

1 Running head: Smith et al.: The running head is in sentence case (max. 60 characters or spaces)

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9 Financial contact for invoice: name, complete mailing address, and e-mail address
10 (if same as corresponding author, write “Same”)

11 [BLANK LINE]

12 **Precise title in sentence case, 16 pt bold font, centered, with name of**
13 **insect (Order: Family)—use either ESA-accepted common name or**
14 **Latin binomial, not both, and do not include the authority for**
15 **taxonomic names**

16 [BLANK LINE]

17 John E. **Smith**¹, Mitsuo **Nukaya**², and Carmen Lucia Moreira **De Souza**^{3*}

18 ¹University of Florida, Department of Entomology & Nematology, Gainesville, Florida 32611,
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25 [BLANK LINE]

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27 [PAGE BREAK]

28 **Abstract**

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30 Left-justify the word Abstract. Capitalize the first letter only. Do not indent the Abstract heading
31 and the first line of the text. Do not cite references, figures, or tables in the abstract. Avoid long
32 lists of methods or detailed explanations. Give the systematic authority at first mention of an
33 organism's Latin name, order, and family in the abstract and the text. Spell out all authorities
34 except Linnaeus (L.) and Fabricius (F.). The primary purpose of an abstract is to explain to the
35 general reader why and how the research was done and why the results should be viewed as
36 important. It briefly provides the (i) background and purpose, (ii) methods, (iii) results, (iv)
37 conclusion(s), and (v) significance and impact as in the following example. (Note: The following
38 **bold-font grey words in brackets** shown in this abstract are for guidance only; **do not insert**
39 **these words** in your abstract.) [**Background and Purpose:**] The red palm weevil,
40 *Rhynchophorus ferrugineus* (Olivier) (Coleoptera: Curculionidae), is an economically significant
41 pest of palm trees. By the time a palm infested with weevils displays visible damage, larvae have
42 destroyed much of the trunk's internal structure, typically resulting in tree mortality. Acoustic
43 technology may enable pest managers to detect and treat early weevil infestations before tree
44 mortality. This study was conducted to determine the detectability of sounds produced by early
45 instars in open, urban environments and in enclosures with approximately 10 dB acoustical
46 shielding. [**Methods:**] Recorded signals were analyzed to identify larval sound impulse bursts,
47 trains of 7 to 200 impulses, 3 to 30 ms in duration, where impulses within the train were
48 separated by less than 0.25 s. For a burst to be considered a larval sound, it was specified that
49 most of its impulses must have spectra that match mean spectra (profiles) of known larval sound
50 bursts more closely than profiles of background noise or known non-targeted sound sources.

51 **[Results:]** Larval bursts were detected in > 80% of palm fronds inoculated with neonates the
52 previous day. There were no significant differences between burst rates in enclosed and open
53 environments, but the shielding provided by the enclosure enabled detection of early instars from
54 greater distances. **[Conclusions:]** Thus, there is potential to use acoustic technology to detect
55 early red palm weevil infestation in either minimally shielded or open environments. In addition,
56 because late-instar impulses ranged to higher amplitude and had greater diversity of spectral
57 features than early-instar impulses, it may be possible to identify late-instar infestations based on
58 the amplitudes and the diversity of sound features detected. **[Significance and Impact of the**
59 **Study:]** Larvae of all instars can be detected over distances of at least 5 to 10 cm in shielded and
60 exposed environments. In quiet environments it seems possible to detect early instars at distances
61 up to 0.5 to 1 m, whereas late instars can be detected at distances of 1 to 4 m. Step-wise
62 procedures for identifying a weevil infestation in the field are elaborated.”

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64 Key Words: type 4 to 6 key words **other than words in the title**; separate them with
65 semicolons; do not type a period at the end

66 [BLANK LINE]

67 **Resumen**

68 [BLANK LINE]

69 Left-justify the word Resumen. If you have prepared a Spanish translation, place it here,
70 otherwise leave it blank. Do not attempt a translation unless you (or your translator) are fluent in
71 Spanish. The Spanish Abstract Associate Editor will provide a translation. A Portuguese
72 translation (Resumo and Palavras Chave) is also accepted.

73 [BLANK LINE]

74 Palabras Clave: type 4 to 6 palabras clave corresponding to those you listed in the Key Words

75 [PAGE BREAK]

76 This document is an example of the Florida Entomologist formatting style. Your
77 submission should resemble the editorial style of this document. All submissions must be in
78 Microsoft Word (.doc or .docx). Use continuous line numbering of lines on all pages of your
79 manuscript. Type all text and captions (including text in tables) with double-spaced lines (except
80 single-spaced contact information on top of the title page). Left-justify all text and indent (0.5
81 inches) all paragraphs. Do not use hyphenation on line endings. Use 12 pt font throughout
82 manuscript (except 16 pt font in 1st-level headings). Do not use **bold font** except where
83 absolutely necessary, such as to indicate the **surname (family name) of each author** on the title
84 page and to indicate **sp. nov.** and **gen. nov.** Use italic font only for scientific names (i.e., Latin
85 binomials), certain statistical abbreviations (see below), mathematical equations, and 4th-level
86 headings. The introduction should describe the paper's significance. Note that there is no heading
87 for this section. State the reason for doing the research, the questions or hypotheses, and the
88 essential background. Give the scientific name (i.e., Latin binomial), authority, and taxonomic
89 classification (Order: Family) at first mention of each organism in both text and Abstract (or
90 Summary). Authorship of a species name must be provided at first use. The year of authorship
91 should be provided only in a synonymy or taxonomic resume, or if inclusion of the year is
92 needed to clarify the use of the name. If the year is included, it becomes a citation and must be
93 included in the References Cited section.. After the first mention, abbreviate the genus name of
94 the organism, unless it is at the beginning of a sentence (i.e., spell out an organism's genus name
95 at the beginning of a sentence). Refer to the Catalogue of Life for accepted taxonomic placement
96 (<http://www.catalogueoflife.org/annual-checklist/2014/search/all>). Use common names
97 according to the listing of the Entomological Society of America (ESA). Do NOT use acronyms
98 or abbreviations (like ECB for European corn borer). Plant cultivars follow the species name and

99 authority, with capital initial letter, regular font (NOT italics), in single quotation marks upon
100 first mention; afterwards (unless confusion is possible), omit quotation marks when the cultivar
101 is mentioned without the species name. Name plant viruses in accordance with Fauquet & Mayo
102 (1999) Virology 144: 1249.

103 A sentence must not begin with an abbreviation or a numeral. In other words, spell out
104 genus names, numbers, and abbreviated terms (or add an article before the abbreviated term) at
105 the beginning of a sentence. Citations in the text are included in the name-date format: Jones
106 (1986); (Jones 1986); Jones & Smith (1986); (Jones & Smith 1986); Jones (in press); (Jones AF,
107 Department of Zoology, Ohio State University, personal communication). When 2 or more in-
108 text citations are used, they must be separated with semicolons, for example “(Ball 1970;
109 Menendez 1980; Jones & Smith 1986).” However, several citations by the same author(s) are
110 separated by commas, such as “(Jones & Smith 1986, 1992, 2014)”. List multiple citations in
111 chronological order. Use “et al.” for 3 or more authors, but do not italicize “et al.” Provide
112 evidence of acceptance for works “in press,” otherwise cite as “unpublished” or “personal
113 communication.” Provide written permission from personal communicants.

114 The structure of taxonomic manuscripts is different from the structure of general research
115 papers. Please refer to the Taxonomic Manuscripts Formatting Template (posted online:
116 <http://www.flaentsoc.org/auinstr.htm>) when preparing a taxonomic manuscript.

117 [BLANK LINE]

118 **Materials and Methods** [16 pt bold font]

119 [BLANK LINE]

120 Note that there is a blank line above and below the heading. Left-justify and indent (0.5
121 inches) all paragraphs. Report geographical coordinates as, for example, “Gainesville

122 (29°39'05"N, 82°19'29"W), Florida,” and use the symbols for degrees (°), minutes (', i.e., normal
123 text Basic Latin apostrophe), and seconds (", i.e., normal text Basic Latin quotation mark); note
124 that there are no spaces except after the comma.

125 Use numerals (NOT words) to express whole and decimal numbers, for example “3
126 objectives, 8 samples, 4 times, 0.5 m.” Exceptions: Spell out a number at the beginning of a
127 sentence or title, a number adjacent to another number (e.g., “four 100 mL samples”), and zero
128 and one when used generally (e.g., “values above zero,” “at one time”). Use numerals to
129 designate mathematical relationships as in “2:1 sex ratio (female: male), at 5× magnification, a 3-
130 fold increase.”

131 Use metric units unless there is specific reason to include English units, then include the
132 English equivalents in parentheses. Do not abbreviate “liter” except in units of measure, such as
133 mL and µL. For numerals with units of measure, use the symbols accepted by the Système
134 International (SI). Separate mathematical operators and units of measure from numerals with one
135 space (e.g., 3.7 ± 1.1 mm; $P = 0.05$), but do not leave a space between a numeral and % (e.g.,
136 75%). For temperatures, insert a space before (but not after) the “degree” symbol (e.g., 27 °C).
137 Describe dimensions as “20 × 25 × 10 cm” or as “20 cm L × 25 cm W × 10 cm H.” Do not use a
138 hyphen between numerals and units when they specify a noun as in “a 7.4 mL glass vial” (NOT
139 “a 7.4-mL glass vial”). Use regular (NOT superscript) formatting for ordinals as in “1st, 2nd, and
140 3rd instars.” For more information on the use of numerals, ordinals, and units of measure, refer
141 to the Scientific Style and Format of the Council of Science Editors (previously [until 2000]
142 known as the Council of Biology Editors).

143 Use the following format for photoperiod: 14:10 h L:D. Spell out names of countries,
144 states, and provinces, with the exception of USA. Report months using the 3-letter system (e.g.,

145 Jan, Feb, Mar), but in taxonomic reports use Roman numerals (e.g., 15-VI-2012). In dates, do
146 not place a zero before a numeral, use the 3-letter abbreviation (without period), and write the
147 date in the order day-month-year, for example write 2 Apr 2010 (not 02 Apr 2010, not 2 April
148 2010, not April 2, 2010, and not Apr 2, 2010). For other abbreviations, refer to the Scientific
149 Style and Format of the Council of Science Editors.

150 The study design must be clear so the statistical analysis can be understood. The reader
151 should be able to determine where the study plots were located, how sampling was performed in
152 space and time, what data were collected, what parameters were calculated, and how data were
153 analyzed. With complex studies, it may be appropriate to divide the methods into separate units
154 identified by subheadings, and then continue the subheading organization in the Results section.
155 Large-scale datasets, sequences, and computational models should be deposited in one of the
156 relevant public databases (e.g., GenBank of the National Center for Biotechnology Information
157 [NCBI]) **before submission**, and authors should include accession codes in the Materials and
158 Methods section. Alternatively, material can be included as “supplementary material,” which is
159 submitted as a Microsoft Word document and published online in pdf format, via an “infolink”
160 associated with the online version of the manuscript. Supplementary material may include tables,
161 graphics, color photographs, videos, etc. The corresponding author must alert the editor in chief
162 about the need to upload supplementary material **before** the manuscript has been sent to the
163 printing company. Please refer to the instructions posted online
164 (<http://www.flaentsoc.org/infolink.htm>) to prepare supplementary material.

165 Statistical analyses must be described in detail. Cite the method or software used. In
166 regressions, specify the model, define all variables, and provide estimates of variance. Use
167 uppercase “N” for population size and lowercase “n” for sample size. Following is an example of

168 suitable description: “Within each experiment, treatment effects were analyzed by using repeated
169 measures ANOVA ($P < 0.05$) over multiple dates, and differences between treatment means
170 were distinguished with the least-square differences (LSD) test (SAS Version 9.1, SAS Institute,
171 Cary, North Carolina, USA). Percentage data (mortality) were arcsine transformed and numerical
172 data (insect abundance) were square-root transformed prior to analyses. Non-transformed means
173 are presented in the figures.”

174 Under Materials and Methods, use **up to 3 additional levels of heading** with the
175 following formats:

176 [BLANK LINE]

177 EXPERIMENTAL LOCATIONS [2nd-level heading, all capital letters]

178 [BLANK LINE]

179 Text begins with indent. Leave one blank line above and below heading.

180 [BLANK LINE]

181 Spring Sampling Period for Immatures [3rd-level heading; capitalize first letter of major words;
182 do not capitalize first letter of an article, conjunction, preposition, or pronoun]

183 [BLANK LINE]

184 Text begins with indent. Leave one blank line above and below heading.

185 *Sampling Terminal Leaves*. This 4th-level heading is indented and italicized; it is
186 followed immediately by the text. Do not insert a blank line above this heading.

187 [BLANK LINE]

188 **Results** [16 pt bold font]

189 [BLANK LINE]

190 Leave a blank line above and below the heading. Indent (0.5 inches) all paragraphs.
191 Results generally should be stated concisely and without interpretation. However, with complex
192 studies, modest interpretation of individual parts can provide context helpful for understanding
193 subsequent parts. **Keep the Results section and the Discussion section separate.** The editor of
194 the Florida Entomologist **will not accept** manuscripts with a combined Results and Discussion
195 section.

196 When presenting the results of analysis of variance or *t*-tests, specify *F* or *t*, degrees of
197 freedom (df), and probability level (*P*) either in the text or table (e.g., $F = 19.76$; $df = 1,28$; $P <$
198 0.001). **Note that *t*, *F*, and *P* are italicized, but df is not.** An example for reporting regression
199 is “The time required to complete larval development was related to air temperature ($t = 3.15$; df
200 $= 14$; $P < 0.001$). Larval development time (days) decreased with increasing air temperature by
201 the relation: $\text{days} = 3.2 - (5.6 \pm 1.2 \text{ [SD]}) (\text{°C})$.

202 Under Results, use up to 3 additional levels of heading, as described above under
203 Materials and Methods. Number tables and figures with Arabic numerals in the order in which
204 you cite them in the text. In running text, refer to Table 1 or Figure 2. In parentheses, refer to
205 (Table 1; Fig. 2). When you prepare tables, summarize your data (i.e., do not present raw data)
206 so that each table fits on a regular page. See an example on Page 15 of this document. When you
207 prepare figures, keep photos and line drawings (i.e., graphs) separate. Combine individual photos
208 into a photo plate, and combine similar graphs into one figure plate. PRINTING OF COLOR
209 PHOTOS IS MUCH MORE EXPENSIVE THAN PRINTING OF BLACK-AND-WHITE
210 PHOTOS OR LINE DRAWINGS, SO IT IS IN YOUR INTEREST TO GROUP COLOR
211 PHOTOS ON SEPARATE PLATE(S).

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213 **Discussion** [16 pt bold font]

214 [BLANK LINE]

215 Leave a blank line above and below the heading. Indent (0.5 inches) all paragraphs. The
216 discussion should explain the significance and impact of the results. The objectives of the
217 discussion include (1) interpreting the results, especially in relation to the literature, (2)
218 connecting the results to the objectives or hypotheses stated in the introduction, and (3) reflecting
219 on the importance of the results. Avoid excessive repetition of the results.

220 Under Discussion, headings may be inserted as needed.

221 [BLANK LINE]

222 **Acknowledgments** [16 pt bold font]

223 [BLANK LINE]

224 Leave a blank line above and below the heading. Indent (0.5 inches) this paragraph. Do
225 not use titles before names. Generally, people precede grants. Spell out institutions. You may
226 include disclaimers such as “mention of trade names does not imply recommendation or
227 endorsement.”

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229 **References Cited** [16 pt bold font]

230 [BLANK LINE]

231 Leave a blank line above and below the heading. Use a **hanging indent** (0.5 inches) as shown in
232 the examples below. Begin each reference on a new line (without a blank line). Put initials of
233 each author after the surname (family name) (e.g., Jones BJ, Smith CA. 2008.). Do not use
234 punctuation except for a comma to separate names of different authors. Do not include “and”

235 preceding the last name in a series. Include all references cited in the manuscript. Provide all
236 information that would allow retrieval of the material including the volume and page numbers of
237 a journal or the name and location of a book publisher. Spell out journal names (e.g., Journal of
238 Economic Entomology). The journal name is followed by the volume number, a colon, and the
239 page range; place a hyphen between page numbers and a period at the end; for example “Florida
240 Entomologist 84: 111-115.” Use sentence case for titles of journal articles, book chapters,
241 reports, and theses. Capitalize major words (but not articles, conjunctions, prepositions, and
242 pronouns) in book titles. Follow the grammar and spelling rules of foreign languages if you are
243 citing original articles (e.g., in German titles, adjectives and adverbs do not have an initial capital
244 letter). The order of the references is alphabetical by 1st author. For 2 or more references by the
245 same 1st author, list first the references with 1 author (in chronological order), then the
246 references with 2 authors (alphabetical by 2nd authors, then chronological), and then the
247 references with 3 or more authors in chronological order. **Examples are:**
248 Coolidge G. 2005. “New thrips” cause significant damage to rose foliage and blooms [online] *In*
249 Greater Palm Beach Rose Society [ed.], The Rose Petal. Greater Palm Beach Rose
250 Society, Florida, <http://www.centralfloridarosesociety.org/info/index.asp> (last accessed 2
251 Sep 2014).
252 Jones JL. 2001. The title of a journal article. Florida Entomologist 84: 111-115.
253 Jones JL, Smith SR. 2012. This is a chapter title, pp. 200-210 *In* White MM, White-Brown AS
254 [eds.], The Big Bug Book. Academic Press, London, United Kingdom.
255 Jones JL, Smith SR, White-Brown AS. 2009. The title of a journal article. Crop Protection 28:
256 223-229.

257 Manning LJ, Erikson AI, Harper D, O'Brien LS, Martin FG. 2014. The title of a journal article in
258 press. *Environmental Entomology* (in press).

259 Thomas MC. 2005. An exotic baridine weevil pest (Coleoptera: Curculionidae) of
260 Amaryllidaceae in Florida. Florida Department of Agriculture and Consumer Services,
261 Division of Plant Industry, DACS-P-01664, [http://www.freshfromflorida.com/pi/pest-](http://www.freshfromflorida.com/pi/pest-alerts/pdf/amaryllis-weevil.pdf)
262 [alerts/pdf/amaryllis-weevil.pdf](http://www.freshfromflorida.com/pi/pest-alerts/pdf/amaryllis-weevil.pdf) (last accessed 3 Aug 2014).

263 White MM, White-Brown AS [eds.]. 2011. *The Big Bug Book*. Academic Press, London, United
264 Kingdom.

265 Young JJ, Old BC. 2013. Predator-prey dynamics and strategies for control of citrus psyllid, pp.
266 123-130 *In* Proceedings of the 5th Meeting of the Florida IPM Working Group. Orlando,
267 Florida, 9-12 Mar 2013.

268 [PAGE BREAK before 1st table]

269 The reference list is the last part of the text body. Next, present each table on a separate
270 page. **Insert a page break before each table** (i.e., do not hit the “enter” key to insert lines until
271 you reach the next page). The format of a table title is as follows:

272

273 **Table 1.** This is the title of the table. Include enough information so that the reader can
274 understand the contents of the table without having to refer to the text. Spell out species names,
275 for example *Drosophila melanogaster*, if you use the Latin binomial.

276

277 The table title should fully describe the table. It is left-justified and ends with a period.

278 Note that “**Table 1.**” is bold, but the remainder of the title is not. Please refer to the sample table
279 below to see how to format each table. Tables have no borders between columns and no borders

280 between rows of the table body. Each table has 3 borders: one on the top, one on the bottom, and
281 one that separates the header row from the body of the table. If applicable, place a border
282 between a header row and its sub-header row. The first (left) column is left-justified, all other
283 columns are centered.

284 When you have inserted all tables (each on its own page), insert a page break and list all
285 figure captions on one page. The format of a figure caption is as follows:

286
287 **Fig. 1.** This is the figure caption. Include enough information so that the reader can understand
288 the contents of the figure without having to refer to the text. Spell out species names, for
289 example *Drosophila melanogaster*, if you use the Latin binomial. Explain the meaning of
290 symbols, bars, letters, etc. Include brief information on statistical analyses if applicable.

291
292 The figure caption should fully describe the figure. It is left-justified and ends with a
293 period. Note that “**Fig. 1.**” is bold, but the remainder of the caption is not. After the list of figure
294 captions, insert a page break and insert the first figure on the new page. Copy and paste the
295 figure caption so that it appears once more beneath the figure. Repeat this process on a separate
296 page for each additional figure. Examples of tables and figures follow on the next pages.

297 [PAGE BREAK]

298

299 **Table 1.** Mean (\pm SD) weight gain in *Diaprepes abbreviatus* larvae that survived oral treatment
 300 with *Helicosporidium* cysts at 2.5×10^5 cysts per larva.

Treatment	Infection	N	Weight (mg) ^a		
			Initial	After 3 wk	After 6 wk
Control	No	67	15 \pm 4a	228 \pm 75a	480 \pm 149a
Isolate A	Yes	32	15 \pm 4a	191 \pm 82b	251 \pm 112b
	No	6	16 \pm 3a	192 \pm 85ab	441 \pm 21ab
Isolate B	Yes	39	15 \pm 4a	105 \pm 78c	255 \pm 130b
	No	5	13 \pm 3a	229 \pm 55ab	472 \pm 86a

301 ^a Means in a column followed by different lowercase letters are significantly different ($P \leq 0.05$;
 302 ANOVA and LSD test).

303 [PAGE BREAK]

304

305 FIGURE CAPTIONS

306 [BLANK LINE]

307 **Fig. 1.** This is a figure caption. Include enough information so that the reader can understand the
308 contents of the figure without having to refer to the text. Explain the meaning of symbols, bars,
309 letters, etc. Include brief information on statistical analyses if applicable.

310 [BLANK LINE]

311 **Fig. 2.** This is another figure caption. Spell out species names, for example *Drosophila*
312 *melanogaster*, if you use the Latin binomial.

313 [PAGE BREAK]

314

315

316 [Place a medium-resolution copy of Figure 1 here.]

317 **Fig. 1.** This is a figure caption. Include enough information so that the reader can understand the
318 contents of the figure without having to refer to the text. Explain the meaning of symbols, bars,
319 letters, etc. Include brief information on statistical analyses if applicable.

320 [PAGE BREAK]

321

322 [Place a medium-resolution copy of Figure 2 here.]

323 **Fig. 2.** This is another figure caption. Spell out species names, for example *Drosophila*

324 *melanogaster*, if you use the Latin binomial.

325 [PAGE BREAK]

326