R. 1033
REGISTERED No. L.-7646

The Gazette of Pakistan

EXTRAORDINARY
PUBLISHED BY AUTHORITY

ISLAMABAD, MONDAY, AUGUST 13, 1973

PART II

Statutory Notifications (S. R. O.)

GOVERNMENT OF PAKISTAN

MINISTRY OF FOOD AND AGRICULTURE

(Agriculture Wing)

NOTIFICATION

Islamabad, the 8th August, 1973

S. R. O. 1187 (I)|73.—In exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971 (II of 1971), the Federal Government, in consultation with the Agriculture Pesticide Technical Advisory Committee, is please to make the following rules, the same having been previously published as required by sub-section (1) of the said section, namely :—

PART I—PRELIMINARY

1. **Short title and commencement.**—(1) These rules may be called the Agricultural Pesticides Rules, 1973.

(2) They shall come into force at once.

2. **Definitions.**—In these rules, unless there is anything repugnant in the subject or context,—

(a) "active ingredient" means an ingredient capable in itself of preventing, destroying, repelling or mitigating insects, fungi, rodents, weeds or other pests when used in the same manner and for the same purpose as those for which it is intended, but is not antagonistic to the activity of any other active ingredient in the same formulation;

Price : Ps. 62

[497 Ex. Gaz.]

(b) "Director" means the Plant Protection Adviser and Director, Department of Plant Protection;

(c) "Form" means a Form appended to these rules;

(d) "Ordinance" means the Agricultural Pesticides Ordinance, 1971 (II of 1971); and

(e) "section" means a section of the Ordinance.

PART II—REGISTRATION

3. **Application for registration of pesticides.**—An application for registration for a brand of pesticide under sub-section (1) of section 5 shall be made to the Federal Government in Form 1.

4. **Registration of Pesticide.**—(1) On receipt of an application for registration under rule 3, the Federal Government may send the application together with a sample of pesticide to the Pesticide Laboratory for test or analysis within one month from the receipt of samples to ascertain whether the sample is in accordance with the information provided along with the application.

(2) On receipt of the result of the test or analysis under sub-rule (1), the Federal Government may forward the same to the Provincial Government to conduct, in direct association with the applicant for the registration of a pesticide, such biological tests under field conditions as may be required.

(3) On receipt of a report from the Provincial Government under sub-rule (2), the Federal Government, if it is satisfied that the sample is in accordance with the information, may register the brand of pesticide and grant, within two crop seasons from the date of application, the applicant a certificate of registration in Form 2 and assign to the certificate a registration number.

(4) A certificate of registration granted under sub-rule (3) shall apply only to the pesticide described in the application to which the certificate relates.

(5) With the approval of the Federal Government, an application for the registration of a pesticide may be amended before or after registration, and the registration shall, for the purposes of these rules, be deemed to relate to the application as amended.

(6) A certificate of registration shall be valid for a period of three years and may be renewed for a further period of three years at a time on an application made in this behalf in Form 3.

(7) A certificate of renewal of registration shall be in Form 4.

5. **Rejection of application.**—(1) If it appears to the Federal Government that the results of the test or analysis under sub-rules (2) and (3) of rule 4 do not corroborate with the information supplied by the applicant or that the labels and containers intended to be used do not conform to the provisions of these rules, it may, within two crop seasons from the date of application, reject the application for registration and shall inform the applicant of the reasons for the rejection and supply him with full particulars of the tests, if any, applied.

(2) The rejection of an application for registration of pesticide shall, however, not debar the applicant from making a fresh application for registration.

6. **Fees.**—A fee of five hundred rupees shall be paid with each application for a certificate or renewal of a certificate of registration, and shall in no case be refunded to the applicant.

7. **Copies of certificates.**—Copies of all certificates granted under rule 4 may be obtained from the Federal Government on payment of a fee of twenty rupees by the person on whose application it had been registered or his agent.

8. **Discontinuation of manufacture or formulation.**—If the manufacture or formulation of any registered pesticide is discontinued, the manufacturer or formulator or his agent shall, within six months from the date of such discontinuance, give notice of the fact to the Federal Government.

PART III—IMPORT

9. **Import of pesticides.**—(1) No pesticide, except for experimental purposes, shall be imported into Pakistan unless it has been registered under rule 4.

(2) No pesticide shall be imported unless it complies strictly with the details given in the application for registration.

(3) No pesticide shall be imported unless it is packed and labelled in conformity with the rules in part V.

(4) No pesticide shall be imported unless the importer has proper facilities for storage of pesticides as laid down in the rules in part VI.

PART IV—MANUFACTURE, FORMULATION OR SALE

10. **Conditions to be fulfilled after registration of a pesticide for manufacture and formulation.**—A person who intends to manufacture or formulate a pesticide registered under rule 4 shall—

(a) provide and maintain an adequate qualified staff and adequate premises and plant for the proper manufacture or formulation and storage of pesticide in respect of which the certificate of registration has been granted, and shall also maintain a laboratory suitable for carrying out quality control tests of the pesticides as may be specified by the Federal Government or the Provincial Government;

(b) keep records of the details of manufacture or formulation of each batch of the pesticide which is issued for sale and of the application of the tests thereto;

(c) allow any inspector, authorised by the Provincial Government in that behalf, to enter any premises where the manufacture or formulation is being carried on and to inspect the premises and the means employed for testing of pesticides;

(d) from time to time, report to the Provincial Governments any change in the expert staff responsible for the manufacture or formulation of the pesticide and any material alterations in the plant or premises used for that purpose;

(e) observe the conditions for the storage of pesticides as laid down in Part VI of these rules;

(f) provide such protective clothing as may be required to the workers and take all necessary precautions for their protection as may be specified by the Director; and

(g) arrange medical check up of the workers as often as required or at least twice a year, and provide free of cost medical treatment.

11. **Conditions to be fulfilled for the sale of a registered pesticide.**—A person to whom a certificate for the sale of a registered pesticide has been granted shall—

(a) maintain adequate number of properly qualified technical staff consisting of entomologists, plant pathologists and toxicologists having sufficient knowledge regarding the products, its use, storage, transportation, packaging and safety measures;

(b) maintain proper storage facilities for peticides;

(c) provide necessary training to the seller regarding safe storage, handling, safety measures and use of pesticides; and

(d) keep the pesticide in the prescribed package.

PART V—PACKING AND LABELLING

12. **Packing.**—The container of pesticide shall be such as may be suitable for its storing and transportation and shall be of such material which does not deteriorate the pesticide at least for the period of guarantee.

13. **Labelling.**—No person shall sell or distribute any pesticide unless it is registered and labelled in accordance with these rules.

14. **Manner of labelling.**—The following information shall be printed conspicuously, legibly and indelibly on the containers and every tag or label attached thereto, namely :—

(a) name of the product,

(b) name and address of the manufacturer or formulator or the person in whose name the pesticide is registered,

(c) net contents,

(d) registration number,

(e) date of manufacture|formulation,

(f) date of test,

(g) normal storage stability,

(h) the name and percentage by weight of active ingredient and total percentage by weight of other ingredients,

(i) the words "Meant For Agricultural Use Only"

(j) warning or caution statements (the required signal word such as "Danger", "Warning" or "Caution" and the statement "Keep out of reach of children") must appear on the front panel; and the front panel of the labelled pesticides must contain the following, namely :—

(i) the word "POISON" in red on a contrasting background,

(ii) the word "DANGER",

(iii) a picture of skull and cross-bones, and

(iv) a statement of antidote, including direction to call a physician immediately,

(k) directions for use which are adequate to protect the public (optional on label) may appear on accompanying printed or graphic matter; and

(l) direction to destroy empty containers and to bury them in the ground.

15. **Information on container, etc.**—No information inconsistent with or, in any manner, not qualifying a guarantee, shall be shown on any container, tag or label.

PART VI—STORAGE AND USE

16. **Requirement in respect of the place of storage.**—(1) The place where the pesticide is stored shall be suitably equipped, ventilated and soundly constructed, and be kept clean and in a good state of maintenance. The storage place must be provided with the following notice on the door :—

"NO ENTRY FOR UNAUTHORISED PERSONS, NAKED LIGHTS AND SMOKING PROHIBITED."

(2) When not in use, the entrance to the place of storage must be properly closed and clearly marked "PESTICIDES" and shall bear a picture of skull and cross-bones of at least three inches in length.

(3) The electrical installations must be sound in view of the chemical substances.

(4) Necessary installations and precautions against fire hazards shall be provided.

17. **Requirements regarding empty packages and pesticide remains.**—(1) The destruction and removal of the empty packages and pesticide remains shall be effected in such a way that sources of water supply are not contaminated.

(2) The uncleaned packages shall be destroyed in a way as to preclude the possibility of their being reused for any purpose other than as base material.

18. **Requirement relating to use.**—(1) The premises in which pesticides are stored or empty packages and pesticide remains are removed or destroyed shall have the—

(a) washing facilities with water, soap and towel;

(b) in case of danger of poisoning or affection of the skin, suitable protective clothing and masks to be worn by the workers.

(2) Persons engaged in spraying pesticides shall use the protective clothing and masks specified in sub-rule (1) as and when required.

PART VII—AGRICULTURE PESTICIDE TECHNICAL ADVISORY COMMITTEE

19. **Functions of the Agriculture Pesticide Technical Advisory Committee.**—The following shall be the functions of the Agriculture Pesticide Technical Advisory Committee, namely :—

(a) a study of the working of these rules with a view to recommending to the Federal Government any amendments that may be necessary therein;

(b) registration of pesticides; and

(c) approval of specification of technical grades of registered pesticides for local procurement or import.

PART VIII—PESTICIDE LABORATORY

20. **Functions of Pesticide Laboratory.**—The following shall be the functions of the Pesticide Laboratory, namely :—

(a) to analyse and test such samples of pesticides as may be sent to it under the Ordinance and these rules; and

(b) to carry out such other duties as may be entrusted to it by the Federal Government or a Provincial Government.

21. **Despatch of samples for test or analysis in the Pesticide Laboratory.**—(1) Samples of pesticides for test or analysis in the Pesticide Laboratory shall be sent by registered post in sealed packet, together with a Memorandum in Form 5 in an outer cover addressed to the Director.

(2) The packet as well as the outer cover shall be marked with a distinguishing number.

(3) A copy of the Memorandum in Form 5 and a specimen impression of the seal used to seal the packet shall be sent separately by registered post to the Director.

22. **Recording of conditions of seals.**—On receipt of the packet, it shall be opened by an officer authorised in writing in that behalf by the Director who shall record the conditions of the seals on the packet.

23. **Report of result of test or analysis.**—(1) After test or analysis the report of the result of test or analysis together with full particulars of the test applied shall be supplied forthwith to the sender in Form 6.

(2) The report of the test or analysis shall be signed by the Director or an officer authorised by him.

24. **Access to information.**—No person other than an officer of the Pesticide Laboratory authorised in writing by the Director shall have access to the information deposited in the Laboratory.

25. **Destruction of information.**—The formula deposited in the Pesticide Laboratory shall be destroyed by the Director—

(a) if the application for registration is rejected, or

(b) if the certificate of registration is cancelled.

26. **Disclosure of information.**—No person on the staff of the Pesticide Laboratory shall disclose to any person not on the staff of the Laboratory any information relating to the composition of a particular pesticide acquired in the course of his duties in the Laboratory.

Provided that the Director or any officer authorised by him in this behalf may, with the previous sanction of the Federal Government, disclose any information so acquired to the extent necessary for the purposes of a prosecution under the Ordinance.

PART IX—GOVERNMENT ANALYST AND INSPECTORS

27. **Qualifications of Government Analyst.**—No person shall be appointed to be a Government Analyst for pesticides unless he possesses a Master's Degree in Chemistry or Entomology or Toxicology or Plant Pathology or Plant Protection and has at least five years' experience in the analysis of pesticides.

28. **Duties of Government Analyst.**—The Government Analyst for pesticides shall analyse or test or cause to be analysed or tested such samples of pesticides as may be sent to him by Inspectors under sub-section (2) of section 17 or other persons under section 20 and furnish reports of the results of test or analysis in accordance with these rules.

29. **Procedure on receipt of sample.**—(1) On receipt of a package from an Inspector containing a sample of pesticide for test or analysis under rule 36, the Government Analyst shall compare the seals on the packet with the specimen impression received separately and shall note the condition of the seals on the package.

(2) After the test or analysis has been completed, the Government Analyst shall forthwith supply to the Inspector a report in triplicate in Form 7 of the result of the test or analysis, together with full details of the test methods applied.

30. **Report of results of test or analysis.**—An application from a purchaser for test or analysis of pesticide under section 20 shall be made in Form 8 and the report of the test or analysis of the pesticide made on such application shall be supplied to the applicant in Form 9.

31. **Fees.**—The fees for test or analysis of a pesticide under section 20 shall be those as are specified in Schedule I to these rules.

32. **Duties of Inspectors.**—Subject to the provisions of section 16 of these rules, an Inspector may, within the local limits of the area for which he is appointed—

(a) inspect any premises wherein any pesticide is being manufactured or formulated, the means employed for quality control and testing of pesticides and all records and registers relating thereto;

(b) inspect any premises wherein any pesticide is being sold or stocked or exhibited for sale or is being distributed, the storage arrangements and all relevant records and registers relating thereto;

(c) take samples of any pesticide which is being manufactured or formulated or being sold or is stocked or exhibited for sale or is being distributed and forward them for test or analysis in accordance with these rules provided that a sample shall not exceed two pounds (one kilogram) in quantity;

(d) enter and search, at all reasonable times, with such assistance, if any, as he considers necessary, any building, vessel or place, in which he has reason to believe from personal knowledge or from information given by any person and taken down in writing that an offence under the Ordinance or these rules has been or is being committed;

(c) seize such pesticide and all materials used in the manufacture thereof and all other articles including registers, cash memos, invoices, bills which he has reason to believe may furnish evidence of the commission of an offence punishable under the Ordinance or these rules.

33. **Form of intimation of purpose of taking sample.**—Where an Inspector takes a sample of a pesticide for the purpose of test or analysis, he shall intimate such purpose in writing in Form 10 to the person from whom he takes it.

34. **Prohibition of disclosure of information.**—Except for the purpose of official business or when required by a court of law, an Inspector shall not, without the sanction in writing of his official superior, disclose to any person any information required by him in the course of his official duties.

35. **Form of receipt for seized pesticide.**—A receipt by an Inspector for the stock of any pesticide seized under sub-section (1) of section 24 shall be in Form 11.

36. **Procedure for despatch of sample of pesticide to Government Analyst.**—(1) The portion of the sample or the container to be sent by an Inspector to the Government Analyst for test or analysis under the Ordinance shall be sent by registered post or by hand in a sealed packet together with a memorandum in Form 10 in an outer cover addressed to the Government Analyst.

(2) A copy of the memorandum and a specimen impression of the seal used to seal the packet shall be sent to the Government Analyst separately by registered post or by hand.

PART X—PESTICIDES AND THEIR ANTIDOTES

37. **Nomenclature of pests.**—The insect pests of various crops, plant diseases of weeds and other animal pests infesting agricultural crops, the scientific and common names of which are set out in Schedules II, III and IV, respectively, to these rules, shall be deemed to be insects, fungi and other plant or animal pests within the meaning of the Ordinance and these rules.

38. **Pesticide to be labelled poison.**—The pesticides set out in Schedule V to these rules shall be labelled "Poison".

39. **Symptoms of poisoning, first-aid and antidotes of pesticides.**—The symptoms of poisoning from various pesticides, first-aid that should be given and the antidotes of each such pesticides are set out in Schedule VI to these rules.

PART XI—SAFETY PRECAUTIONS

40. **Standard precautions.**—The following precautions shall be observed while working with any kind of pesticides, namely :—

(1) read the "label" carefully, especially the safety precautions before handling any pesticide;

(2) do not eat, drink or smoke;

(3) when opening the container or while transferring, diluting or mixing pesticides, wear protective gloves, overalls, respirators, goggles as the case may be;

(4) wash hands and exposed skin before drinking or smoking;

(5) avoid working in the pesticide mist or drift;

(6) avoid breathing pesticides;

(7) avoid contact with skin, eyes and mouth;

(8) avoid contaminating clothing;

(9) avoid spilling and splashing;

(10) wash and flush off pesticides from skins and eyes immediately;

(11) remove heavily contaminated clothing and footwear immediately; and

(12) wash thoroughly protective clothing, gloves, etc., immediately after use.

41. **Safety precautions for the health of workers.**—Every employer shall observe the following precautions against poisoning by pesticides, namely :—

(i) not to employ a worker aged below 18 and over 60 years for working with pesticides;

(ii) to ensure that workers are thoroughly trained in the precautions to be observed and are being adequately supervised qualified supervisors;

(iii) not to permit a worker on job unless he is using standard protective clothings or devices or those otherwise prescribed for the specific product being handled by him;

(iv) to provide workers with the prescribed protective clothings and respirators or dust filters with adequate number of replacement filters;

(v) to provide soap, clean towels, clean water in quantities to be sufficient for all the workers likely to use them and must be sited near but outside the area where it is likely to be contaminated with the pesticide being handled by them. Such water, if not on tap, must be marked as "for personal washing only";

(vi) to provide accommodation which must be properly ventilated and must be suitable to prevent the contamination of workers' personal clothing not worn during working hours;

(vii) to provide drinking water and vessels and ensure that workers' food and drinks are not contaminated by the pesticides;

(viii) to ensure that a worker does not eat, drink or smoke unless he has removed all of his protective clothing except overalls and boots, and has washed his hands and face and has left the area of work;

(ix) to make available water in sufficient quantities and containers in which to wash the protective clothings;

(x) to ensure that protective devices such as rubber gloves are washed from inside and outside and respirators and dust masks are cleaned and ventilated at the end of each day's work;

(xi) to ensure that unless badly stained or thoroughly soiled or drenched by pesticides, which require immediate washing, the overalls and boots are washed at least once a week;

(xii) keep a record containing :—

(a) name and address of every worker;

(b) number of hours each worker spends each day on job;

(c) the pesticides used;

(d) any case of suspected illness or unexplained absence from work after using the pesticides;

(xiii) to give to the worker, who leaves his employment, a copy of particulars specified in clause (xii) during at least six previous months;

(xiv) to ensure that a worker does not blow, such or put his mouth to a jet, sprinkler, nozzle or soil applicator or machinery or whatever description that has been used with pesticides.

PART XII—METHOD TO BE FOLLOWED BY PESTICIDE LABORATORY

42. **Analytical methods.**—The Pesticide Laboratory shall follow the following methods, in the order as they are given, for the formulation and residue analysis of pesticides, namely :—

(1) Methods of Association of Official Agricultural Chemists (AOAC) of USA.

(2) Methods of Collaborate International Pesticides Analytical Council (CIPAC).

(3) Methods of formulation panel of the Pesticide Analytical Committee (PAC) of the Ministry of Agriculture, Fisheries and Food, U. K.

(4) Methods of WHO Specifications of pesticides.

(5) Methods published in the periodicals from time to time.

(6) Methods of Federal Drugs Administrations (FDA) of USA.

(7) Methods given by the firm.

43. **Limit of variability to be allowed.**—The Pesticide Laboratory shall follow the limit of variability to be allowed in the analytical results, that is, tolerance in the contents of active ingredients in pesticides consignments in the light of Appendix V to the " Manual on the use of FAO Specifications for Plant Protection Products ".

NASIR-UD-DIN,
Deputy Secretary.

FORM 1

[*See* rule 3]

APPLICATION FOR REGISTRATION OF PESTICIDES

(to be rendered in triplicate)

(1) Name and address of manufacturer/formulator/seller/importer/distributor/ stockists applying for registration.

(2) Proprietory/trade/common name and various formulations of the pesticide under which it is proposed to be sold.

[illegible] and structural formula of active ingredient.

(4) Full details of the chemical and physical properties of the active ingredient and the method used by the manufacturer to determine the content of the active ingredient contained in the product (the accuracy of the method of determination should be stated).

(5) Name and percentage by weight of active ingredient and total percentage by weight of other ingredients.

(6) Details of :—

(*i*) Physical properties.

(*ii*) Chemical properties.

(*iii*) Biological performance supported by field trial data in Pakistan and abroad.

(*iv*) Method of application.

(*v*) Stability.

(*vi*) Phytotoxicity.

(*vii*) Compatibility.

(*viii*) Type and size of containers.

(7) Use recommendation/direction for use.

(8) Recommended precautions and antidotes.

(9) Toxicology.

(10) Effect on various metals.

I do hereby apply for registration of the pesticide particulars of which are given above and do hereby certify that these particulars are to the best of my knowledge true and correct.

Dated : *Signature of the applicant.*

NOTES

DIRECTIONS FOR COMPLETION AND SUBMISSION OF APPLICATION

1. The application must be accompanied by :—

(a) three copies of every label and advertisement used or intended to be used in connection with the brand ;

(b) a treasury challan evidencing the payment of the fee of ~~one~~ five hundred rupees ;

(c) in the case of renewal of an existing registration the previous certificate of registration ; and

(d) a suitable sample of the pesticide sufficient for test or analysis.

2. The registration fee payable shall be deposited under Head "XXIX Agriculture ; Misc. Receipt ; Registration fee of pesticides".

3. The application should be sent in a sealed cover and marked "CONFIDENTIAL".

FORM 2

[*See* rule 4(3)]

(for official use only)

No.....

CERTIFICATE OF REGISTRATION

(*a*) Certified that the pesticide has been registered in the name of the undertaking whose particulars are specified below :—

1. Name of the undertaking :
2. Address :
3. Registration No :
4. Name of the pesticide (Brand/trade/common name of the pesticide, details regarding its composition, etc).

(*b*) Approve of the labels, copies of which are to be used in connection with the said brand of pesticide.

Signature of Registering officer.

Seal

Department

Dated :

FORM 3

[*See* rule 4(6)]

APPLICATION FOR RENEWAL OF A CERTIFICATE OF REGISTRATION OF PESTICIDES

(to be rendered in triplicate)

1. Name of applicant.
2. Address of applicant.
3. Descriptive name of the brand.
4. Previous Registration No.
5. Changes, if any, made since the original Registration.

I do hereby apply for the renewal of a certificate of registration in terms of section 8 of the Agricultural Pesticides Ordinance, 1971 (II of 1971) of which the particulars are given above and I do hereby certify that no changes have been made since the original registration, except as indicated above.

Dated :

Signature of the applicant.

FORM 4

[*See* rule 4(7)]

No.....

CERTIFICATE OF RENEWAL OF REGISTRATION OF PESTICIDES

I do hereby :—

(*a*) certify that the brand of pesticide (name of pesticide) referred to in application No.....has been renewed for registration No..... and

(*b*) Certify that the following changes from the original Registration have been accepted.

Dated : *Signature of Registration Officer.*

FORM 5

[*See* rule 21]

MEMORANDUM

I do hereby certify that accompanying is a sample of posticide taken by me on.....at.....(specify full address) from stock in charge of..... (state name and address of importers/stockist/ manufacturer/seller/formulator) .....in the presence of .....(state name and address of witness).

The following further particulars are given in connection with the sample :—

1. Name and brand of pesticide.
2. Marks or number on sample.
3. Information given on container from which sample was taken.
4. Approximate quantity of pesticide represented by sample.
5. Other particulars,

Signature of Witness *Signature of Inspector.*

Place :

Date :

Note.— A copy of this memorandum shall be handed over or forwarded to the owner of the pesticide or to his agent. A copy shall be retained by the Inspector.

FORM 6

[*See* rule 23]

REPORT OF TEST OR ANALYSIS BY PESTICIDE LABORATORY

It is hereby certified :—

(1) that on.....the sample of.....was received from.....in the Pesticide Laboratory, Karachi for test and/or analysis,

(2) that the sample was labelled, sealed and marked.....and

(3) that the sample was tested and/or analysed and found that (specify details of the results of test and/or analysis)

Signature of Director,
Pesticide Laboratory.

Dated.....

FORM 7

[*See* rule 29]

REPORT OF RESULT OF ANALYSIS OF TEST OF SAMPLE OF PESTICIDE BY GOVERNMENT ANALYST

I (Full name.....
a duly appointed Government Analyst, in terms of section 14 of the Agricultural Pesticides Ordinance, 1971, do hereby make oath and state.....

(1) that on.....I received a sample of.....
from .....for analysis and/or test.

(2) that the sample was labelled, sealed and marked.....

(3) that I have analysed and/or tested the sample and found that (specify details of results of anaylysis and/or test).

Signature of Government Analyst.

Dated.....

FORM 8

[*See* rule 30]

APPLICATION FOR THE TESTING OF A PESTICIDES BY THE PURCHASER

(to be submitted in triplicate)

1. Name of applicant.
2. Address of applicant.
3. Name of pesticide or brand.
4. Name of the manufacturer/formulator/vendor.
5. Registration No.
6. Requirement of tests :

Specification limit

(*i*)
(*ii*)
(*iii*)

I do hereby apply for the testing, in terms of sec. 20 of the Agricultural Pesticide Oridnance, 1971, of the Pesticide of which particulars are given above.

A fee of Rs. .....is being submitted herewith as per Schedule I.

Signature of the applicant.

Dated .....

FORM 9

[*See* rule 30]

REPORT OF THE TEST OR ANAYSIS FOR PURCHASER

1. Name of person from whom sample received.
2. Date of receipt.
3. Name of pesticide or brand.
4. Percentage of active ingredient.
5. Opinion of the Government Analyst :

The sample referred to above is/is not of standard quality as specified.

Signature of Government Analyst..

Dated.....

FORM 10

[*See* rule 33]

INTIMATION TO PERSON FROM WHOM SAMPLE OF PESTICIDES IS TAKEN

To

I have this day taken from the premises of..... situated at.....samples of the pesticides specified below for the purpose of test or analysis.

Details of sample taken.

Signature of Inspector.

Dated.....

FORM 11

[*See* rule 35]

RECEIPT OF STOCK OF PESTICIDES SEIZED UNDER SECTION 24 OF THE AGRICULTURAL PESTICIDES ORDINANCE, 1971.

The stock of pesticides detailed below has this day been seized by me under the provisions of section 22(i) of the Agricultural Pesticides Ordinance, 1971 from the premises of.....situated at.....

Details of pesticides seized giving full inventory of the confiscated material with quantity of each.

Signature of Inspector.

Dated.....

SCHEDULE I

[*See* rule 31]

FEES FOR TEST OR ANALYSIS BY THE GOVERNMENT ANALYST

		Rs.
1.	Fees for test of active material contents	50.00 each
2.	Bioassay test fee	50.00 for each test
3.	Physical properties :	
	(*a*) Suspensibility/emulsion	30.00
	(*b*) Acidity or alkalinity	10.00
	(*c*) Sieve test	10.00
	(*d*) Storage test	30.00
	(*e*) Flash point determination	20.00
	(*f*) Cold storage test	5.00
	(*g*) Any other test	10.00 for each test.
4.	Residue analysis of pesticides	200.00 for each test.

SCHEDULE II

[*See* rule 37]

INSECT PESTS OF VARIOUS CROPS

Scientific name	Common name
1	2
Sugarcane	
Scirpophaga nivella F	Sugarcane top borer.
S. Monostigma Z	Sugarcane top borer.
Chilo spp	Sugarcane stem borer.
Emmalocera depressella Swinh	Root borer.
Pyrilla aberrans K.	Sugarcane pyrilla.
P. Perpusilla Wlk.	Sugarcane pyrilla.
P. pussana Dist.	Sugarcane pyrilla.
Macropes excavatus Dist.	Sugarcane bug.
Aleurolobus barodensis Mask.	Sugarcane white fly.
Saccharicoccus spp.	Pink mealy bug.
Microtermes spp.	Termite.
Odontotermes obesus Ramb.	Termite.
Chrotogonus spp.	Grass hopper.
Oligonychus indicus Hirst	Sugarcane spider mite.
Aphis maidis Fitch	Corn leaf aphid.
Tetranychus spp.	Mite.
Eocurysa flavocapitata M.	Black hopper.
Pseudococcus saccharicola G.	Mealy bug.
Rhopalosiphum (aphis) *padi* L.	Sugarcane wooly aphis.
Repersia sacchari G.	Sugarcane mealy bug.
Argyria staticlcrastis Hampson	Stem borer.

1	2
Jute	
Apion corchori Marsh	.. Jute stem weevil.
Anomis sabulifera Gn.	.. Semi looper.
Diacrisia obliqua Wlk.	.. Hairy caterpillar.
Psudococcus virgatus Ckll ..	.. Mealy bug.
Spodoptera exigua Hb.	.. Army worn.
Brachytrypes protentosus L.	.. Brown cricket.
Tetranychus bioculatus W.M. ..	.. mite.
Tobacco	
Agrotis ipsilon Rott.	.. Tobacco cutworm.
Prodenia litura Pb.	.. Tobacco caterpillar.
Thrips tabaci L.	.. Tobacco thrips.
Gnorimoschema heliopa L.	.. Tobacco shoot borer.
Epitrix spp.	
Hellothis armigera Hbn.	.. Tobacco leaf caterpillar.
Myzus persicae S.	... Tobacco aphid.
Tea	
Helopeltis theivora Waterh.	.. Helopeltis.
Homona coffearia Nietn.	.. Tea.
Saissetia spp.	.. coffee scale.
Oligonychus coffeae Nietn.	.. Red spider mite.
Brevipalus spp.	.. scarlet mite.
Zeuzera coffeae Nietn.	.. Tea stem borer.
Toxopetra aurantii D.	.. Black aphid.
Pacellocoris latus D.	.. Pentatomid bug.
Stauropus alternus W.	.. Tea leaf feeders.
Cotton	
Empoasca devastans Dist.	.. Cotton leaf hopper.
Pactinophora gossypiella Saund. ..	.. Cotton pink bollworm.
Earias spp. (E. fabia Stoll.)	.. Cotton spotted bollworm.
Sylepta derogata F.	.. Cotton leaf hopper.
Bemisia tabaci (gossypiperda M&L.) ..	.. Cotton whitefly.
Thrips tabaci L.	.. Onion thrips.
Aphis gossypii Glov.	.. Cotton aphids.
Microtermes spp.	.. Cotton termite.
Chrotogonus spp.	.. Cotton grass hoppers.
Dysdercus cingulatus Pb.	.. Red cotton bug.
Myllocerus spp.	.. Cotton grey weevil.
Sphenoptera gossypii Kerr.	.. Cotton stem borer.
Oxycarenus hyalinipennis (lactua Kby.)	.. Costa.
Phyclta infusella Meyr	.. Cotton bud caterpillar.
Acheta domesticus L.	.. Black headed cricket.
Myllocerus maculosis M.	.. Cotton grey weevil.
Tetranychus spp.	.. Cotton mite.
Schistocerca gregaria F.	.. Desert locust.
Gryllus bimaculatus Deg.	.. two spotted cricket.
Cerococcus hibisci G.	.. Scale insect.
Pseudococcus virgatus Ckll.	.. Mealy bug.
Anomis flava F.	.. Cotton semilooper.
Heliothis spp.	.. American bollworm.
Gryllus domesticus	.. Black headed cricket.
Euproctus spp.	.. Hairy caterpillar.
Oxycarenus loetus	.. Dusky cotton.
Gryllotalpa africana — —	— Mole cricket.
Paddy	
Tryporyza incertulas Wlk.	.. Yellow stem borer.
Dicladispa (Hispa) armigera Ol. ..	.. Rice hispa.
Spodoptera mauritia Boisd. ... —	... Swarming caterpillar.

1	2
Paddy.—(*Contd.*)	
Pseudaletia spp. (*P. unipuncta*) ..	.. Ear cutting caterpillar.
Sogata distincta Dist.	.. Rice hopper.
Hiereglyphus spp. (*H.banian* Fb.) ..	.. Grass hopper.
Leptocorisa varicornis Fb.	.. Rice bug.
Leptocorisa acuta Th.	.. Rice bug.
Nymphula depunctalis Guen. ..	.. Rice case worm.
Ripersia oryzae G.	.. Mealy bug.
Nephotettix spp.	... Leaf hopper.
Sesamia inferens Wlk.	.. Pink borer.
Chilotraea auricillia D.	... Borer.
Wheat	
Tanymecus indicus Fst.	.. Wheat weevils.
Macrosiphun granarium Kirby. ..	.. Grain aphid.
Eurygaster integriceps Put.	.. Sunn pest.
Microtermes obesi Hole.	.. Termite.
Odontotermes obesus Ramb.	.. Termite.
Sesamia uniformis Dudg.	.. Pink borer.
Chrotogonus spp.	.. Grass hopper.
Acheta domesticus L.	.. Black headed cricket.
Gryllus bimaculatus Deg.	.. Two spotted cricket.
Schistocerca gregaria F.	.. Desert locust.
Maize and Millets	
Pyrilla perpusilla Wlk.	.. Sugarcane pyrilla.
Eurygaster integriceps Put.	.. Sunn pest.
Heliothis spp	.. Leaf caterpillar.
Chila spp.	.. Stem borer.
Hieroglyphus spp	.. Grass hopper.
Acheta domesticus L.	.. Black headed cricket.
Sesamia uniformis W.	.. Pink borer.
Mustard	
Brevicoryne (*Aphis*) *brassicae* Linn. ..	.. Mustard aphid.
Shiphocoryne indobrassicae Das ...	.. Mustard Aphid.
Bagrada picta Pb.	.. Stink bug.
Bagrada cruciferarun Kirk.	.. Stink bug.
Chrotogonus spp.	.. Grass hopper.
Plutella (maculipennis) *xylostella* Curt.	.. Diamond back moth.
Gryllus domesticus L.	.. Brown headed cricket.
Delias eucharis D.	.. Mustard butterfly.
Sesamum	
Diacrisia obliqua Wlk.	.. Hairy caterpillar.
Brachytrypes spp.	
Acherontia styx W.	.. Eastern death's head moth.
Eusarcocoris ventralis W.	..
Fruits	
(*a*) Deciduous Fruits :	
Carpocapsa (Cydia) *Pomonella* L. ...	.. Codling moth.
Euproctis signata Blan.	.. Hairy caterpillar.
Anarsia lineatella Zeller.	.. Peach twing borer.
Quadraspidiotus perniciosus Comst.	.. San jose scale.
Parlotoria oleae Coiv.	.. Olive scale.
Lecanulm corylI L.	.. Peach scale.
Eriochiton amygdalsace Rao ..	.. Soft scales.
Pterochlorus persicae Chodlak. ..	.. Peach aphid.
Eriosoma lanigerum Hausm. ..	.. Wooly aphid.
Anuraphis helichrysi Kalt.	.. Stone fruit aphid.
Myzus persicae Bulz.	.. Green peach aphid.
Batocera rufomaculata De Geer. ..	.. Fig stem borer.
Archips sp	..
Aonidiella aurantii Mask.	.. Callfornia red scale.
Dacus spp. (D. *ferrugineus* Fabr). ...	... Fruit fly.

1	2
Fruits.—(*Contd.*)	
Capnodis spp.	
Lepidosaphes baluchistanensis Rao	Scale.
Aeolesthes sarta Solsky	Quetta borer.
(*b*) Banana :	
Nodostoma viridipennis M.	Leaf and fruit beetle.
Odoiporus longicollis Ol.	Banana stem weevil.
Cosmopolites sordidus Germ.	Banana stem weevil.
Aularches miliaris L.	Spotted grass hopper.
(*c*) Guava :	
Aphis gossypii G.	Guava aphid.
Dacus spp. (D. zonatus S).	Fruit fly.
Strepsicarates rohthis	
Pulvinaria psidi N.	Guava mealy scale.
(*d*) Pomegranate :	
Myllocerus undecimpustulatus Fst.	Pomegranate weevil.
Aonidiella rossi Mask.	Scale.
Deudorix epijarvas Mo.&*Fb. Viracholaisocrates*	Copper butterfly.
(*e*) Coconut & Date Palm :	
Rhynchophorus ferrugineus Ol'	Red palm weevil.
Oryctes rhinoceros L.	Rhinoceros beetle.
Aspidiotus destructor Sign.	Coconut scale.
Gangara thyrsis Mo.	Skippers.
Nephantis serinopa	Coconut caterpillar.
Aularches miliaris Fab. *Parlatoria blanchardi* Targ-Tozz.	Spotted grass hoppers. Scales.
(*f*) Mango :	
Batocera rubus L.	Mango stem borer.
Alcidedes frenatus Fst.	Mango shoot borer.
Cryptorhynchusgravis Fabr.	Fruit borer.
Drosicha stebbingi Gr.	Mango mealy bug.
Idiocerus spp. (*I. Olypealis ; I. atkinsoni*) ..	Mango leaf hopper.
Odonototermes obesus Ramb	Mango termite.
Dacus spp.	Fruit fly.
Strenochetus frigidus F., ...	Mango fruit weevil.
(*g*) Citrus and Orange :	
Aleurocanthus spp.	Black fly of citrus.
Dialeurodes citri Ril. and How.	Citrus white fly.
Diaphorina citri Kuw.	Citrus psylla.
Phyllocristis citrella, Stainton.	Citrus leaf miner.
Papilio demoleus Linn.	Lemon butterfly.
Aonidiella aurantii Mask.	Red scale.
Tetranychus telarius L.	Two spotted spider mite.
Dacus spp.	Fruit fly.
Pseudococcus citri Risso	Citrus mealy bug.
Scirtothrips citri	Citrus thrip.
Rhynchocoris Humeralis Tb.	Orange bug.
(*h*) Pineapples :	
Pseudococcus bromeliae B.	Pineapple mealy bug.
Vegetables	
Aulacophora foveicollis L.	Aulacophora beetle.
Epilachna sp.	Epilachna beetle.
Aphis sp.	aphis.
Dacus cucurbitae	fruit fly.
Pieris brassicae L.	large white butterfly.
Trichoplusia ni Hbn.	cabbage looper.
Plutella (maculipennis) *xylostella* Curt. ..	Diamond backmoth.

1	2
Vegetable.—(*Contd.*)	
Bagrada picta F.	.. Stink bug.
Leucinodes orbenalis Guen.	.. Shoot and fruit borer.
Eublemma olivacea Wlk.	.. Bringjal leaf roller.
Urentius spp.	.. Lace wing bug.
Agrotis spp.	.. cutworm.
Empoasca devastans Dist.	.. cotton leaf hopper.
Thrips tabaci L.	.. onion thrips.
Scirtothrips dorsalis H.	.. Thrips.
Microtermes obesi H.	.. Termite.
Odontotermes obesus Ramp	.. Termite.
Gorldius (Aspongopus) *fannus* Fb. ..	... Stink bug.
Euzophera perticella Rag.	.. Brinjal stem borer.
Heliothis spp.	.. borer.
Prodenia litura F.	.. cotton worm.
Earias fabia Stoll	.. spotted bollworm.
Diachrysia (Plusia) Orichalcea Pb. ...	.. cut worm.
Brachyptrypes protentosus Licht. ..	... cricket.
Acheta domesticus L.	.. Blackheaded cricket.
Phthorimaca (Gnorimoschema) ..	... Timber worm.
Operculella Zoll.	
Euxoa segetum Denis & Schiff ..	... Turnip moth.
Chrotogonus spp.	... Grass hopper.
Tea	
Scientific Name	.. *Common Name*
1. *Oligonychus coffeae* N. ..	.. Red spider mite.
2. *Brevipalpus phoyenicis* Geij ..	.. Scarlet mite.
3. *Laspeyresia leucostoma* Meyr ..	.. Flush worm.
4. *Helopeltis theivora* Waterhouse ..	.. Helepeltis.
5. *Heterobostrychus acqualis* Fb. ..	.. Trunk borer.
6. *Toxoptora aurantii* B.	.. Aphis.
7. *Paccilocoris latus* Dall.	.. Pentatomid bug.
8. *Zeuzera Coffeae* Nietn.	.. Stem borer.
9. *Stauropas alternus* Wlk. ..	.. Leaf feeders.
II. In Storage	
Commodity-wise:	
Callosobruchus spp...	... Cowpea weevil.
(*C. analis*); (*C. maculatus*)	
Ephestia kubniella Zeller, ...	.. Mediterranean flour moth.
Cadra (Ephestia) *cautella*	.. Tropical warehouse moth.
Corcyra cephalonica Stn.	.. Cereal moth.
Laemophloeus spp.	.. Cacujid beetles.
Latheticus oryzae Waterh.	.. Long headed flour beetles.
Lasioderma serricorne F.	.. Cigarette beetles.
Oryzaephilus surinamensis L. ..	.. Saw-toothed grain beetles.
Plodia interpunctella Wbn.	.. Indian meal moth.
Rhyzopertha dominica F.	.. Lesser grain borer.
Sitophilus granaria L.	.. Granary weevil.
Sitophilus oryzae L.	.. Angoumois grain moth.
Trogoderma granarium Everts. ..	.. Khapra beetle.
Tribolium castaneum Hbst.	.. Red flour beetle.
Tribolium confusum F.	.. Confused flou[illegible]

SCHEDUE III

[*See* rule 37]

PLANTS DISEASES AND WEEDS

Scientific Names	Common Names
1	2
(*a*) Diseases	
Wheat (*Triticum vulgare*)	
Alternaria tenuis	On seed.
Cladosporium herbarum	Leaf and ear mould.
Corynebacterium tritici	Bacterial spike [illegible]t.
Erysiphe graminis tritici	Powdery milde
Helminthosporium tritici-repentis	Leaf spot
Macrophoma tritticina	On clums.
Neovossia indica	Partial bunt.
Cochliobolus sativus	Seedling blight, foot rot, leaf spot.
(*Helminthosporium sativum*)	Leaf spot.
Puccinia graminis tritici	Stem or black rust.
Puccinia recondita	Leaf or brown rust.
Puccinia striiformis	Stripe or yellow rust.
Pyricularia oryzae	Leaf spot.
Tilletia caries	Old or complete bunt.
Tilletia foetida	Old or complete bunt.
Urocystis agropyri	Flag smut.
Ustilago nuda	Loose smut.
Septoria tritici	Leaf spot.
Anguina tritici	Ear cockle disease.
(*b*) Rice (*Oryza sativa*)	
Cochliobolus miyabeanus (*Helminthosporium oryzae*)	Seedling and leaf blight.
Leptosphaeria salvinii (*Sclerotium oryzae*) ..	Stem rot.
Pyricularia oryzae	Blast.
Neovossia horrida	Bunt.
Ustilaginoidea virens	False smut.
Trichoconis padwickii	Stack-burn disease, seedling blight and leaf spot.
Melanomma glumarum	On glumes & Clums.
Nigrospora oryzae	Minute leaf and grain spot.
Ditylenchus angustus	Ufra diseases.
Barley (*Hordeum vulgare*)	
Puccinia graminis	Stem rust.
Puccinia striiformis	Stripe or yellow rust.
Ustilago hordei	Covered smut.
Ustilago nuda	Loose smut.
Erysiphe graminis	Powdery smut.
Pyrenophoratores (*Helminthosporium teres*) ..	Net blotch.
Oats (Avena sativa) :	
Puccinia coronata	Crown rust.
Puccinia graminis	Stem rust.
Pyrenophora avenae (*Helminthosporium avenae*)	Seedling rot, leaf spot.
Ustilago avenae	Loose smut.
Ustilago kolleri	Covered smut.
Sorghum (*Sorghum vulgare*)	
Colletotrichum graminicolum)	Red leaf spot.
Helminthosporium turcicum	Leaf blight.
Puccinia purpurea	Rust.
Sphacelotheca cruenta	Loose [kernel] smut
Sphacelotheca reliana	Head smut.
Sphacelotheca sorghi	Grain smut.
Tolyposporium ehrenbergii	Long Smut.

1	2
Maize (*Zea mays*)	
Helminthosporium turcicum	.. Leaf blight. leaf spot.
Macrophomina phaseoli	.. Root rot.
Sphacelotheca reilinna	.. Head smut.
Ustilago maydis	.. Smut.
Diplodia zea	.. Diplodia rot.
Physoderma maydis	.. Brown spot.
Puccinia sorghi	.. Rust.
Scelerospora (philippinensis) ..	.. Downy mildew.
Millet (*Pennisetum glaucum*) :	
Puccinia penniseti	.. Rust.
Tolyposporium penicillariae	Grain smut
Ustilago crameri	.. Smut.
Alternaria tenius	.. Seed rot.
Sugar Cane (*Saccharum officinarum*).	
Ceratocystis adiposam	.. Black rot.
Ceratocystis paradoxa	.. Pineapple diseases.
Cercospora koepkei	.. Brown spot.
Colletotrichum graminicolum ..	.. Red rot.
Gibberella fujikuroi	.. Pokkah-bong.
(*Fusarium moniliforme*)	
Glomerella tucumanensis (*Colletotrichum falcatum*)	.. Red rot.
Ustilago scitminae	.. Whip smut.
Xanthomonas rubrilineans ..	.. Red stripe & top rot.
Cephalosporium sacchari	.. Top rot mold.
Alternaria tenius	.. Cane mould.
Tea (*Camellia siansis*)	
Cercospora theae	.. Leaf spot.
Exobasidium vexans	.. Blister blight.
Glomerella major	.. Anthracnose.
Acanthostoma wattii	.. On twigs.
Asterina camelliae	.. Damping off.
Botryodiplodia theobromae ..	.. Stump rot.
Capnodium theae	.. Sooty mould.
Nectria cinnabrina	.. Die back.
Jute (*Corchorus Olitorius and C. capsularis*) :	
Cercospora corchori	.. Leaf spot.
Macrophomina phaseolia ..	.. Root rot.
Diplodia corchori	.. Stem root.
Sclerotium rolfsii	.. Root rot.
Cotton (*Gossypium sp.*)	
Colletotrichum indicum	.. Anthracnose and boll spot.
Corticium solani (*Rhizoctonia solani*)	.. Root rot.
Fusarium oxysporum vasinfectum ..	.. Wilt.
Macrophomina phaseolina	.. Root rot.
Phona gossypii	.. Die back.
Alternaria gossypina	.. Leaf spot.
A. macrospora	..
Cercospora gossypii	.. Leaf spot.
Chaetomium aureum.	.. Seed rot.
Trichotheclum roseum	.. Pink mold rot.
Xanthomonas malvacearum ..	.. Angular leaf spot.
Tobacco (M. Nicotiana tabacum) :	
Alternaia longipes	.. Leaf spot.
Alternaria tabacina	.. Leaf spot.
Cercospora nicotianae	.. Frog eye spot.
Corticium solani (*Rhizoctonia solani*)	.. Damping off.
Macrophomina phaseolina ..	.. Root rot.
Mosaic virus	.. Mosaic.
Phthium debaryanum	.. Damping off.
Leaf curl virus .. — —	— Leaf curl.

1	2
CITRUS sp	
Colletotrichum gloeosporioides ..	.. Wither tip.
Fusarium solani	.. Wilt.
Macrophomina phaseolina	.. Stem and root rot.
Phoma sp	.. On leaves.
Xanthomonas citri	.. Canker, bacterial canker.
Meliola sp.	.. Sooty mould.
Alternaria citri	.. Leaf spot.
Capnodium citri	.. Sooty mould.
Curvularia lunata	.. on leaves.
Citrus psoresis virus ..	.. un-identified virus.
Cladosporium herbarum citricola ..	.. Sooty mould.
Curvularia lunata	.. on leaves.
Pleospora herbarum	— on leaves, twigs.
APPLE (*Pyrus malus*).	
Coniothecium chomatosporum ..	.. Die back.
Penicillium expansum	.. on fruit.
Venturia inaequalis	.. Scab.
Cytospora sp	.. Die back.
Podosphaerea leucotricha	.. Powdery mildew.
PEAR (Pyrus communis) :	
Cytospora sp	.. Die back.
Fomes senex	.. Wood rot.
Phyllactinia gullata	.. Powdery mildew.
PEACH (*Prunus persica*) —	...
Macrophomina phaseolina	.. Root rot.
Taphrina deformans	.. Leaf curl.
Cladosporium carpophilum ..	.. Sooty mould.
Polyporus ostreiformis	... Wood rot.
Sphaerotheca pannosa	.. Powdery mildew.
Tranzschelia prunispinosae	.. Rust.
Almond (Prunus amygdalus) :	
Phyllactinia salmonii	... Powdery mildew
Stigmina carpophila	.. on leaves.
Tranzschelia prunl-spinosae	.. Rust.
Sphaerotheca Pannosa	... Powdery mildew.
GRAPE (Vitis vinifers):	
Cladosporium roesleri .. —	— Grey mould.
Dendrophoma pleurospora	.. on twigs.
Gloeosporium rufomaculans	.. on fruits.
Pseudocercospora vitis	.. Leaf spot.
Carcospora vitisum	.. leaf spot.
Diplodia viticola	.. Die back.
Plasmopara viticola	.. Downy mildew on leaves.
Uncinula necator	.. Powdery mildew.
MANGO: (Mangifera indica):	
Botryodiplodia mangiferae	... Die back.
Colletetrichum gloeosporioides ..	... Anthracnose.
Pestalotiopsis mangiferae	.. Leaf spot.
Capnodium ramosum	.. Sooty mould.
Cocomyces villis	.. on leaves.
Coleophoma mangiferae	.. on leaves.
Hexagona discopoda	.. Wood rot.
Ganoderma applenatum	..
Starbaecklella mangiferae	.. On trunk.
GUAVA (Psidium guajava):	
Gloeosporium sp.	.. Sooty mould.
Pestalotia psidii	.. Die back.
Phoma psidii	.. Die back.
Cladosporium sp	.. Sooty mould.

1	2
PAPAYA (Carica papaya) :	
Alternaria tenuissima	Leaf spot.
Macrophomina phaseolina	Root rot.
Pythium aphanidermatum	Damping off.
Phyllosticta sulata	Leaf spot.
BANANA (Musa sapientum):	
Diplodia musae	Fruit rot.
Cercospora musarum	Leaf spot.
Pestalotiopsis leprolegna	Leaf spot.
COCONUT (Cocas nucifera)	
Ganoderma lucidum	Wood rot.
Pestalotiopsis palmarum	Grey leaf blight.
Polyporus ostriformis	Wood rot.
PINEAPPLE (Ananas comosus):	
Asterinella stuhlmanni	on leaves.
Ceratocystis paradoxa	Root and stem rot.
POTATO (Solanum tuberosum):	
Fusarium oxysporum tuberosi	Wilt.
Mabrophomina phaseolina	Root rot.
Phytophthora infestans	Late blight.
Sclerotium rolfsii	on tubers.
Alternaria solani	Early blight.
PEA (*Pisum sativum*) :	
Cercospora pisisativae	Leaf spot.
Corticium solani (*Rhizoctonia solani*) ..	Root rot.
Erysiphe polygoni	Powdery mildew.
Fusarium oxysporum	Wilt.
Uromyces fabae	Rust.
BRINJAL (*Solanum melongena*).	
Alternaria tenuissima	Leaf spot.
Cercospora solanacea	Leaf spot.
Macrophomina phaseolina ..	Root rot.
Mosaic virus	Mosaic.
Phoma solani	Die back.
TURNIP (*Brassica rapa*)	
Albugo candida.	White rust.
Peronospora brassicae	Downy mildew.
Macrophomina phaseolina	Root rot.
LETTUCE (*Lactuca scariola*)	
Bremia lactucae	Downy mildew.
Septoria lactucae	Leaf spot.
CHILLIES (*Capsicum annuum*)	
Colletotrichum, capsici	Die back.
Gloeosporium piperatum Mottling virus ..	Anthracnose.
Pythium aphanidermatum	Damping off.
ONION (*Allium cepa*)	
Alternaria tenuis	Seed rot.
Macrosporium cladosporoides ..	Purple blotch.
Phyllosticta Sp.	Leaf spot.
Puccinia allii	Rust.
Puccinia porii	
HEMP (*Cannabis sativa*)	
Cercospora canabinna	Leaf spot.

1	2
Peronospora cannabina	Downy mildew.
Septoria cannabis	Leaf spot.
Flax (*Linum usitatissium*)	
Fusarium oxysporum f. sp. lini	Wilt.
Melampsora lini ..	Rust.
Odium lini	Powdery mildew.
Mash (*Phaseolus mungo*)	
Ascochyta phaseolorum	Blight.
Macrophomina phaseoli	Root rot.
Arhar, Pigeon Pea (*Cajanus cajan*) ..	
Cercospora indica	Leaf spot.
Fusarium oxysporum vastinfectum ..	Wilt.
Phyllosticta cajanicola	Leaf spot.
Macrophoma cajani	Twig blight.
Groundnut (*Arachis hypogaea*)	
Alternaria tenuissima	Leaf spot.
Mycosphaerella arachidicola (*Cercospora arachidicola*) ..	Leaf spot.
Myosphaerella berkeleyii (*Cercospora personata*)	Leaf spot.
Maccrophomina phaseolina ..	Root rot.
Sugar Beet (*Beta vulgaris*)	
Alternaria tenius	Seed rot.
Cercospora beticola	Leaf spot.
Melanospora theleboloidea ..	Rust.
Stemphylium consortiale	Seed rot.
Clover (*Trifolium resupnatum*)	
Polythrincium trifolii	Sooty blotch.
Peronospora trifoliirepentis ..	Downy mildew.
Physoderma trifolii	Brown leaf spot.
Uromyces minor	Rust.
Uromyces trifolii	Rust.
Betel vine (*Piper betle*)	
Corticium solani (*Rhizoctonia solani*) ..	Root rot.
Pestalotiopsis gracilis	Leaf spot.
Phragmocapnias betle	On leaves.
Phytophthora parasitica	Leaf & stem rot.
Fusarium sp.	Root rot.
Helminthosporium sp.	Blight.

Scientific Name	English name	Vernacular/common name
1	2	3
(*b*) Weeds.		
Wheat		
Amaranthus sponosus	Pigweed.	Khardar chauli.
Asphodelus tenuifolius	—	Piazi.
Carthamus oxyacantha	—	Poli.
Chenturia cyanus	—	—
Chenopodium album	Fat hen	Bathu.
Chenoposium murale	—	Kurand.
Cirecium arvense	—	Kandiari.
Convolvulus arvensis	Bindweed	—
Coustnia minuta	—	Kandiari.
Euphorbia helioscopia	Sunsupurge	Cha-dni dodhak.
Euphorbia prostrata	—	Maina.

1	2	3
Wheat (Contd)		
Medicago denticulata	—	Maina.
Melilotus indica	—	Sinjee.
Vicia sativa	Common Vetch	Rari, Rawari.
Cressa cretica	—	Rudanti.
Corchorus trilocularis	—	Bahkara.
Fagonia cretica	Prickly clover.	Jawansa.
Portulaca oleraceo	Purslane	Khurfa.
Paddy :	*English Name*	*Vernacular/common name.*
Ammania senegalensis	—	—
Cyperus rotundus	Nutsedge	Deela, Motha.
Digitaria sanguinalis	—	—
Eichoraia crassipes	—	—
Fimbristylis milliacea	—	Barajavani.
Panicum rapens	Witch grass	Baranda.
Paspalum distichum	—	Naru.
Sagittaria gua-yanensis	—	Janter.
Sesbania aculeata	—	—
Sporobolus diander	—	—
Cotton		
Achyranthus aspera	—	Latzira.
Aerua Javanica	—	—
Amaranthus viridis	Pigweed	Chaulai.
Boerhaaia repens	Spreading hodweed	Thikri.
Cenchrus biflorus	—	—
Citrullus colocynthis	—	Hanzal.
Conyzastrictas	—	—
Cyperus rotundus	Nutsedge	Deela, Motha.
Digera arvensis	—	Tandla.
Euphorbia pilulifera	—	—
Sesbania aegyptiaca	—	Janter.
Sorghum halepense	Johnsongrass.	Dub.
Tribulus terrestris	—	Bhakara.
Withania somnifera	—	Akson.
Phyllanthus niruri	—	Bhueamla.
Carchorus trilocularis	—	—
Sugarcane		
Amaranthus blitum	Pigweed	Chaulai.
Argemone mexicana	Prickly poppy	Sialkanta.
Cenchrus setigerus	—	—
Convelvulus arvensis	Field bind weed.	Lehli.
Cynodon dactylon	Bermudagrass	Dub Khabbal.
Cyperus rotundus	Nut sedge	Deela, Motha.
Digera arvensis	—	Tandla.
Euphorbia Pilulifera	—	—
Euphorbia 'prostrata	—	Laldhudi.
Launea nudicaulis	—	Pilidodhak.
Portulaca oleracea	Purslan	Khurfa.
Sesbania aegyptiaca.		Janter.
Tribulus terrestris	—	Bhakara.
Withania somnifera		
Physalis minima .. .. —	—	—
Trienthema pentandroa	Ground cherry.	Akson.
Cousinia minuta	—	Aknaj.
Sorghum halepense	—	Ghandni dodhak.
.. .. ..	Johnson grass	Baru.

SCHEDULE IV

[*See* rule 37]

OTHER ANIMAL PESTS INFESTING AGRICULTURAL CROPS

Scientific Names	Common Names
Mammals :	
(*i*) Rodents :	
Petaurista petaurista	Flying squirrel.
Hystrix indica	Indian Crested Porcupine.
Allactaga elater	Five-toed Jarboa.
Millardia meltada.	Soft-furred Field Rat.
Rattus norvegicus	The Common or brown or sewer rat.
Rattus rattus	The Ship or black rat.
Mus musculus	The House mouse.
Mus platythrix	The Brown spiny mouse.
Golunda elliotti	The Indian bush rat.
Bendicota bengalensis	The lesser bandicoot.
Nesokia indica	The Short-tailed mole rat.
Tatera indica	The Indian Gerbil.
Meriones spp	The Desert Gerbil.
(*ii*) Other mammals	
Canis aureus	Jakal.
Vulpes spp	Fox.
All types	Squirrels.
Allactaga spp :	Jerboa.
Al' types	Rabbit and Hare.
Sus scrofa	Indian Wild Boar.
Birds	
Psittaculs spp :	Parrots of Parakeets.
Passer spp	Sparrow.
Emberiza spp	Bunting.
Estrilda amandava.	Tiger Finches or Red Munia.
Lanchura spp	Munia.

SCHEDULE V

[*See* rule 38]

POISONS

Acrylonitrile.
Aldicarb.
Aldrin.
Allethrin.
Aluminium phosphide.
Ametryne.
Amidithion.
Amiton.
Antu.
Aramite.
Arsenious oxide.
Arsenic trioxide.
Atrazine.
Azinphos ethyl.
Azinphos methyl.
Barium carbonate.
Benomyl.
BHC
Binapacryl.
Bordeaux mixture.

Bromophos ethyl.
Bromophos methyl.
Buturon.
Calcium cyanide.
Calcium arsenate.
Camphechlor.
Captan.
Carbaryl.
Carbofuran.
Carbon disulphide.
Carbon tetrachloride.
Carbophenothion.
Carboxin.
Chlorbenside.
Chlordane.
Chlorfenvinphos.
Chlorobenzilate.
Chlorophacinone.
Chlorphenamidine.
Chlorpropham.
Chloropicrin.
Chlorthal-Methyl.
Chlorthiamid.
Copper arsenate.
Copper cyanide.
Copper naphthenate.
Copper sulphate.
Copper oxychloride.
Coumachlor.
Coumaphos.
Couma tetralyl.
Cuprous oxide.
2, 4-D
Dalapan-Na.
DDD/TDE.
DDT.
Demeton.
Demeton-methyl.
Desmetryne.
Diazinon.
Dibromochloropropane.
Dicamba.
Dichloropropane-dichloropropene mixture.
Dichloropropane.
Dichlorovos.
Dicofol.
Dicrotophos.
Dieldrin.
Dimefox.
Dimetilan.
Dimethioate.
Dinobuton.
Dinocap.
Dinoseb.
Dinoseb acetate.
Dioxathion.
Diquat dibromide.
Disulfotan.

Dithianon.
Diuron.
DNOC
Dodine.
Drazoxolon.
DSMA (Disodium methane arsonate).
Dimethirimol.
Dinoterb acetate.

Endosulfan.
Endothal.
Endothion.
Endrin.
EPN.
Erbon.
Ethion.
Ethoate methyl.
Ethylene dibromide.
Ethylene dichloride.
Ethylene dichloride carbontetrachloride mixture.

Fenchlorphos.
Fenitrothion.
Fenoprop.
Fenson.
Fensulfothion.
Fenthion.
Fentin acetate.
Fentin hydroxide.
Fenuron.
Ferbam.
Fluometuron.
Fluorodifen.
Formaldehyde.
Formothion.
Fuberidazole.

Heptachlor.
Hexachlorobenzene.
Hydrogen cyanide/Hydrocyanic acid.
Hydrogen phosphide.

Lead arsenate.
Lenacil.
Lime sulphur.
Lindane.
Linuron.

Malathion.
Maleic Hydrazide.
Mancozeb.
Maneb.
MCPA.
MCPB.
Menazon.
Mecarbam.
Mecoprop.
Medinoterb acetate.

Mercuric Chloride.
Mercurous Chloride.
Metaldehyde.
Metha-benzthiazuron.
Metham sodium.
Methidathion.
Methiocarb.
Methiuron.
Methomyl.
Methoprotryne.
Methoxychlor .
Methoxy ethyl mercury Chloride.
Methyl bromide.
Methyl mercury Chloride.
Methyl Parathion.
Metobromuron.
Metoxuron.
Mevinphos.
Monocrotophos.
Monolinuron.
Monuron.

Nabam.
Naled.
Naptalam.
Niclosamide.
Nicotine sulphate.
Nitrofen.
Norbormide.
Noruron.
Uoburon.

Omethoate.
Oxine Copper.
Oxycarboxim.
Oxydemeton methyl.
Oxydisulfoton.

Para-dichloro benzene.
Paraquat.
Parathion.
Paris green.
Pebulate.
Pentachlorophenol.
Pentanochlor.
Petroleum oils.
Phenthoate.
Phenyl mercury acetate.
Phorate.
Phosalone.
Phosmet.
Phoxim.
Picloram.
Pindone.
Piperonyl butoxide.
Potossium Cyanate.
Promecarb.
Prometon.

Promctryne.
Propachlor.
Propanil.
Propazine.
Propham.
Propinebs.
Propoxur.
Prothoate.
Pyrethrins.
Phosphamidon.
Quinomethionate.
Quintozone.

Rotenone.
Ryonia.
Sabadilla.
Schradan.
Siduron.
Simazine.
Sodium Fluoro acetate.
Streptomycin.
Strychnine.
Sulfallate.
Sulfotep.
Sulphoxide.
Sulphur.

2,4, 5-T.
TCA
TEPP
Tetrachlorvinphos.
Tetradifon.
Tetramethrin.
Tetrasul.
Thiometon.
Thioquinox.
Thiram.
Triallate.
Trichloronate.
Trichlorphon.
Trifluralin.

Vamidothion.
Warfarin.

Zinc phosphide.
Zineb.
Ziram.

SCHEDULE VI

[*See* rule 39]

SYMPTOMS OF POISONING, FIRST-AID AND ANTIDOTES

Chlorinated hydrocarbon insecticide

Symptoms.—These insecticide affect the central nervous system leading to convulsions, exhaustion. Numbness of extremities, apprehensions and excitement are other symptoms of poisoning from these insecticides.

First-Aid.—As absorption through skin is most likely route of poisoning, it is essential to wash off the contaminant from the body with soap and water and remove the soiled clothing. In case of ingestion evacuation of stomach is necessary.

Antidotes.—Usual antidotes are paraaldehyle or a water soluble barbiturate given intramuscularly or thiopentone or diazepam administered intravenously.

Organophosphates and carbamate insecticides

Symptoms.—These compounds depress cholinestrase enzyme activity in the body tissue, blood and brain. Usual symptoms of intoxication are muscular trembling, weakness, coldsweat, nausea, vomitting, abdominal discomfort, irritability or restlessness coupled with constricted pupil/ pupils and a feeling of tightness in chest.

First-Aid.—Necessary steps may be taken immediately to decontaminate the patient. If exposure is mild the effect will be transient. In severe cases death may occur. Keep the patient at rest and maintain respiration by artificial means, if necessary. Immediate steps may also be taken to hospitalise the patient.

Antidotes.—If symptoms are obvious first dose of two tablets of atropine sulphate (of 0.6 mg strength each) may be administered by giving one tablet each at an interval of 20-30 minutes.

Fumigants

Cyanides.—Symptoms.—Slight poisoning causes metallic taste in the mouth, irritation of the nose and throat, dizzinesss, frontal headache, constriction of chest weakness of limbs and a sensation of lack of air. These symptoms appear within a few seconds or minutes of exposure and if these warnings are ignored and if immediate treatment is not made available death may follow quickly.

First-Aid.—Remove the patient from the contaminated area. Keep at rest and remove contaminated clothing and wash skin thoroughly. Start artificial respiration.

Antidotes.—Cobalt EDTA or sodium nitrate and soduim thiosulphate are standard antidotes. Treatment should be given by a medical practitioner.

Methyl bromide.—Symptoms.—Burning of skin, oedema of lungs and central nervous system disorders are obvious symptoms. Warning symptoms of exposure are irritation of eyes and throat, headache and abdominal discomfort.

First-Aid.—Contaminated clothing, shoes and skin must be washed off promptly. Call Medical practitioner for assistance or hospitalise the patient at once.

Antidotes.—Where exposure is mild recovery will take place without special treatment. In other cases, BAL is recommended to be tried as antidote. Treatment should therefore be symptomatic

Ethylene dichloride.—Symptoms.—Effects are narcotic and cause renal and liver damage and the irritation of mucous membrances.

Antidote.—No specific antidotes are available Therefore treatment should be symptomatic.

Ethylene dibromide.—Symptoms.—Blistering occurs on contact with skin Causes irritation of mucous membrane.

First-Aid.—Splashes should be washed from the skin and contaminated clothing removed.

Antidote.—Symptomatic treatment may be provided becuase of absence of any specific antidotes.

Phosphene.—Symptoms.—Effects gastrointestinal tract and central nervous system with nausea, abdominal pain, vomitting and diarrhoea.

Antidote.—No specific antidotes are available which calls for symptomatic treatment.

Herbicides

Phenoxy acetates.—Symptoms.—Hypersalivation, cramps, vomitting and diarrhoea, convulsions and mental confusion are obvious symptoms.

First-Aid.—Contaminated clothing should be removed and skin washed thoroughly with soap and water.

Treatment.—No specific antidotes are available, therefore, treatment must be symptomatic.

Organo-mercurial fungicides.—Symptoms.—Among organic mercurials alkyl compounds (with alcohol radical) are more toxic than aryl compounds (with phenol radical). Acute effect of both compounds cause skin burn with redness and blisters and irritation of mucous membranes. Systemic absorption causes renal damage and digestive system symptoms.

Chronic toxicity from alkyl compounds cuases widespread damage of central nervous system.

First-Aid —Wash skin thoroughly with soap and water and remove contaminated clothings.

Antidote.—In acute systemic poisoning stomach may be washed out. Therapy may be tried with dimercapral (BAL) intramuscularly, or with oral doze of 250 mg of N-acetyl penicillamine, four times daily. Drugs may be administered by a medical practioner

Inorganic mercurial fungicides —Symptoms.—Mercuric chloride causes coagulation, irritation and superficial corrosion of the tissue resulting in discoloration of mucous membranes. Internal abdominal pains with vomitting follows. Circulatory failure may also occur. Mercurous chloride is much less toxic.

First-Aid.—Stomach may be washed with 5% solution of formaldehyde sulphoxy-late. Remove clothing and wash body and hair thoroughly.

Antidote.—Treatment with dimeraprol (BAL) or preferably Nacetyl pencillamine proves effective. Treatment should be provided by a medical practitioner.

PRINTED BY THE MANAGER, PRINTING CORPORATION OF PAKISTAN PRESS ISLAMABAD 5
PUBLISHED BY THE MANAGER OF PUBLICATIONS, KARACHI