

Interactive comment on “Colonization of an empty island: how does a plant with a plastic gender system respond?” by M. Philipp and H. Adersen

Anonymous Referee #1

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General comments. This paper describes a study on *Honckenya peploides* populations on Surtsey, a recently emerged volcanic island, south of Iceland and compares their reproductive system with populations on the mainland of Iceland and on Heimaey - an island near Surtsey. The authors take advantage of the detailed information gathered on the species populations on Surtsey since the species began establishing there, and utilise as a base for studying the reproduction system of the species. In general, the paper is a good contribution to understanding better the species and its establishment history on Surtsey. Authors use four populations outside Surtsey for comparison and to better present the development of the species on Surtsey. Information is rather limited on the environment where these populations (outside Surtsey) grow and conditions there. Heimaey is a relatively small island and the two populations appear to be close to each other. On the other hand, the two populations on the mainland of Iceland

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are further apart, in SW- and S-Iceland. These four populations are combined in any comparison in this study. I do think that there is a need for addressing this better in the paper. For instance in Table 1, no data except the location is shown for the population in SW-Iceland. Before using these four populations combined to compare with the Surtsey populations I would have liked to know how similar these populations (HA/HB versus IS/IG) were. It does also confuse me when authors talk about the Icelandic populations when referring to IS and IG as all study sites in this paper are in Iceland, hence Icelandic populations.

Specific comments

P. 10653, l. 3: Morph ratios is said to vary from 46-84% referring to Table 1. According to Table 1, the lowest ratio is 0.4 (40% for the SC population). Also consider to be consistent and use either ratio or percentage both in text and the table.

P. 10653, l. 4-5: Authors state that the populations are significantly different and present G test, $p > 0.001$. Reconsider, shouldn't this either be non significant or $p < 0.001$.

P. 10653, l. 17: Given that $p = 0.097$, I would not regard this significant. However, if authors decide to use 0.1, they should present that in the methods chapter (analyses)

P. 10653, l. 22: Here it is stated that there were 12 hermaphrodite individual as in Table 2 it is referred to 13 individuals (10+3)

P. 10656, l. 22-23: According to a t-test shown in line 23 the test was insignificant ($p > 0.001$), however in the line above it is said that pistillate plants were significantly larger than the staminate plants. It looks like authors use ">" instead of "<" when referring to significance levels. A careful reading and editing are needed on this for the whole manuscript.

Technical corrections

P(age) 10651, l(ine) 23: The first sentence should be removed, belong to the acknowl-

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edgements. Instead or something along these lines: The Surtsey populations were surveyed in July 2010..

Replace "cohortes" with "cohorts" in a number of places in the text, e.g. p(age) 106451, l(ine) 26, p. 10656, l. 20. Cohorts used in Table 1

P. 10653, l. 19-20: ".. was 8.8 ± 3.12 . This figure was not different between Surtsey and HI" replaced with "The mean number of seeds per capsule (\pm SD) in 139 sampled pistillate plants was 8.8 ± 3.12 , and it did not significantly differ between Surtsey and HI".

P. 10653, l. 21: " 11.31 ± 1.65 " replaced with " 11.3 ± 1.65 ".

P. 10654, l. 9-10: "Number and size of pollen grains per anther is equal on average for Surtsey and HI..." replaced with "Mean number and size of pollen grains per anther were equal for Surtsey and HI..."

P. 10654, l. 11: "ranging" replaced with "ranking"

P. 10661, l. 15: "80ies" replaced with "80s"

P. 10661, l. 20: remove the article a before competitive

P. 10662, l. 3: Either replace "becomes" with "become", or reword

P. 10663, l. 22-23: The year is said 2000 (l. 23) whereas it should be 1968 (in line 22) which is consistent with the citation in the text (p. 10649, l. 19).

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