Biological Activities for Extracts of Fedegoso (Cassia occidentalis)

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Aerial Parts South Africa	Toxic Effect (general)	Not stated	GI Ewe	14.0 kg	Equivoca I	Digestive disturbances as a result of being drenched and not due to the plant being toxic.	W03691
Leaf India	Toxic Effect (general)	ETOH(95%)Ext	IP Mouse	100.0 mg/kg	Inactive	No toxic effect or mortality.	K17388
Leaf India	Toxic Effect (general)	H2O Ext	Oral Mice	100 mg/kg	Inactive	No toxic effect or mortality.	AK1002
Root Congo	Toxic Effect (general)	ETOH Ext CHCL3 Ext H2O Ext	Oral Mice Oral Mice Oral Mice	500 mg/kg 500 mg/kg 500 mg/kg	Inactive	No toxic effect or mortality with any of the extracts as a single dose of 500 mg/kg or given twice weekly for 4 weeks.	AK1003
Aerial Parts UK	Toxic Effect	Rations	Rat	1% 5%	Inactive Inactive	No neurotoxicological or neuro- behavioural effects were seen.	AK1015
Aerial Parts India	Toxic / Genotoxic Effect	H2O Ext	Mice	50 mg/kg 250 mg/kg 500 mg/kg	Inactive	No toxic effect or mortality.	AK1007
Leaf India	Antimutagenic Activity	Not stated	Mice	Not stated	Active	Antimutagenic activity against benzo(a)pyrene and cyclophosphamide.	AK1002
Leaf India	Antimutagenic Activity	H2O Ext	Ames Test	Not stated	Active	Inhibited mutagenicity of aflatoxin B1 and benzo(a)pyrene.	AK1004
Leaf India	Antimutagenic Activity	H2O Ext	Mice	50 mg/kg 250 mg/kg 500 mg/kg	Active	vs. benzo(a)pyrene and cyclophosphamide mutagenisis. Results suggests its antimutagenic activity is by modulating the xenobiotic activation and detoxification mechanisms.	AK1007
Entire Plant India	Cytotoxic Activity	ETOH - H2O (1:1) Ext	Cell Culture	ED50: >20 mcg/ml	Inactive	Ca-9kb.	A03335
Leaf + Stem Jamaica	Uterine Stimulant Effect	ETOH(95%)Ext	Rat	3.3 ml/liter	Weak Activity	Uterus (unspec.cond).	A03360

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Leaf + Stem Jamaica	Uterine Stimulant Effect	H2O Ext	Rat	3.3 ml/liter	Weak Activity	Uterus (unspec.cond).	A03360
Leaf + Stem Jamaica	Hypotensive Activity	ETOH(95%)Ext H2O Ext	IV Dog IV Dog	0.1 ml/kg 0.1 ml/kg	Active Active		A03360
Leaf India	Hemolysis Inhibitory Activity	Powder	IG Human Adult	10.0 mg/ml	Active	RBC.	T15403
Entire Plant India	Antihepatotoxic Activity	Hot H2O Ext	Oral Human Adult	Not stated	Active		T06410
Entire Plant India	Antihepatotoxic Activity	Not stated	Oral Human Adult	Variable	Active		T06408
Leaf India	Antihepatotoxic Activity	ETOH(95%)Ext	IG Rat	100.0 mg/kg	Active	vs. thioacetamide-induced hepatotoxicity Effectiveness assayed by changes in serum parameters- SGOT, SGPT, SALP, GH.	K17388
Leaf India	Antihepatotoxic Activity	ETOH(95%)Ext	IP Rat	100.0 mg/kg	Active	vs. ccl4-induced hepatotoxicity Effectiveness assayed by changes in serum parameters- SGOT, SGPT, SALP, GH.	K17388
Leaf India	Antihepatotoxic Activity	Pet Ether Ext	IG Rat	100.0 mg/kg	Inactive	vs. thioacetamide-induced hepatotoxicity.	K17388
Not Stated India	Hepatotonic Activity	Not stated	Not stated	Not stated	Active	Modulated hepatic drug metabolizing enzymes.	AK1002
Not Stated India	Hepatotonic Activity	H2O Ext	Mice	50 mg/kg 250 mg/kg 500 mg/kg	Active	Reduced level of cytochrome p450 and elevated levels of glutathione s-transferase activity and glutathione content in the liver.	AK1007
Leaf India	Hepatoprotective Effect	H2O-ETOH Ext	IG Rat	Not stated	Active	Protected against paracetamol- induced liver damage and ethyl alcohol-induced liver damage.	AK1008

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Not Stated India	Immunostimulant Activity	H2O Ext	Mice	100 mg/kg	Active	vs. cyclophosphamide-induced immunosuppression. Improved humoral responses; enhanced plaque forming cell; reversed depressed bone marrow cell counts. Results reported were significant (p<0.01).	AK1002
Entire Plant India	Anti-inflammatory Activity	Hot H2O Ext	Oral Human Adult	Variable	Active		T06320
Leaf India	Anti-inflammatory Activity	Powder	IG Rat	1000 mg/kg	Active	vs. carrageenin-induced pedal edema.	T15403
Leaf India	Anti-inflammatory Activity	Powder	IG Rat	1000 mg/kg	Active	vs .cotton pellet granuloma.	T15403
Leaf India	Anti-inflammatory Activity	Powder	IG Rat	1000 mg/kg	Active	vs. cotton pellet granuloma. Inhibited gamma-glutamyl transpeptidase.	T15403
Leaf India	Anti-inflammatory Activity	Powder	IG Rat	1000 mg/kg	Active	vs. cotton pellet granuloma. Inhibited Phospholipase A2.	T15403
Leaf + Stem Jamaica	Smooth Muscle Relaxant Activity	ETOH(95%)Ext	Rabbit	33 ml/liter	Active	Duodenum.	A03360
Leaf + Stem Jamaica	Spasmogenic Activity	ETOH(95%)Ext	Guinea Pig	33 ml/liter	Active	lleum.	A03360
Leaf + Stem Jamaica	Spasmogenic Activity	H2O Ext	IP Guinea Pig	33 ml/liter	Active	lleum.	A03360
Leaf + Stem Jamaica	Vasoconstrictor Activity	ETOH(95%)Ext	Rat	0.003 ml/liter	Active	Hind quarter (isolated).	A03360
Leaf England	Hypoglycemic Activity	Not stated	Oral Mouse	6.25 % of diet	Inactive	vs. streptozotocin-induced hyperglycemia.	M23600
Leaf India	Alkaline Phosphatase Inhibition	Powder	IG Rat	1000 mg/kg	Active	Plasma vs.cotton pellet granuloma.	T15403
Leaf India	Antioxidant Activity	Powder	IG Rat	1000 mg/kg	Active	Inhibited lipid peroxide formation in cotton pellet granuloma (measured in granuloma exudate).	T15403

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf Nigeria	Laxative Effect	Hot H2O Ext	IG Rat	500.0 mg/kg	Inactive		M28283
Entire Plant India	Anticholesterolemic Activity	Not stated	GI Rat	2.0 ml	Active	Inhibited glutamate-oxaloacetate- transaminase in cholesterol-loaded animals.	T06409
Entire Plant India	Anticholesterolemic Activity	Not stated	Gastric Intubation Rat	2.0 ml	Active	Inhibited glutamate-pyruvate- transaminase in cholesterol-loaded animals.	T06409
Not Stated India	Antiviral Activity	Not stated	Oral Human Adult	Not stated	Active	Hepatitis virus - for acute viral hepatitis.	K01835
Leaf India	Antibacterial Activity	Not stated	Agar Plate	10 mg/ml	Active	B. subtilis S. aureus	AK1005
Leaf Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Active	Salmonella sp.	M27767
Root Argentina	Antibacterial Activity	Hot H2O Ext	Agar Plate	Not stated Not stated 62.5 mg/ml 62.5 mg/ml	Active Active Active Inactive	Pseudomonas aeruginosa Salmonella typhi Escherichia coli Staphylococcus aureus	K17523 AK1010 K14683 K14683
Leaf Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Corynebacterium diphtheriae Neisseria sp. Pseudomonas aeruginosa Staphylococcus aureus Streptobacillus sp. Streptococcus sp.	M27767
Not Stated Argentina	Antibacterial Activity	Alcoholic Ext	Agar Plate	5.0 mg/ml	Inactive	Bacillus subtilis Escherichia coli Micrococcus luteus Pseudomonas aeruginosa Staphylococcus aureus	K17402
Not Stated Nigeria	Antibacterial Activity	ETOH Ext H2O Ext	Agar Plate	Not stated	Inactive	Salmonella typhi	AK1001
Entire plant Guatemala	Antifungal Activity	Hot H2O Ext	Broth Culture	1.0 ml	Active Active Active Active Inactive	Trichophyton rubrum Epidermophyton floccosum Microsporum gypseum Trichophyton mentagrophytes Microsporum canis	M27151

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf Nigeria	Antifungal Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Active	Aspergillus niger	M27767
Leaf Essential Oil India	Antifungal Activity	Essential Oil	Agar Plate	Undiluted	Active	Fusarium oxysporum.	T09031
Not Stated Guatemala	Antifungal Activity	ETOH Ext	Agar plate	MIC: 50 mcg/ml	Active Active Inactive	E. floccosum T. rubrum A. flavus	AK1011
Not Stated Argentina	Antifungal Activity	Alcoholic Ext	Agar Plate	5.0 mg/ml	Inactive	Aspergillus niger Mucor sp.	K17402
Root Argentina	Antifungal Activity	Hot H2O Ext	Agar Plate	62.5 mg/ml	Inactive	Aspergillus niger	K14683
Not Stated Argentina	Antiyeast Activity	Alcoholic Ext	Agar Plate	5.0 mg/ml	Inactive	Candida albicans	K17402
Leaf Congo	Antimalarial Activity	ETOH(70%) Ext CH2C12	in vitro	6 mcg/ml	Active	<i>P. falciparum</i> >60% inhibition.	AK1006
Leaf Mali (cult)	Antimalarial Activity	Decoction	In vitro	IC50: 0.58 mg/ml	Weak Activity	vs. <i>Plasmodium falciparum</i> chloroquine-resistant	K18591
Leaf Mali (cult)	Antimalarial Activity	Decoction	IG Mouse	200.0 mg/kg	Weak Activity	Plasmodium berghei	K18591
Root Congo	Antimalarial Activity	ETOH Ext CH2CL2 Ext H2O Ext	Mice Mice Mice	200 mg/kg 200 mg/kg 200 mg/kg	Active Active Weak Activity	<i>Plasmodium berghei</i> (> 60% inhibition).	AK1003
Entire Plant Tanzania	Antimalarial Activity	MECL2 Ext MEOH Ext Pet Ether Ext	In vitro	IC50: > 499 mcg/ml	Inactive	Plasmodium falciparum	M25016
Root Brazil	Antimalarial Activity	Decoction H2O Ext	IG Mouse IG Mouse	Not stated 1.0 gm/kg	Inactive Inactive	Plasmodium berghei Plasmodium berghei	K07256 K07998
Root Brazil	Molluscicidal Activity	ETOH(95%)Ext H2O Ext	Not stated	10000 ppm	Inactive	Biomphalaria glabrata.	W02949
Root Brazil	Molluscicidal Activity	ETOH(95%)Ext Hot H2O Ext	Not stated	10000 ppm	Inactive	Biomphalaria straminea	W00500

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Entire Plant Puerto Rico	Molluscicidal Activity	Aqueous slurry (homogenate)	In vitro	LD100: > 1m ppm	Inactive	Lymnaea columella	T04621
Entire Plant Puerto Rico	Molluscicidal Activity	Aqueous slurry (homogenate)	In vitro	LD100: >1m ppm	Inactive	Lymnaea cubensis	T04621
Leaf Paraguay	Insecticide Activity	ETOH(95%)Ext Pet Ether Ext	Not stated	50.0 mcg	Active	Rhodnius neglectus.	K18765
Entire Plant Not Stated	Insecticide Activity	Not stated	Not stated	Not stated	Inactive		A04807
Root India	Antiascariasis Activity	ETOH(95%)Ext	Earthworm	Not stated	Inactive		J08904
Root India	Plant Growth Inhibitor Plant Root Growth Inhibitor Plant Germination Inhibition	Aqueous supernatant	External	2.0 %	Active		M26744
Shoots India	Plant Growth Inhibitor Plant Root Growth Inhibitor Plant Germination Inhibition	Aqueous supernatant	External	2.0 %	Active		M26744
Leaf India	Plant Germination Inhibition	CHCL3 Ext	Not stated	Not stated	Weak Activity	vs. Amaranthus spinosus (30.5% inhibition).	T03367

Biological Activities for Fedegoso Seeds/Beans (Cassia occidentalis)

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Beans Origin Not Stated	Toxic Effect	Unroasted Roasted	Goat	Not stated	Active Weak Activity	Roasting partially reduced the toxic effects of the beans. Toxic effect is damage to the liver, vascular system, heart and lungs.	AK1012
Seed (external tegment) Brazil	Toxic Effect	Not stated	Chicken	Rations	Active	Skeletal myodegeneration and weight loss.	AK1009

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Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seeds Origin Not Stated	Toxic Effect	MEOH Ext ETOH Ext CHCL3 Ext Ethyl acetate Benzene Ext Sodium Bicarb Sodium citrate	Chicken	Not stated Not stated Not stated Not stated 25 mM 25 mM	Active Active Active Active Active Weak Activity Weak Activity	Only an aqueous extract of sodium bicarbonate and sodium citrate removed the toxin from the seeds, but they left the toxin bound to particulate matter in the extract. Toxicity symptoms were weight loss, weakness, diarrhea, hypothermia, ataxia, recumbency, liver congestion, myodegeneration and death.	AK1013
Origin Not Stated	Toxic Effect	Not stated	Goat	Not stated	Active	Signs of cassia poisoning were diarrhea, inappetence, dyspnea, staggering, ataxia and recumbency, hemorrhages and congestion in the heart, lungs, abomasum and spleen, catarrhal enteritis, hepatic fatty change and necrosis, splenic hemosiderosis, pulmonary emphysema, degeneration of the renal tubule.	AK1014
Seed France	Toxic Effect (general)	Not stated	Oral Dog	Not stated	Active	Contains a toxic albumin that can be partially or entirely detoxified through the action of formalin. This albumin also behaves as an allergen and it is possible to immunize dogs against it by repeated subcutaneous injections.	W03638
Seed USA-LA	Toxic Effect (general)	Aqueous bica <i>r</i> bonate	GI Chicken	Variable	Active		T06526
Seed India	Toxic Effect (general)	H2O Ext	Rat	Variable	Active	Feeding caused weight loss unless supplemented with L-methionine and I-tryptophan.	T06797
Seed USA-TX	Toxic Effect (general)	Seeds in Ration	Cow	Not stated	Active	Toxicity symptoms and death described for cattle grazing on this plant(especially the seeds).	T01338

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seed Brazil	Toxic Effect	Rations	Rabbit	1% 2% 3% 4%	Active	Ration with 4% seeds gained less weight and died in the third week. Heart and liver affected with muscle atrophy.	AK1017
Seed USA	Toxic Effect	Seeds in Ration	GI Horse	Variable	Active	Administration of ground ripe beans to three shetland ponies, at 0.10, 0.20 and 0.33% of the animals body weight, dose-related lethality was observed. The levels of blood serum enzymes were increased. Lesions of the muscle fibers were detected upon microscopic examination.	T07081
Seed USA	Toxic Effect	Seeds in Ration	Calf	Not stated	Active	Increased death rate occurred when calves were also treated with vitamin-E and selenium,but not with selenium alone.	W04414
Seed Not Stated	Cardiotoxic Activity	Not Stated	Rabbit	Not stated	Active	Mitochondria were unable to maintain ionic gradients and became swollen, resulting in failure of respiration, disruption of mitochondrial structure and myocardial degeneration.	W03612
Seed USA	Neurotoxic Activity	Seeds in Ration	Pig	Variable	Active		T14239
Seed Brazil	Neurotoxic Effect	Rations	Chick	Not stated	Active	Axonal damage and degeneration of the myelin sheath observed.	AK1011
Seed USA-LA	Respiration (cellular) Inhibition	Aqueous bicarbonate	Chicken	Variable	Active	Mitochondria (liver).	T06526
Seed Not Stated	Antitoxic Activity	MEOH Ext	IP Mouse	125.0 mg/kg	Weak Activity	Vs. strychnine poisoning.	T10453
Seed Not Stated	Barbiturate Potentiation	MEOH Ext	IP Mouse	500.0 mg/kg	Active	Results significant at p < 0.01 level.	T10453
Seed Not Stated	Barbiturate Inhibition	MEOH Ext	IP Mouse	125.0 mg/kg	Inactive		T10453

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seed Brazil	Myodegenerative Effect	Not stated	Rat	Not stated	Active	Impaired cytochrome oxidase mitochondrial activity in myofibers characteristic of mitochondrial myopathy.	AK1016
Seed Brazil	Myodegenerative Effect	Rations	Rat	1% 2% 3%	Active Active Active	Induced mitochondrial myopathy.	AK1018
Seed Brazil	Myodegenerative Effect	Not stated	In vivo	Not stated	Active	Induced skeletal muscle atrophy and a decrease in weight gain.	AK1019
Seed Brazil	Myodegenerative Effect	Rations	Hen	Not stated	Active	Mitochondrial myopathy observed.	AK1011
Seed Brazil	Myodegenerative Effect	Rations	Chicken	4%	Active	Mitochondrial myopathy induced with muscle-fiber atrophy, lipid storage and cytochrome oxidase- negative fibers.	AK1012
Tegment Brazil	Myodegenerative Effect	Rations	Birds	0.2%	Active	Muscles had features similar to human mitochondrial myopathy.	AK1013
Beans Brazil	Myodegenerative Effect	Rations	Cow	21.5%	Active	Muscle weakness, incoordination and recumbency seen.	AK1014
Seed Not Stated	Protein Synthesis Inhibition	H2O Ext	Not stated	ID50=0.1 mg/ml	Inactive	Reticulocyte lysate (rabbit).	T01769
Seed Cuba	Bronchodilator Activity	Hot H2O Ext	IV Guinea Pig	1.5 ml	Inactive		M29843
Seed India	Antifungal Activity	ETOH-H2O (1:1) Ext	Agar Plate	10%	Inactive	Absidia ramosa	T08445
Seed India	Antifungal Activity	ETOH-H2O (1:1) Ext	Agar Plate	10%	Inactive	Aspergillus niger	T08445
Seed Japan	Antifungal Activity	Hot H2O Ext	Agar Plate	Variable	Active	Trichophyton granulosum	W04331
Seed Japan	Antifungal Activity	Hot H2O Ext	Agar Plate	Variable	Active	Trichophyton gypseum	W04331
Seed Japan	Antifungal Activity	Hot H2O Ext	Agar Plate	Variable	Active	Trichophyton purpureu	W04331

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Seed India	Antibacterial Activity	Pet Ether Ext Cyclohexane Essential Oil ETOH(95%)Ext	Agar Plate	Not stated	Active	Several gram + and - organisms.	W04415
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Corynebacterium diphtheriae	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Neisseria sp.	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Pseudomonas aeruginosa	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Salmonella sp.	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Staphylococcus aureus	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Streptobacillus sp.	M27767
Seed Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	2.0 mg/ml	Inactive	Streptococcus sp.	M27767
Seed Brazil	Antibacterial Activity	ETOH(95%)Ext	Agar Plate	Variable	Inactive	Bacillus subtilis Escherichia coli Salmonella typhosa Sarcina lutea Staphylococcus aureus	W04330
Seed Brazil	Antibacterial Activity	ETOH(95%)Ext	Agar Plate	Variable	Inactive		W04330
Seed India	Plant Germination Inhibition	CHCL3 Ext	Not stated	Not stated	Active	vs. <i>amaranthus spinosus</i> (66% inhibition).	T03367
Seed India	Plant Germination Inhibition	Aqueous supernatant	External	2.0 %	Active		M26744
Seed India	Plant Growth Inhibitor	Aqueous supernatant	External	2.0 %	Active		M26744
Seed India	Plant Root Growth Inhibition	Aqueous supernatant	External	2.0 %	Active		M26744
Fruit Sudan	Molluscicidal Activity	ETOH(80%)Ext	In vitro	200.0 mg/liter	Inactive	Biomphalaria pfeifferi	M26126
Fruit Sudan	Molluscicidal Activity	ETOH(80%)Ext	In vitro	200.0 mg/liter	Inactive	Bulinus truncatus	M26126

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Not Stated West Africa	Insect Repellent Activity	Not stated	Not stated	Not stated	Inactive	Repelled mosquitos by 29.4%. less effective than control.	AK1010
Not Stated UK	Insecticidal Activity	Not stated	In vitro	0.5% 1% 5%	Active Active Active	Rhyzopertha dominica Callosobruchus maculatus Sitophilus zeamais Prostephanus truncatus	AK1015
Not Stated Japan	Antitumor Activity	Emodin Conc	Topical Mouse		Active	Anti-tumor promoting effect on skin tumors induced by chemicals.	AK1015

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