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Poisonous Plants which are List in Siddha Medicine – A Literature Review

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ABSTRACT: Natural poisons are produced by species of bacteria, fungi, Protista, plants and animals. Poisonous plants are those which cause serious problems or even death occur, if a small quantity of its stem, leaves, seeds, fruits and roots are ingested (Grevil SDS, 1953) Some other plants are normally harmless but they may become toxic if preparative from them are taken in excess in strong doses or for along period of time as suggested by Qureshiet *al.* A Toxalbumen or phytotoxin is a toxic protein, which resembles a bacterial toxin in action, and causes agglutination of red cells with some hemolysis and is antigenic. Phytotoxin is a toxin produced by a plant. Ricin, Crotin and Abrin are Phytotoxins.

This literature review research was done for collection of available poisonous plants in Tamil Nadu, India which is important to create awareness to public in present. Aim of the research was Enumerate the types of Poisonous Plants which are list in ancient Siddha medical system and available modern text books and e-books. *Primary Objective* was to list-out the types of Poisonous Plants available or not in present according to ancient siddha texts and *Secondary objective* was to evaluate the type of Poisonous Plants which is commonly mentions in text books. Research method was Literature review Data collection; Information collected Available 04 Tamil Text Books about Poisonous Plants and 03 English books. In literature review research data analysis; collected data analysis with RCS – Related Citation Score. Finally concluded as most of the poisonous plants in Fabaceae family in this listed 64 plants, and poisonous part is most common seeds, taxonomy of plant which are commonly in Shrub and only 03 plants mention all selected text books that were in siddha Tamil books and modern English books in such selective view.

KEYWORDS: Poisonous Plants, Phytotoxins, Siddha medical System

I. INTRODUCTION

A poison is a substance which, when administered, inhaled or ingested, is capable of acting deleteriously on the human body. Thus, there are really no limits, between a medicine and a poison, for a medicine in a toxic dose is a poison and a poison in a small dose may be a medicine means, it depends on dose/quantity only. In law, the real difference between a medicine and a poison is the intent with which it is given. If the substance is given with the intention to save life, it is a medicine but if it is given with the intention to cause bodily harm, it is a poison (Khajja BS, 2011). In the context of biology, poisons are substances that can cause disturbances to organisms.

Throughout human history, intentional application of poison has been used as a method of assassination, murder, suicide, and execution. Poison includes both naturally produced compounds and chemicals manufactured by humans. Natural poisons are produced by species of bacteria, fungi, protists, plants and animals. Poisonous plants are those

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Vol. 7, Issue 9, September 2018

which cause serious problems or even death occur, if a small quantity of its stem, leaves, seeds, fruits and roots are ingested (Grevil SDS, 1953) Some other plants are normally harmless but they may become toxic if preparative from them are taken in excess in strong doses or for along period of time as suggested by Qureshi *et al.*

Kingsbury has outlined a variety of compounds produced in or absorbed by plants which may cause toxic reactions when ingested by animals, 1. Alcohols 2. Alkaloids 3. Polypeptides 4. Amines 5. Glycosides (a) Cyanogenetic (b) Goitrogenic (c) Irritant oils (d) coumarins 6. oxalates 7. Resins or resinoids 8. Phytotoxins 9. Minerals; (a) copper (b) lead (c) Cadmium (d) Flourine 10. Nitrogen; (a) Nitrites 9b) Nitrates (c) Nitroses (d) Gaseous oxides of nitrogen 11. Compounds causing photo sensitivity (a) primary photo sensitization (b) Hepatosensitization.

A Toxalbumen or phytotoxin is a toxic protein, which **resembles a bacterial toxin in action**, and causes agglutination of red cells with some hemolysis and is antigenic. phytotoxin is a toxin produced by a plant. **Ricin, crotin and abrin are phytotoxins. Animal toxalbumens are snake and scorpion venoms**

Although plant poisons is a life threatening emergency, it is rarely considered as a priority for health research in developing countries like India.

This literature review research was done for collection of available poisonous plants in Tamil Nadu, India which is important to create awareness to public in present.

II. AIM OF THE PROJECT

Enumerate the types of Poisonous Plants which are list in ancient Siddha medical system and available modern text books and e-books.

III. OBJECTIVES

Primary:

To list-out the types of Poisonous Plants available or not in present according to ancient siddha texts.

Secondary:

To evaluate the type of Poisonous Plants which is commonly mentions in text books

IV. MATERIALS AND METHODS

Study Design

Literature review

Data collection

Information collected

Available 04 Tamil Text Books about Poisonous Plants and 03 English books.

Data collection procedure

Literature review by coding and data entry with MS Excel.

Data analysis

In literature review research data analysis; collected data analysis with RCS – Related Citation Score.

Practical considerations

Logistics for data collection

Chief investigator arrangement for the data collection time schedule with Librarian, GSMCH, Palayamkottai Staff during working hours in weekdays without lunch hours.

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Vol. 7, Issue 9, September 2018

V. RESULT

Total Plant list

S.NO	TAMIL NAME	BOTANICAL NAME	FAMILY
1	Fd;wkpzp	Abrusprecatorius	Fabaceae
2	gpukjz;L	Argemonemexicana	Papaveraceae
3	vUf;::::;F	Calotropisgigantea	Asclepiadaceae
4	Ckj;;;ij	Datura metal	Solanaceae
5	rJuf;fs;sp	Euphorbia antiquorum	Euphorbiaceae
6	Musp	Nerium oleander	Apocyanaceae
7	Gifapiy	Nicotianatobaccum	Solanaceae
8	ghu;j;jpdpak;	Parthiniumhysterophorus	Asteraceae
9	Mkzf;F	Ricinuscommunis	Euphorbiaceae
10	vs;	Sesamumindicum	Pedaliaceae
11	cSe;J	Vingamungo	Fabaceae
12	fliy	Cicerarietinum	Fabaceae
13	Ntu;f;fliy	Arachishypogaea	Fabaceae
14	Njq;fha;	Coccosmucifera	Arecaceae
15	thiog;gok;	Museaparadisiaca	Arecaceae
16	gyhg;gok;	Artrocarpusheterophyllus	Fabaceae
17	,ytk;gprpd;	BombaxMalabaricum	Malvaceae
18	ehty;	Syzygiumcumini	Myrtaceae
19	fyg;igf;fpq;F	Gloriasasuperba	Colchicaceae
20	kpsfha;	Capsicum annum	Piperaceae
21	rptdhu;fpq;F	Indigoferaaspalathoides	Fabaceae
22	kfpok;	Mimusopselengi	Sapotaceae
23	kUNjhhd;wp	Lawsoniainermis	Lythraceae
24	Eq;F	Borassusflabelliter	Arecaceae
25	nfhbf;fs;sp	Sarcosemmabrevistigma	Apocyanaceae
26	ntw;wpiy	Pipperbettle	Piperaceae
27	NfhJik	Triticumaestivum	Poaceae
28	jpy;iyg;ghy;	Erecoerea agalocha	Euphorbiaceae
29	Neu;thsk;	croton tiglium	Euphorbiaceae
30	rpj;jpu%yk;	Plumbago zeylanica	Plumbagnaceae
31	Nrq;nfhI;;il	Semicarpus anacardum	Anacardiaceae
32	kQ;rs; myup	Thevatia nerifolia	Apocyanaceae

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Vol. 7, Issue 9, September 2018

33	vl;bf;nfhil;il	Strychnus nux vomica	Loganiaceae
34	Mgpdp	Papaver somniferum	Papaveraceae
35	fQ;rh	Cannabis sativa	Cannabaceae
36	ehgp	Aconitum ferox	Ranunculaceae
37	,uj;jNghsk;	Aloe barbadensis	Asphodelaceae
38	<r;Ru%yp	Aristolochia indica	Aristolochiaceae
39	fw;G+uk;	Cinnamomum camphora	Lauraceae
40	Jtiu	Cajanus cajan	Fabaceae
41	eupg;Gifapiy	Digitalis purpurea	Plantaginaceae
42	nkhr;ir	Lablab purpureus	Fabaceae
43	er;Rf;fha;	Cerepera odellam	Apocyanaceae
44	,e;jpuahzp	Citrullus colocynthis	Cucurbitaceae
45	jhsprgj;jpup	Taxus buccatta	Taxaceae
46	ntz;rptij	Ipomea turpethum	Convolvulaceae
47	mk;ikahu; \$e;jy;	Cuscuta reflexa	Convolvulaceae
48	xLtd;	Cleistanthus collinus	Phyllanthaceae
49	eupntq;fhak;	Urginea scilla	Asparagaceae
50	MWtjh	Ruta graveolens	Rutaceae
51	G+te;jpf;nfhil;il	Sapindus trifoliatus	Sapindaceae
52	jhd;wpf;fha;	Terminalia bellarica	Combretaceae
53	kiy Ckj;ij	Atropha belledona	Solanaceae
54	Fnuhrhzp Xkk;	Hyoscyamus nigrum	Solanaceae
55	nfhf;ifd;	Cocchine	Fabaceae
56	kf;fPG+	Artemisia maritima	Asteraceae
57	ghtl;:::;il	pavetta indica	Rubaceae
58	Nga;gP;::;h;;f;F	luffa cylindrica	Cucurbitaceae
59	Rptij	operculina turpethum	Convolvulaceae
60	flyhkzf;F	jatropha curcas	Euphorbiaceae
61	Mjis	jatropha gossyfolium	Euphorbiaceae
62	ghf;F	Areca catechu	Areaceae
63	kuk;Q;rs;	Berberis vulgaris	Berberidaceae
64	ntq;fhak;	allium cepa	Amaryllidaceae

fig:1-Total poisonous plants in research article

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Vol. 7, Issue 9, September 2018

TYPE OF PLANT	
TYPE OF PLANT	NO OF PLANT
Climber	10
Cactus	3
Creepers	1
Herb	16
Parasite	1
Shrub	19
Tree	14

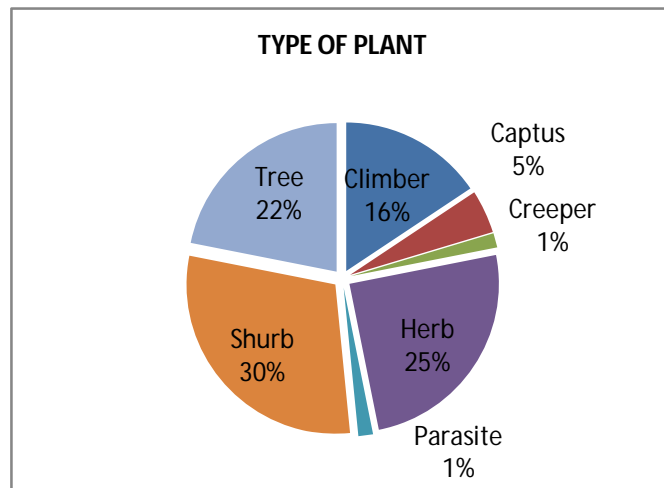


fig:2-type of plant in poisonous plant

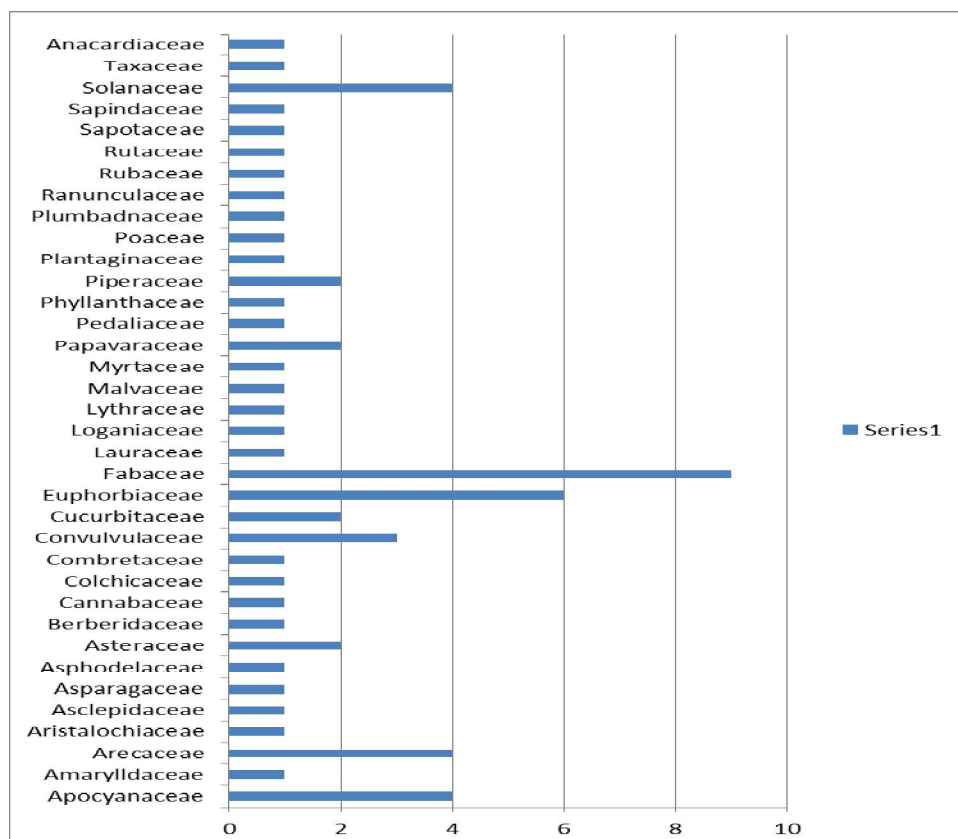


Fig:3-family of poisonous plant in references

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Vol. 7, Issue 9, September 2018

RCS of the poisonous plant
 (Relative Citation Score)

- 1 1 = 7 books
- 2 0.8 = 6 books
- 3 0.7 = 5 books
- 4 0.5 = 4 books
- 5 0.4 = 3 books
- 6 0.3 = 2 books
- 7 0.1 = 1 book

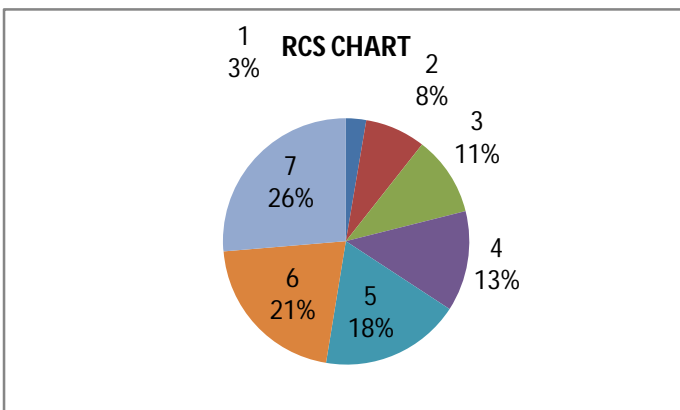
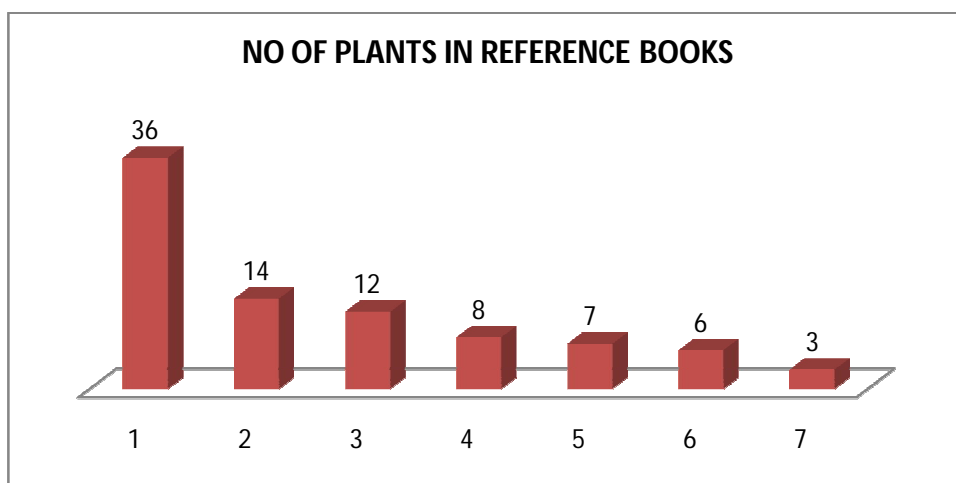


Fig:4-RCS CHART

NO OF PLANTS IN REFERENCE BOOKS

- 1.eQ;R KwP T E}y;
- 2.;r;l;k; rhu;;::::::;e;j kUj;::::::;JtKk; eQ;R kUj;JtKk;
- 3.FORENSIC MEDICINE AND TOXICOLOGY -NARAYANA REDDY
- 4.mDNghf itj;jpa Kiwfs;
- 5.ee;jPru; mfhy kuzE}y;
- 6.MODI'S MEDICAL JURISPRUDENCE AND TOXICOLOGY
- 7.CASARETT AND DOULLS TOXCOLOGY THE BASIC SCIENCE OF POISION



<In above graph presentation is one plant mentioned in how many reference books>

Fig:5-No of poisonous plants in reference books

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Vol. 7, Issue 9, September 2018

POISONOUS PART

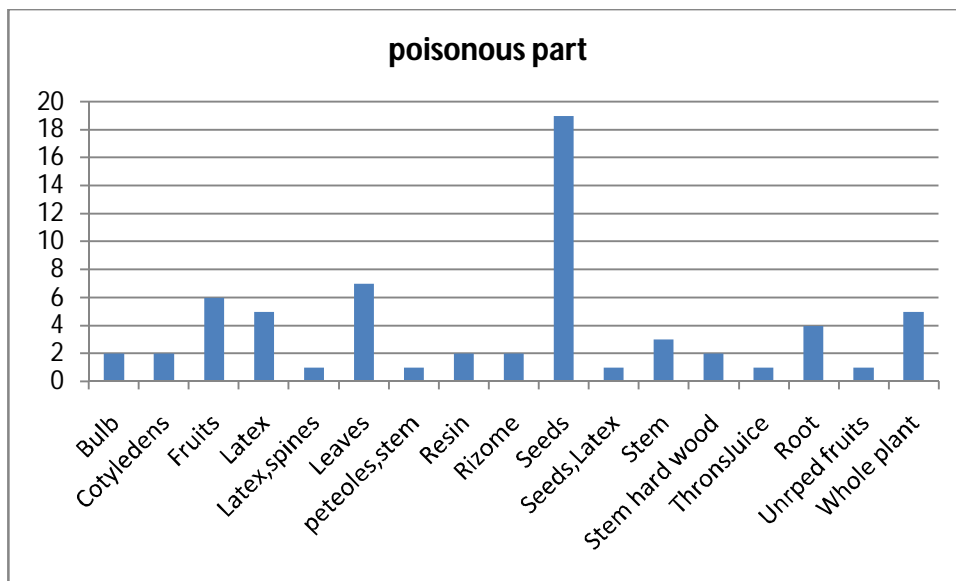


Fig:6-Poinous parts of the plants

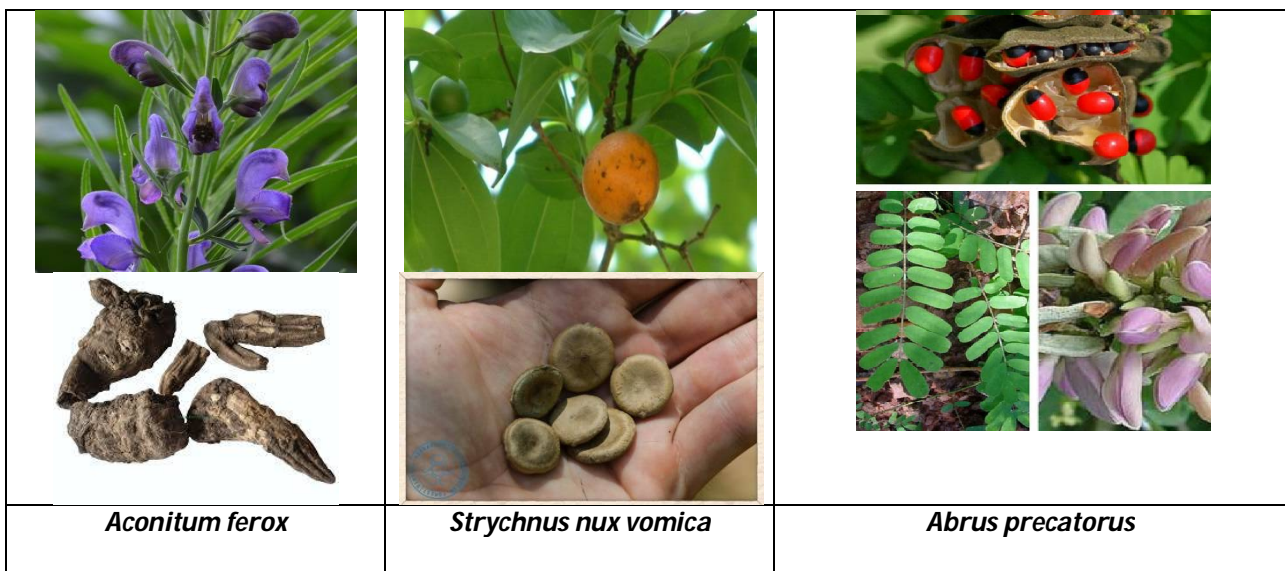


Fig:7-Most reference poisonous plants

VI. DISCUSSION AND CONCLUSION

In this research according to the result altogether 64 plants list in selected text books. Satisfied of Outputs were list-out the types of Poisonous Plants available or not in present according to ancient siddha texts. And compare the name of

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Vol. 7, Issue 9, September 2018

Poisonous Plants are same or change between modern and ancient Siddha texts. And Outcome is Enumerate the 64 Poisonous Plants available in present and ancient by Siddha, modern text books and e-books.

According to result; Fabaceae family had most common poisonous plants itself as 09. Euphorbiaceae family had 06 poisonous plants and Arecaceae 04 family had poisonous plants.

Relative Citation Score was calculated with all reference text books particularly as; high score was obtained by only 03 plants in total 07 books RCS was- 1, 06 poisonous plants got RCS – 0.8.

In taxonomical classification of poisonous plants 19 plants were listed as Shrub, Herbs- 16, Tree – 14, Climber -10 and Parasite – 01.

Poisonous Part were found as; seeds were majority of the poisonous plants such as 19, leaves – 07, Fruit – 06, Latex – 05, Whole plant – 05 and root -05.

In addition, 36 poisonous plants were mentioned in only one book. Same way 14 poisonous plants in two books, 12 plants – 03, 08 plants – 04 books, 07 plants – 05 books, 06 plants – 06 books, 03 poisonous plants in 07 books.

Finally concluded as most of the poisonous plants in Fabaceae family in this listed 64 plants, and poisonous part is most common seeds, taxonomy of plant which are commonly in Shrub and only 03 plants mention all selected text books that were in Siddha Tamil books and modern English books in such selective view.

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