

Influence of 2,4-D growth regulator and foliar explant source on the *Coffea arabica* embryogenic callus

MS_JEAI_39558

Resolution: Rejected.

Minor revisions

1. Keyword. The species is missing from the list of keywords.
2. Line 6 of the introduction. There is an error in the reference ([3](Etienne et al, 2002)).
3. The Latin names must be in italics along the manuscript.
4. Please note that callus is singular, and calli is plural.
5. The abbreviations are not listed, e.g. naphthalene acetic acid (**NAA**), not (**ANA**).
6. Some journals, in the references, are not abbreviated, e.g. Zeitschrift fuer Pflanzenphysiologie, Revista de Ciências Agrárias and several more.

Major revisions

1. The English require a deep revision, e.g., the correct spelling is **embryogenic**.
2. The introduction is missing of actualized references. A small list is included below.
 - Aga E. y Y. Khillare, In vitro multiplication of *Coffea arabica* L. from leaf explants through indirect somatic embryogenesis, Int. J. Bot. Stu. , 2(1):17-22, (2017).
 - Campos N. A., B. Panis & S. C. Carpentier, Somatic embryogenesis in coffee: The evolution of biotechnology and the integration of omics technologies offer great opportunities, Front. Plant Sci., 81460, (2017). DOI: <https://doi.org/10.3389/fpls.2017.01460>.
 - Campos N. A., L. V. Paiva, B. Panis & S. C. Carpentier, The proteome profile of embryogenic cell suspensions of *Coffea arabica* L., Proteomics, (2016). DOI: 10.1002/pmic.201500399. (In press).
 - Etienne H., B. Bertrand, E. Dechamp, P. Maurel, F. Georget, R. Guyot & J.-C. Breitler, Are genetic and epigenetic instabilities of plant embryogenic cells a fatality? The experience of coffee somatic embryogenesis, Human Genetics and Embryology, 61:1-5, (2016). DOI: <http://dx.doi.org/10.4172/2161-0436.1000136>.
 - Georget F., P. Courtel, E. M. Garcia, M. Hidalgo, E. Alpizar, J. C. Breitler, B. Bertrand & H. Etienne, Somatic embryogenesis-derived coffee plantlets can be efficiently propagated by horticultural rooted mini-cuttings: A boost for somatic embryogenesis, Sci. Hortic., 216177-185, (2017). DOI: <http://dx.doi.org/10.1016/j.scienta.2016.12.017>.
 - Loyola-Vargas V. M., J. R. Avilez-Montalvo, R. N. Avilez-Montalvo, R. E. Márque-López, R. M. Galaz-Ávalos & E. Mellado-Mojica, Somatic embryogenesis in *Coffea* spp., in: Somatic embryogenesis. Fundamental aspects and applications, (Loyola-Vargas V. M. y N. Ochoa-Alejo, eds.), Springer, Switzerland, 241-266, (2016). DOI:10.1007/978-3-319-33705-0_15.
 - Maciel A. L. R., F. A. Rodrigues, M. Pasqual y H. S. Carvalho, Large-scale, high-efficiency production of coffee somatic embryos, Crop Breeding and Applied Biotechnology, 16(2):102-107, (2016). DOI: <http://dx.doi.org/10.1590/1984-70332016v16n2a16>.
 - Nic-Can G. I., R. M. Galaz-Ávalos, C. De-la-Peña y V. M. Loyola-Vargas, Somatic embryogenesis: Identified factors that lead to embryogenic repression. A case of species of the same genus, PLoS ONE, 10(6):e0126414, (2015). DOI: 10.1371/journal.pone.0126414.
 - Silva A. T., D. Barduche, K. G. Do Livramento y L. V. Paiva, A putative BABY BOOM-like gene (CaBBM) is expressed in embryogenic calli and embryogenic cell suspension culture of *Coffea arabica* L, In Vitro Cell. Dev. Biol. -Plant, 51(1):93-101, (2015). DOI: 10.1007/s11627-014-9643-z.
3. Results. Figure 1. The measurement of the area is a very subjective parameter. Why not was used, e.g., the weight of the calli?

4. Results. Figure 1. “Besides these yellow callus [calli], those brown and watery white ones were characterized, as well. Nevertheless, only the friable yellowish ones were collected and used in the histological analysis experiment”. In many cases, coffee included, the better raw material for somatic embryogenesis are the brown calli. Why did the authors not weight these calli?
5. How do you now that the calli are embryogenic?

General comment.

The authors of this manuscript report the use of two different culture medium to induce embryogenic calli. However, there is not any new information beyond the knowledge already in the literature. This is very preliminary research. The authors need to probe the embryogenic capacity of the calli.