



THE GLOBAL STANDARD
FOR LIVESTOCK DATA

Procedure 4 of Section 10 of ICAR Guidelines - Testing of Conventional Plastic Ear Tags

Testing Plastic Ear Tags

Version February, 2018

Network. Guidelines. Certification.

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Change Summary

Date of Change	Nature of Change
August 2017	Changed Section title to 'Testing of Conventional Plastic Ear Tags'.
August 2017	Removed references to EN ISO 4892-3 and ISO 7724 (Table 1).
August 2017	Changed certification code from "C" to "A" (section 4.1)
August 2017	Merged two application forms for Device Change Notification into one.
August 2017	Added reference to the Device Change Notification – DCN (section 5)
September 2017	Added template and standardised.
October 2017	Updated version to October. Corrected typos. Updated and corrected cross references.
February 2018	On Saturday 10th February, changes approved by the ICAR General Assembly in Auckland, New Zealand.

1 Introduction

This section will guide the manufacturer through the steps of initially obtaining and then retaining ICAR certification for a conventional permanent plastic ear tag.

The ICAR procedures for testing the performance and reliability of permanent identification devices considers, but is not limited, to the following issues:

- a. Ease of application and use.
- b. Efficiency of animal recognition.
- c. Durability and tamperproof quality.
- d. Animal welfare and human health.

The following procedures focus on testing the ear tag design, the print quality and, if requested, the ear tag machine readability.

The testing procedure is composed of three distinct phases:

- a. Phase 1: Manufacturer's application (section 5.1).
- b. Phase 2: Preliminary Assessment (section 5.2).
- c. Phase 3: Laboratory Test - Technical Evaluation (section 5.4).

These test procedures must be carried out by an ICAR accredited test laboratory. The fees for these test procedures will be borne by the device manufacturer.

When an ear tag is certified by ICAR, the manufacturer will be authorized to state that tags of that particular design and printing method are ICAR certified. ICAR certification does not imply that the tag is suitable for all environments or that its machine-readable characteristics are satisfactory for all uses. It is the manufacturer's responsibility to comply with the requirements of the relevant jurisdictions.

A successfully tested product can have its certification withdrawn if the product fails to comply with the requirements described in this section. ICAR and/or national authorities may randomly take samples of certified tags from the market and subject them to testing to ensure certified ear tags continue to meet ICAR certification criteria. The manufacturer will be required to meet the costs of these assessments should the product fail to meet ICAR standards.

The manufacturer must advise ICAR of any sub-standard performance of ICAR certified products not in accordance with their previous test results. The manufacturer must also inform ICAR of any change to the composition or the print quality of a certified ear tag.

Users of ear tags and / or potential users of ear tags are encouraged to access the list of certified tags found on the ICAR web site (the page available [here](#)).

2 Scope

This section describes the evaluation procedures for measuring the composition and the performance of conventional permanent plastic ear tags which may include machine readable printing.

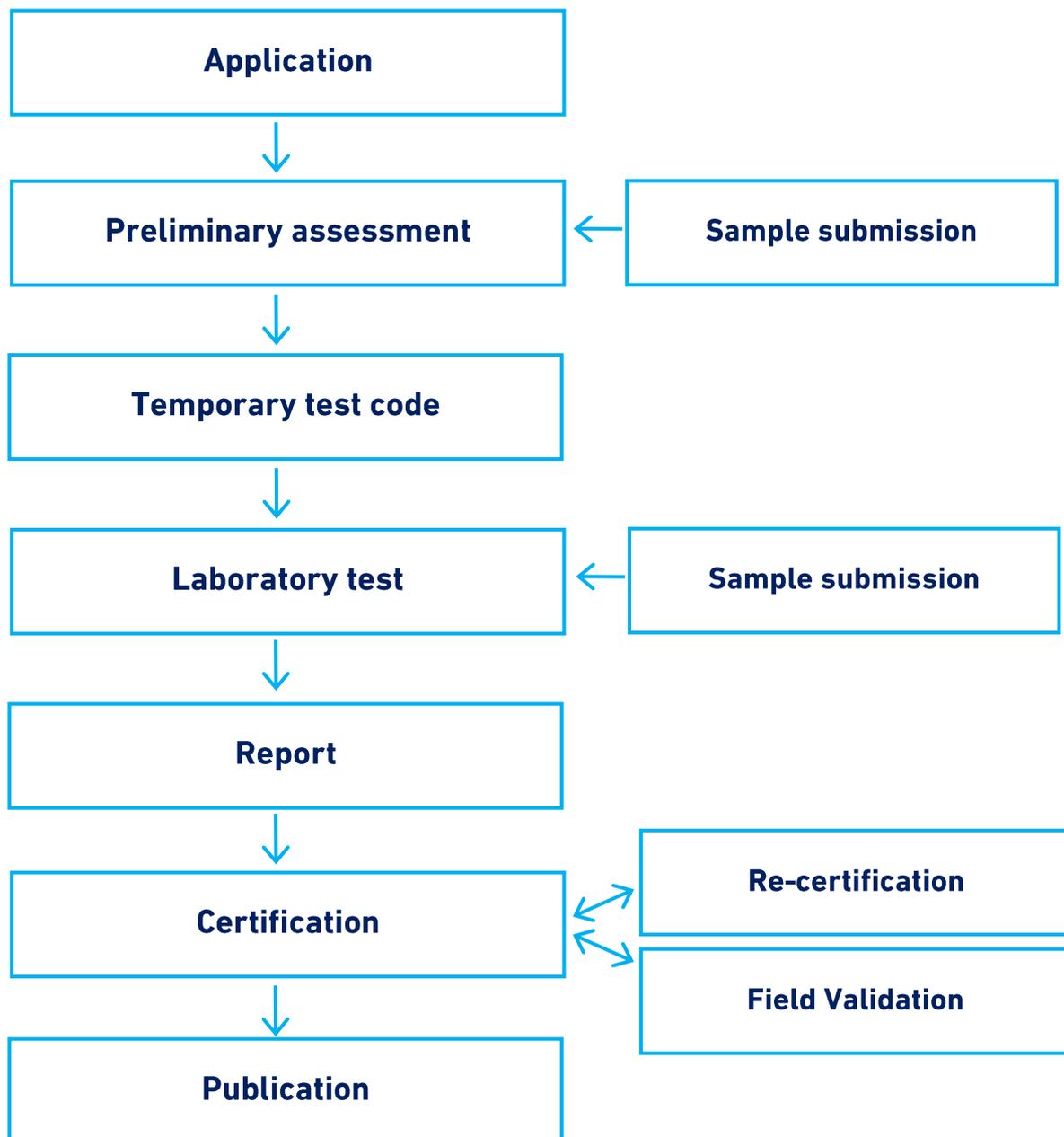
When a manufacturer submits an ear tag to ICAR for testing, they may also choose to have the machine readability of the ear tag evaluated according to this protocol. If no request is

made to evaluate the machine readable printing of the submitted ear tag, then only the visual readability will be evaluated.

Successful completion of the procedures described in this section will result in the ICAR certification of the ear tag as a device recommended by ICAR for animal identification purposes. ICAR certified ear tags are published on the ICAR website as certified visual identification devices.

Figure 1 gives a pictorial summary of the main elements of the testing and certification process of conventional ear tags

Figure 1. Key steps for the testing and certification of conventional ear tags



3 References

Table 1. References to relevant standards.

ISO 175	Resistance of thermoplastics to liquids
EN 1122	Plastics - Determination of cadmium - Wet decomposition method
ISO 1817	Resistance of vulcanized elastomers to liquids
ISO 4650	Rubber - Identification - Infrared spectrometric method
ISO 9924	Determination of composition of vulcanized elastomers
ISO 11357	Plastics - Differential scanning calorimetry (DSC)
ISO 9352	Plastics - Determination of resistance to wear by abrasive wheels
ISO 527-1	Plastics - Determination of tensile properties part 1: General principles
ISO 37	Rubber, vulcanized or thermoplastic - Determination of tensile stress-strain properties
ISO 4611	Plastics - Determination of the effects of exposure to damp heat, water spray and salt mist
EN ISO 4892-2	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps
ISO 15416	Information technology - Automatic identification and data capture techniques - Bar code print quality test specification; Linear symbols
ISO 11664-4	Colorimetry - Part 4: CIE 1976 L*a*b* Colour space

The latest version of the above references will always apply.

4 Definitions

4.1 Certification code

A certification code is an alpha-numeric code consisting of "A", followed by three numbers. The certification code is used to identify and register an ear tag model that has successfully passed the testing procedure. This code may be embossed on all ICAR certified ear tags for official identification. The placement of the certification code on the ear tag should conform to the relevant jurisdictional requirements in whatever locality the ear tag is sold.

4.2 Certified ear tag

A certified ear tag is an ear tag described in the Application Form that was submitted to the ICAR accredited test centre where it successfully passed the testing procedures and was thus certified by ICAR.

4.3 Ear tag

An ear tag is deemed to be composed of three principal features:

- a. The front plate which is often, but not always, the "female" component of an ear tag combination. The front plate is designated as such because it will be in the front of the animal's ear when the ear tag combination is applied correctly.
- b. The rear plate which is often, but not always, the "male" component of an ear tag combination. The rear plate is designated as such because it will be at the back of the animal's ear when the ear tag combination is applied correctly.
- c. The locking mechanism which comprises of the locking gap in the female component of an ear tag and the pin of the male component of the ear tag combination.

4.4 Manufacturer

The manufacturer is the company or person submitting the application for the testing of an ear tag and has accepted the ICAR conditions for certification of conventional permanent plastic ear tags as outlined in section 5.4.6.

4.5 Reference colour

The colour of the ear tags used in the laboratory tests must be yellow and the colour of the printing must be black. The manufacturer must print a uniform solid block 10mm x 10mm in the same colour as the colour of the printing on the tag.

4.6 Reference number

Printing must be composed of four different and predefined figures (from 0 to 9) as outlined in [Appendix B3](#). The font style and size must replicate precisely the font style and size the manufacturer commonly uses on that tag within the market.

For the ear tags where machine readability will be assessed a 12-digit barcode must be printed on the tags in addition to the reference number. The 12-digit barcode consists of the three numbers of the test code as defined in section 4.7 followed by zeroes and the reference number.

4.7 Test code

The test code is an alpha-numeric code consisting of "T" (for tested), followed by 3 numbers.

The test code is used to identify and register an ear tag model being tested in the field under the approval procedure. This code must be printed or engraved on all ear tags undergoing testing during the approval procedure.

4.8 Tested Ear tag

A tested ear tag is an ear tag described in the Application Form that was submitted to the ICAR accredited test centre and subsequently tested.

5 ICAR testing and certification procedure**5.1 Phase 1: Manufacturer's application**

To submit an ear tag for ICAR testing within the scope of the tests described in this section, the manufacturer must complete an application and email it in PDF format to the Service-ICAR secretariat. The email address of the Service-ICAR secretariat is:

manufacturers@icar.org

The application must consist of:

- a. A letter of application.
- b. An Application Form ([Appendix B1](#) or [Appendix B2](#)):
 - [Appendix B1](#) is the application form for the certification of a new device or re-certification of an already certified device.
 - [Appendix B2](#) is the application form for the certification of a device modified during its certification. (Please refer to section 5.4.6 for information on the Device Change Notification)

Copies of the required application forms can be obtained from the ICAR website or from the ICAR secretariat.

When a manufacturer chooses to have the machine readable printing on the ear tag evaluated, the manufacturer must indicate this choice on the completed Application Form. The application should also specify the symbols (language) used on the tag, e.g. Quick Response (QR) Model 2, Data Matrix (DM) ECC 200, Aztec, Code 128, Code 39 or Interleaved 2 of 5. The applicant should also indicate if the AIM (Automatic Identification Manufacturers International Inc) quality standards (code dimensions) have been met.

By signing the application form, the manufacturer agrees to fulfil the conditions of ICAR testing, certification and payment obligations and also acknowledges the ongoing monitoring and assessments for certified ear tags.

5.2 Phase 2: Preliminary assessment

To assess conformance of the ear tags with the information given in the application form and to also detect any major failure, e.g. damage of the tag at application, possible unlocking without deformation, inappropriate animal welfare design etc. the ear tags will be submitted to a Preliminary Assessment.

The Preliminary Assessment procedure is also applied to a device for which the manufacturer is requesting re-certification.

Refer to [Appendix B4](#) for details.

5.3 Conclusion of the Preliminary assessment

The test centre will prepare a comprehensive report detailing the results of the submitted ear tag's performance in the Phase 2 Preliminary Assessment. This report will be submitted to ICAR who will then forward the test report to the manufacturer.

If the Phase 2 testing is successful, then the manufacturer will be asked to confirm their willingness to proceed to the Phase 3 Laboratory test.

If a device has not performed satisfactorily, ICAR will provide the manufacturer with the test report and indicate the reasons for the tag's failure.

5.4 Phase 3: Laboratory Test - Technical Evaluation

5.4.1 Assigning a test centre

Following the successful completion of the Preliminary Assessment and the decision of the manufacturer to proceed to the Phase 3 Laboratory Test, Service-ICAR will assign one of the accredited test centres to carry out the Phase 3 Laboratory Test

5.4.2 Granting of a test code

A specific test code will be allocated by ICAR for the ear tag undergoing testing. The manufacturer will be advised of the test code and the manufacturer must print or engrave this code on each ear tag produced for the Phase 3 Laboratory Test.

5.4.3 Manufacturer requirements

At the commencement of Phase 3, the manufacturer must deliver the following items to the assigned test centre (in addition to the items listed in [Appendix B4. Preliminary Test for Conventional Plastic Ear Tags](#)):

- a. 200 yellow ear tags with the test code number and the reference printing applied (including the uniform solid block described in 10.7.4.5). For tags where the machine readability is to be assessed, a 12-digit barcode must also be printed on the ear tag. Note: the manufacturer will be allocated 25 reference numbers to print on the 200 ear tags, i.e. 8 tags per reference number ([Appendix B3](#)).
- b. A statement specifying the nature of the polymer used for the ear tag, e.g. thermoplastic elastomers, vulcanized elastomer etc.

5.4.4 Test procedure

The test procedure to be followed for Phase 3: Laboratory Test – Technical Evaluation is described in [Appendix B5](#).

5.4.5 Conclusion of the laboratory test

The test centre will prepare a test report and will submit it to Service-ICAR which will then forward it to the ICAR Sub-Committee for Animal Identification for comment. All information collected during the laboratory tests will remain confidential and only disclosed to the manufacturer of that ear tag.

Upon the successful completion of the Phase 3 Laboratory Testing, ICAR will send the test report and an official letter to the manufacturer granting ICAR certification for that ear tag.

If the manufacturer had requested an evaluation on the machine readability of the ear tag, then this evaluation will also be included in the test report.

Each test report on a successfully tested tag will include a summary sheet with an evaluation of the appropriate suitability of the ear tag for various production systems and / or environmental conditions.

If the Phase 3 Laboratory Test results are unsatisfactory, ICAR will send the manufacturer the test report indicating the reasons for the failure.

5.4.6 ICAR conditions for certification of conventional permanent plastic ear tags

- a. Upon successful completion of the ICAR test procedures described above, ICAR will grant a device certificate valid for five years and a certification reference number.
- b. This certification is valid only for the specific plastic ear tag type successfully tested and certified by ICAR.
- c. A manufacturer cannot utilise the ICAR certification for a plastic ear tag:
 - Which is not manufactured by them; or
 - Which does not comply in all respects to the ICAR certification which includes maintaining an identical tag type to the certified tag.
- d. Once the ICAR certificate has been granted, the manufacturer will be responsible to:
 - Keep an accurate and detailed log of all changes to their product and this log must be available to ICAR upon request. This log must include details of in-house performance measurements and Quality Assurance testing showing the product has maintained or enhanced its quality, performance and material composition.
 - Submit the product for a Device Change Notification (DCN – [Appendix B2](#)) when changes are made to the device during its 5-year certification period. The modified device will have a new certification code, while the manufacturer will need to declare

if the modified device will replace the existing one or if the two devices are going to co-exist. Every DCN application will be reviewed individually by ICAR and the designated laboratory, and ICAR shall decide if a partial test is applicable, or if the range of the modifications is such that a full test is required.

Note: The request for DCN is not applicable to all types of changes to a device. Manufacturers are requested to contact the ICAR Secretariat (manufacturers@icar.org) for guidance before they apply for DCN.

- Submit the product for re-certification before the expiration of its current ICAR certification. The manufacturer must submit this product no earlier than 6 months before the expiration of the certificate and no later than 5 months before the expiration of the certificate.
- Understand that ICAR may take sample products from the market and test its conformance against the conformance of the device the manufacturer originally submitted should ICAR suspect a breach of the signed ICAR Code of Conduct or a product change that has not been subjected to the tests outlined in this Procedure 4 of Section 10 of the ICAR Guidelines.
- e. Should the manufacturer fail to meet any or all the above certification conditions ICAR may withdraw the certification.
- f. In disputes regarding the conditions above or the use of a certificate, the decision of ICAR will be binding.
- g. ICAR will distribute an advice notice regarding any manufacturer distributing product in conflict with the testing and certification procedures outlined in this Procedure 4 of Section 10 of the ICAR Guidelines.