

**DRAFT SPECIFICATION FOR IPPC GUIDES AND TRAINING MATERIALS****I. General information**

Submitted by (Country or Organization)	IPPC Contracting Party
IPPC Official Contact Point or RPPO	Canada
Email of the IPPC Official Contact Point or the regional plant protection organization	cfia.ippc.acia@inspection.gc.ca

2. Standard information

Title	Sampling Calculator Tool for Surveillance (ISPM 6) and Consignments (ISPM 31)
Type of implementation resource	New implementation resource
New implementation resource	Analytical tool to support the development of capacity for calculating samples sizes for statistically valid survey and sampling designs
Convention articles, ISPMs and CPM recommendations to be addressed by the proposed implementation resource	ISPM 6. 2018. Surveillance. Rome, IPPC, FAO ISPM 31. 2008. Methodologies for sampling of consignments. Rome, IPPC, FAO Article IV – General Provisions relating to the organizational arrangements for national plant protection 2(b, c, h) Article VII – Requirements in relation to imports 2(j) Article XX – Technical assistance
Scope	This tool aims to provide an implementation toolkit for calculating sample sizes for statistically sound survey and sampling designs and assessing the design of an existing survey or sampling procedure; providing NPPOs with a standardized tool for developing survey and sampling guidelines and assessing protocols. The toolkit should include tools, such as spreadsheet-based calculators, computer code, etc., that are well-documented in the FAO languages.
Purpose	Designing and assessing statistical valid surveys and sampling protocols with realistic assumptions can be difficult and time-consuming. Inconsistency in the calculation of sample sizes can introduce barriers to trade and potentially generate risks to plant resources. In addition, information is often available only in English. This implementation resource will provide a tool which will improve consistency in the calculation of sample sizes as well as the basic ability to assess sampling protocols within an NPPO. The material will provide a simple to use tool

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	in all FAO languages which will help in calculating sample sizes and assessing sampling protocols.
Content for the IPPC Guide or training material	<p>The toolkit will include the following outputs:</p> <ul style="list-style-type: none"> - An analytical tool, such as spreadsheet based calculators and/or computer code, that can calculate sample sizes and confidence levels under a range of sampling conditions - Documentation to support the proper use of the analytical tool <p>The toolkit should address the following:</p> <ol style="list-style-type: none"> 1) Calculation of sample sizes using binomial, Poisson, and hypergeometric distributions 2) Allow the modification of test sensitivity (i.e. survey efficacy), population size, confidence level, and design prevalence (i.e. detection threshold) 3) Options for calculating sample sizes based on simple random sampling 4) Allow the calculation of confidence level given test sensitivity, population size, design prevalence, and number of samples, to be able to assess efficacy of current survey or inspection design 5) Ability to allocate sampling efforts across multiple survey cycles to achieve target confidence level for a survey or inspection 6) Ability to calculate the differential between the number of samples in the current sampling design and a statistically sound sampling design 7) Complete, thorough documentation in all FAO languages, that includes guidance on how to select some of the survey design parameters, example calculations, a description of the limits of the tool that includes assumptions and cases where a statistical expert should be consulted.
References and supporting materials (optional)	<ul style="list-style-type: none"> * ISPM 6. 2018. Surveillance. Rome, IPPC, FAO * ISPM 31. 2008. Methodologies for sampling of consignments. Rome, IPPC, FAO * FAO. 2014. Risk-based disease surveillance – A manual for veterinarians on the design and analysis of surveillance for demonstration of freedom from disease. FAO Animal Production and Health Manual No. 17. Rome, Italy * IPPC Secretariat. 2021. Surveillance guide – A guide to understand the principal requirements of surveillance programmes for national plant protection organizations. Second edition. Rome, FAO on behalf of the Secretariat of the International Plant Protection Convention *NAPPO. 2018. Sample Size Calculator. https://www.nappo.org/english/learning-tools/Resources-and-Learning-Tools-for-Risk-Based-Sampling/Sample-Size-Calculator *EFSA. 2016. Risk based estimate of system sensitivity update tool (RiBESS+). https://zenodo.org/record/2541541#.YT9gNp0zblU
Selection criteria for working group experts (optional)	1) Combined knowledge of and experience in calculations for statistical survey or sampling design.

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	2) Combined knowledge and experience in implementing calculations in spreadsheets or computer code.
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