,25,70,76,77,79,80,97,
105,113,124,127,139,157,162,176,177,191,193,200,202,207,208,
211,213,217,228,237,246,250,262,274,279,303-308,313,331,342,
360,377,387,405,417,419-421,433,434,441,443,469,478,491,498-
500,503,504,508,524,529,530,549,558,564,567,572,577,588,594,
612,614,628,643,645,691,692,713,728,788,811

Oats: 36,72,246,253,546,612,654,721,798

Oil: 497

Oklahoma: 145,392,721

Oocytes: 714

Donopsis: 17,33,34,36,37,40,42,43,280,283,362,370,612,665,721,
722

Oregon: 41

Organic Chemistry: 3,16,25,107,114,117,124,127,182,200,217,221,
249,312,325,336,339,342,390,408,430,436,454,457,470,497,500,
517,519,582,612,645,648,661,721,741,783,810

Organs, Animal: 14,15,17,24-26,28,31,46,50,55,60-62,71,76,77,79,
82,89,93,97,102,120,122-125,127,131,143,144,157,176,178,180,
190,192,193,195,196,203,213,217,222,223,232,246,253,263,272,
280,281,283,286,290,295,297,298,301-303,305-308,310,312,313,
319,324,331,342,347-349,351-353,367,369,371,377,394,395,403,
410,411,413,415,418,420,424,428,431,433,436,438-441,444,449,
461,466,471,473,475,477,481,483,485-487,494,496-500,506,509,
512,514,519,525,533,544,553,555,556,559,561,563,566,570,571,
574,577,579,592,596,606-610,612,613,623,630,632-634,636,637,
648-651,654,670,672,674,676,685-688,701,708,721,722,728,730,
731,734,735,741,750,752,766-768,770,771,772,774,775,778,787,
790,804

Organs, Human: 5,25,76,79,122,124,127,131,181,192,195,249,280,
283,320,326,327,380,411,418,436,456,466,499,500,506,588,
644,648,654,676,721,753

Otter: 790

Oxalates: 587,782,800

Oxygen: 225

Oxytropis: 480,520

Palladium: 496

Panoche Formation: 577

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Paraquat: 125,415,648,735,778

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Pedocals: 17

Pellets: 13,14,127,177,246,250,299,349,499,524,570

Pennsylvania: 145

Pentane: 709

Peroxidation: 124,647

Pesticides: 344

pH: 19,238,317,746

Phosphate: 73,74,663

Phosphoria Formation: 17,33,39,44,103,104,146,150,370,612,721

Phosphorus: 48,99,200,211,654

Pierre Shale: 17,33,37,42,85,103,104,370,487,490,638,639

Plankton: 70,97,401,402,616

Plants: 1,8,9,16,17,24,25,27,32-45,53,60,63,71-75,85,99,100,104,
121,124,127,130,133,147,177,188,198,200,211,217,226,230,237-
247,253,256,265,266,268,269,272,280,283,284,290,312,313,315,
316,330-332,341,342,352,361,362,364,369,370,378,379,390-
392,395,401,412,425,429,436,439,440,452,459,479,480,487-
490,494,497,499,500,505,506,510,519,520,523,524,526,528,531,
536,537,543,546,551,552,559,566,567,578,581,587,593,604,612,
630,639,640,643,649,653-655,663,665,667,669,674,681,683,684,
699,701,721-723,725,728,735,745,746,750,754,762,778,781,782,
788,791-793,796,798,800,809,811

Platinum: 312,496

Poison Basin District: 288

Poison Buttes Area, Wyoming: 34,44

Poison Draw Area, Wyoming: 187

Polioencephalomalacia: 17,205,439,440,

Poliomalacia: 529

Poliomyelomalacia: 286,529,787

Pollution: 543,567,582,699

Potatoes: 268

Poultry: 14,17,25,34,50,58,59,77,84,89,90,95,120,121,124-127,139,
157,163,168,178,188,193,230,271,280,295,301,308,313,319,332,
360,362,451,453,472,473,487,489,493,494,499,503,504,529,544,
549,612,634-637,645,700,721,722

Powder River Basin, Wyoming: 145,315,343,379,540

Power Industry: 97,401,582

Power Plant Cooling Reservoir: 97,402

Preuss Sandstone: 612,721

Primates: 124,434

Protein: 124,127,188,217,260,415,449,489,607,648,694,721,769

Protozoan: 65

Pryor Mountain District: 288

Pumpkin Buttes Area, Wyoming: 145

Queensland: 371

Rabbit: 124,113

Raccoon: 790

Raya: 667

Remote Sensing: 378

Removal (from water): 689,690

Reproduction: 66,79,91,124,127,174,246,269,270,280,295,298,338,
396,401,415,420,433,497,499,500,522,524,590,611,612,648,688,
714,750,799

Resins: 706

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Review Article: 8,9,14-17,22,25,27,55,63,70,71,76,77,80,83,103,
113,119,120,123,124,127,130,131,147,157,158,167,168,174,177,
182,188,192-194,196,197,200,211,212,222,225,234,237,242-
246,261,262,280,283,306,312,313,320,330,332,342,358,362,364,
366,377,387,391,405,409,414,415,418,420,433,436,439,441,443,
449,459,473,478,488,489,494,497-500,505-508,518,520,523,524,
526-530,567,572,586,588,591,598,602,612,627,628,645,648,650,
651,654,655,662,670,671,676,699,711,712,735,747,753,767,777,
778,792,793,803

Risk Assessment: 710

RNA: 127,353,692

Rock Springs Formation: 104

Rotifers: 53

Rye: 246,654,721

Ryegrass: 238,244,459,612,781

Salmonella: 294,364,

Sample Design: 51,369,497,527,535,599,601,630,762

Samsil Soil Series: 379

Sandstone: 17

San Jose Formation: 68

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Scandinavia: 243

Scotland: 94

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Selenides: 219,220

Selenites: 399

Selenium Dioxide: 505,580

Selenomethionine: see Methionine and Selenomethionine

Semen: 91

Semen Buttes Area, Wyoming: 34

Sesame Seeds: 331

Shale: 17,802

Sheep: 11,13,14,17,34-37,71,77,93,94,102,124,139,157,168,169,174,
175,177,188,193,217,226,230,246,250,280,298,300,308,313,341,
358,360,362,370,389,439,462,472,473,486,489,493,499,503,529,
549,570,578,594,606,608,636,645,648,672,711,721,725,730,731,
745,750,766,769,771,773,778,805,807,808

Shingle Soil Series: 379

Shirley Basin, Wyoming: 287,289

Sideranthus: 25,34,36,40,721

Silver: 79,177,188,213,312,459,496,513,579,612,648,734,735,747,
767,768

Skin, Animal: 25,60,124,283,483,650,672,772

Skin, Human: 25,76,79,122,124,127,249,283,380,443,529,530,572,
721,796

Sodium Selenite: 355,544,547

Soil: 1,3,9,17,25,27,34,37,39-45,64,85,97,100,101,104,110,124,
127,130,141,164,177,184,185,194,198,200,215,226,237,241-
243,245-248,264,273,284,296,312,314,315,330,341,342,352,357,
362,369,370,373,374,378,379,388,389,391,392,395,448,459,487-
490,492,494,497,499,500,505,506,520,523,524,526,528,531,532,
536,542,548,566,567,571,581,582,587,593,612,622,630,639,641,
642,653-655,663,668,673,684,718,720-722,746,750,754,758,762,
777,778,781,789,792,793,796,809

Soil and Plant Science: 1,3,8,9,16,17,24,25,27,32-45,53,63,64,71-
75,85,97,99,100,101,104,110,121,124,127,130,133,141,147,164,
177,184,185,188,194,198,200,211,215,217,226,230,237-248,253,
256,264-266,268,269,272,273,280,283,284,290,296,312-316,330-
332,341,342,352,357,361,362,364,369,370,372-374,378,379,381,
388-392,395,412,425,429,436,439,440,448,452,459,479,480,487-
490,492,494,497,499,500,505,506,510,519,520,523,524,526,528,
531,532,536,537,542,543,546,548,551,552,559,566,567,571,578,
581,582,587,593,604,612,622,630,639-643,649,653-655,663-
665,667-669,673,674,681,683,684,699,701,718,720-723,725,728,
735,745,746,750,754,758,762,777,778,781,782,788,789,791-
793,796,798,800,809,811

Solubility: 101,584

Soluble Glass: 78,93,347,348,807,808

South Africa: 71

South Carolina: 97

South Dakota: 1,41,85,145,274,288,318,364,372,392,448,487,490,
529,536,538,558,565,638,677,678,721,723

Soybeans: 256,268

Sperm: 124

Stanleya: 17,25,33,34,36,37,39,40,42,43,130,280,283,341,362,436,
452,459,489,490,526,528,567,612,665,721,722,725

Steele Shale: 33,37,40,42,85,103,104,137,370,612,721,786

Strontium: 496

Sudden Infant Death: 316,425,481,497,507,712

Sulfides: 317

Sulfur: 16,17,77,139,149,157,167,177,179,188,189,200,217,226,239,
248,280,289,293,340,363,365,370,391,393,412,425,449,450,457,
459,461,489,494,497-500,511,612,654,663-665,667,697,718,721,
722,766,773,781

Sundance Formation: 33,43,103,104,612,721

Sunfish: 685-687

Swainsona: 520,587

Swainsonine: 290,480,587

Sweden: 346

Sweitzer Lake, Colorado: 679

Swine: 13,14,17,124,127,139,148,157,168,174,188,193,230,232,246,
253,254,256,280,286,290,293,297,360,407,471-474,485,487,489,
491,499,504,529,549,617,645,728-730,750,786,787,796

Switzerland: 506

Synergism and Antagonism: 8,14-16,26,47,50,54,59,71,73,74,77,79,
80,83,84,86,95,99,100,124,125,127,131,148,157,167,169,177,
179,180,188,190,193,197,206,212,213,217,218,226,229,237,251
252,263,278,280,293,301,302,311,312,319,324,338,340,346,355,
365,368,370,399,409,410,413,415,426,428,441,442,444,449,455,
459,461,466,482,485,489,492,496-498,500,511,513,514,530,555-
557,559,561-564,579,595,596,612,613,629,633,644,648,654,656,
663,665,667,670,692,703,711,718,721,722,733-735,742,753,766-
768,770,773,778,784,788,799

Teleangiectasis: 609

Tellurium: 37,48,77,190,193,249,263,312,319,461,493,505,648,722,
747,811

Teratogenesis: 174

Texas: 41,145,762

Thallium: 102,157,188,217,312,496,561,648,767

Thaynes Limestone: 17,104,612,721

Thermopolis Shale: 103,104,612,721

Timothy: 265,341,754

Tin: 127,261,319,496,692

Tissues, Animal: 8,14,15,17,24-26,28,31,46,50,55,60-62,71,76,77,79,82,89,92,93,97,102,120,122-125,127,131,143,144,157,168,172,176,178,180,190,192,193,195,196,203,213,217,222,223,232,246,253,254,263,272,280,281,283,286,290,295,297,298,301-303,305-308,310,312,313,319,324,331,342,346-349,351-353,367,369,371,377,394,395,402,403,410-413,415,417,418,420,424,428,431,433,434,436,438-441,444,447,449,461,466,471,473,475,477,481,483,485-487,494,496-500,506,509,512,514,519,525,533,544,553,555,556,559,561,563,566,570,571,574,577,579,592,595,596,606-610,612,613,623,630,632-634,636,637,648-651,654,670,672,674,676,685-688,701,708,721,722,728,730,731,734,735,741,750,752,756,766-768,770-772,774,775,778,787,790,804,807

Tissues, Human: 5,8,25,76,79,120,122,124,127,131,181,192,193,195,249,280,283,312,318,320,326,327,329,377,380,411,418,436,443,447,456,466,481,499,500,506,529,530,588,602,644,648,654,676,721,743,744,753,795-797

Tobacco: 124,534

Tolerance: 500,503,504

Toxicity: 2,14,15,24,25,28,34,35,37,48,53-55,59,60,62,63,70-72,76,77,79,80-82,86,96,97,102-105,119,124,125,127,131,139,157,161,162,167,168,171,173,174,176-178,181,183,188,192,193,196,200,204,208,211,225,229,232,237,246,253,254,258,261-263,269-272,274,280,281,283,286,290,292-295,297,298,302,303,305-307,310,311,313,316,319,323,324,328,332,337,338,342,346,351,353-355,358,360,362,364,368-371,377,380,382,383,390,394,395,401,403-405,409,410,413,415,418-421,426,433,434,436,439-441,443,444,449,456,459,466,471,480,482,486,489,493,494,497-500,503-506,514,518-522,524,528-531,533,544,547,553-555,557,559,562,564,566,572,574,578,579,586-588,590,595,598,602,606,610,612,618,623,629,630,640,643,645,648,649,653,664,667,670,679,680,686,687,692,694,699,701,711,714,717,721,722,725,726,728,731,734,735,739,745,750,751,753,756,778,782,785,787,796,799,800,803,811

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Treatment (toxicity): 293

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Trimethylselenonium: 531,532,551

Trout: 2,302,303,306,353,368,483,506,509

Tuffs: 187

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Tumors: 124,127,464,465,475-477,629

Tungsten: 77

Twin Buttes Reservoir, Wyoming: 60

Ubiquinone: 425

Uinta County, Wyoming: 85

Uinta Formation: 612,721

United Kingdom: 716,719

Uptake: 45,57,71,198,234,237,239,241,247,305,330,523,567,579,
665,721,781,791

Urals: 802

Uranium: 64,145,170,259,288,289,317,343,393,495,569,701

Urine, Animals: 9,24,77,80,81,124,125,177,211,217,220,234,274,
280,301,312,420,425,433,436,439,440,449,459,466,482,497,498,
500,514,518,550-552,606,612,648,691,721,750,766,768,778

Urine, Humans: 79,81,124,127,131,181,195,220,249,260,280,312,318,
326,327,331,333,418,420,433,436,443,499,506,529,530,558,572,
588,598,599,603,677,678,713,721,724,742,744,753,795,796,811

Uses: 25,33,194,196,312,342,405,436,468,588

Utah: 41,43,85,97,145,146,701,721

Ute Indian Reservation: 68

Vanadium: 15,289,493

Vegetables: 37,100,133,237,268,341,390,425,510,612,643,654,721,
722,750

Venezuela: 331,530

Vitamin A: 61,324,481,760

Vitamin C: 12,61,86,127,191,249,324,647,760,784

Vitamin E: 9,14,23,30,61,66,77,83,84,98,105,113,118,120,121,124-
127,139,156-158,175,177,191,193,208,213,217,218,237,255,256,
262,278,280,282,297,303,306-308,313,323,324,329,346,377,387,
394,407,414,415,425,441,449,453,471,472,474,481,491,494,497,
499,500,506,512,519,592,594,633-635,637,647,650,651,659,692,
708,709,711,729,732,741,747,748,750,760,772,779,784,799

Volatilization: 1,25,73,107,110,112,123,129,164,165,176,217,219,
241,247,248,273,315,341,357,412,425,459,518,532,563,654,656,
766,809
Wagon Bed Formation: 44,103,104,187
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Wasatch Formation: 37,42,104,145,259,288,370,378,379
Water: 2,17,19,25,28,34,37,42,49,60,68,97,110,112,124,127,129,
130,132,135,137,140-142,151,152,154,170,172,176,189,194,196,
199,214,227,252,274,284,285,305,306,312,314,315,330,343,367,
369,387,388,391,395,397,401-404,426,436,445,448,459,476,488,
492,495,500,505,526,530,541,545,554,566,571,575-577,581,586,
588,601,618,630,660,674,675,679,689,690,701,721,724,735,739,
742-744,750,753,762,774,775,777,778,786,792,793,796
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Wheat: 1,36,63,85,100,230,246,253,268,269,272,290,370,390,459,
497,531,537,546,551,552,559,612,654,655,683,721,722
Wheatgrass: 85,490,612,639,721,791
White River Formation: 103,104,490,612,721
Willwood Formation: 33
Wind River Formation: 42,103,104,287,288,393,612,721
Wine: 506
Wyoming: 17,19,25,33-44,60,85,103-105,127,130,137,145,146,150,
153,187,198,200,259,274,284,287-289,315,343,352,370,372,378,
379,390,392,393,397,436,439,440,459,483,529,540,566,569,604,
606,612,648,663,677,721,722,723,742,744,785,786,792,793
Xenobiotics: 161,415
Xylorrhiza: 17,25,33,34,36,37,40,42,43,85,280,283,362,370,439,
440,567,578,612,665,721,725
Yeast: 124,178,255,351,459,772
Yugoslavia: 230
Zinc: 77,84,108,127,169,188,190,191,203,229,257,340,344,365,419,
446,461,494,496,563,597,615,629,669,671,672,701,718,747,762,
770,784

