

A PRELIMINARY SURVEY OF CYANOGENIC SEEDS OF SOME ANGIOSPERMIC PLANTS OF NANDED DISTRICT OF MAHARSHTRA

O.S. RATHOR and M.K.ZARE*

Postgraduate Department of Botany, Science College, Nanded - 431 605 (Maharashtra) India.

*Vasantrao Naik Mahavidyalaya, New Nanded - 431 603 (Maharashtra) India.

A preliminary survey of some of the seeds of angiospermic plants of Nanded District of Maharashtra that contain cyanogenic compounds was conducted. Seeds from 15 species of angiospermic plants from 12 families were analysed, out of which seeds from 8 plants tested positive for presence of HCN, however negative tests do not exclude the possibility of occurrence of these compounds, as the HCN production in plants depends on number of ecological and physiological conditions.

Keywords : Angiospermic seeds; Cyanogenic compounds; Positive and negative observations.

The ability of plants to produce HCN from a parent substance is known as cyanogenesis. At least 1000 species belonging to 80 families can be called as cyanogenic¹. The study of the distribution of cyanogenic plants of different parts of world is continuously carried on²⁻⁴ as it helps in chemotaxonomic evaluation of genera⁵. The fact that these

plants may be poisonous to both humans and live stock and some of these are being utilized regularly in the traditional Indian medicine system further whetted the interest in these plants. The another fact that enhances this interest is the inherent resistance of some of these cyanogenic plants to certain plant pathogens.

Table 1. A preliminary test of some angiospermic seeds for HCN.

S. No.	Name of the Plant and Family	Plant Part Used	Test (+ve/-ve)
1.	<i>Pongamia pinnata</i> (L) Pierre (Fabaceae)	Dry seeds	+
2.	<i>Polyalthia longifolia</i> (Sonner) Thw. (Annonaceae)	Soaked seeds	+
3.	<i>Annona squamosa</i> L. (Annonaceae)	Unripe seeds	-
4.	<i>Terminalia catappa</i> L. (Combretaceae)	Unripe seeds	+
5.	<i>Canthium coromandelicum</i> (Brumf.) Alston (Rubiaceae)	Fruit and seeds	+
6.	<i>Acacia leucophloea</i> (Roxb.) Willd. (Mimosaceae)	Young Fruits and seeds	+
7.	<i>Sorghum vulgare</i> Pers. (Hybrid Var.) (Poaceae)	Dry, Soaked & Germinated Seeds	-
8.	<i>Ricinus communis</i> L. (Euphorbiaceae)	Dry Seeds Soaked Seeds	+
9.	<i>Brassica campestris</i> L. (Brassicaceae)	Dry Seeds	+
10.	<i>Pisum sativum</i> L. (Fabaceae)	Dry, Soaked & Germinated Seeds	-
11.	<i>Dalbergia sissoo</i> (Roxb.) ex. DC. (Fabaceae)	Seeds and Fruits	-
12.	<i>Tamarindus indica</i> L. (Caesalpiniaceae)	Dry Seeds Soaked	-
13.	<i>Lantana camera</i> L. Var. <i>aculata</i> (L.) Mold. (Verbenaceae)	Seeds & Fruits	+
14.	<i>Martynia annua</i> L. (Martyniaceae)	Seeds from Unripe Fruits.	+
15.	<i>Cayratia trifolia</i> (L.) Domin. (Vitaceae)	Seeds & Fruits	+

Marathwada is one of the four divisions of Maharashtra which forms the part of vast Deccan plateau of India. A recent survey has shown occurrence of about 1800 angiospermic plants in this area⁶. The present study is a survey of some seeds of angiospermic plants of Nanded district for cyanogenic property.

Seeds of fifteen Angiospermic plants belonging to 12 families were collected from Nanded district of Marathwada. The plants were correctly identified and the HCN was detected in seed extracts by simple colour test with sodium picrate paper after hydrolysis with dil. HCl, a piece of filter paper impregnated with Sodium picrate solution was suspended over night in a vial containing the hydrolysed seed extract. A change from yellow to brick red colour of paper indicates a positive test for HCN⁷.

Table-1 shows the results of the test for HCN. Out of 15 plants tested, seeds from eight plants gave positive results for occurrence of HCN. Cyanogenic glycosides normally

occur in vegetative tissues or in seeds, three results confirms previous observations and five observations are the new reports. *Polyathia longifolia*, *Canthium coromandelicum*, *Lantana camera*, *Martynia annua*, *Cayratia trifolia* seeds are reported for the first time for the occurrence of HCN.

The negative results are however to be reconsidered as the HCN production by plants depends upon several factors as the age of the seeds, the season of the year, day and time, ecological factors like stress conditions and genetic variations.

References

1. Seigler D S 1975, *Phytochemistry* 14 9
2. Seigler D S 1976, *Econ. Bot.* 30 395
3. Tjon Sie Fat L A 1978, *Lyoydia* 41(6) 571
4. Seigler D S Coussio J D and Rondina V D 1979, *J. Nat. Prod. (Liy)* 42(2) 179
5. Gibbs R D 1974, *Chemotaxonomy of flowering plants*, Mc. Gill Quins Uni. Press Montreal.
6. Naik V N 1998, *Flora of Marathwada*, Amrut Prakashan Aurangabad.
7. Conn E E 1969, *Ag. & Food Chem.* 17 519