Supplementary Table 2. Scores for potentially 13 informative anatomical character states of the ovule and the mature seed of Subtribe Eugeniinae and Myrtaeae species (original data and taken from Corner, 1976; Van Wyk and Botha, 1984; Moreira-Coneglian, 2007; Moreira-Coneglian, 2011; Machado, 2014; Galan, 2020). Key: ?, unknown; -, inapplicable.

| Subtribe          | Section                        | Species                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------------------|--------------------------------|----------------------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|
|                   |                                | Myrcianthes pungens (O.Berg) D.Legrand      | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  |
|                   |                                | Eugenia arenosa Mattos                      | 1 | 0 | 1 | - | 1 | 0 | - | 0 | 0 | 0  | 2  | 0  |
| Eugenia sect.     |                                | E. klotziana O. Berg                        | ? | ? | ? | ? | 1 | 0 | - | 0 | 0 | 0  | 2  | ?  |
| Pseudoeugenia Faria |                            | E. dysenterica DC.                          | 1 | 0 | 1 | - | ? | ? | ? | ? | ? | ?  | ?  | ?  |
| E. sect. Hexachlamys |                        | E. myricanthes Nied.                        | 1 | 1 | 1 | 0 | 0 | - | 0 | 0 | 1 | 2  | 0  | 0  |
| (O.Berg) Mattos   |                                | E. brasiliensis Lam.                        | 1 | 1 | 1 | 0 | 1 | 0 | - | 0 | 1 | 1  | 0  | 0  |
|                   |                                | E. longipedunculata Nied.                   | 1 | 1 | 0 | 1 | 0 | - | 0 | 1 | 1 | 0  | 0  | 0  |
|                   |                                | E. pitanga Kiearsk.***                     | 1 | 1 | 1 | 0 | 1 | 0 | - | 0 | 1 | 1  | 0  | 0  |
|                   |                                | E. uniflora L.                              | 1 | 0 | 1 | - | 1 | 0 | - | 0 | 1 | 1  | 0  | 0  |
|                   |                                | E. pyriformis Cambess.                      | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 1  | 0  | 0  |
| E. sect. Pilotheicum |                        | E. longsdorffii O.Berg                      | 1 | 1 | 1 | 0 | 1 | 0 | - | 1 | 0 | 0  | 2  | ?  |
| (Kiearsk.) D.Legrand |                            | E. supraciliaris Spring.                    | ? | ? | ? | ? | 0 | 0 | - | 0 | 1 | 0  | 2  | ?  |
|                   |                                | E. expansa Spring ex Mart.                  | 1 | 1 | 1 | 1 | ? | ? | ? | ? | ? | ?  | ?  | ?  |
| E. sect. Phyllocalyx |                        | E. involucrata DC.                          | 1 | 1 | 1 | 0 | 1 | 0 | - | 0 | 1 | 1  | 0  | 0  |
|                   |                                | E. acutata Miq.                             | ? | ? | ? | ? | 1 | 0 | - | 0 | 1 | 1  | 0  | 2  |
|                   |                                | E. arvensis Vell.                           | ? | ? | ? | ? | 1 | 0 | - | 1 | 0 | 1  | 2  | ?  |
| Schizocalomyrtus   |                                | E. subterminalis DC.                        | 1 | 0 | 1 | - | 2 | 2 | 0 | 0 | 1 | 1  | 1  | 0  |
| (Kausel) Mattos   |                                | E. excelsa O. Berg                          | ? | ? | ? | ? | 2 | 2 | 0 | 0 | 1 | 1  | 3  | ?  |
|                   |                                | E. simii Dümmer**                           | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 1  | 3  | 1  |
| E. sect. Jossinta  |                                | E. capensis Harv.,**                        | 1 | 1 | 1 | 0 | 2 | 1 | - | 1 | 1 | 1  | 0  | 1  |
| (DC.) Nied.       |                                | E. natalitila Sond.,**                     | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 1 | 1  | 1  | 1  |
|                   |                                | E. umtamvunensis A.E.van Wyk**              | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 1  | 3  | 1  |
|                   |                                | E. zeyheri Harv.,**                        | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. albanensis Sond,**                       | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. erythrophylla Strey,**                  | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. verdoorniae A.E.van Wyk**               | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. woodii Dümmer**                          | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. zuluensis Dümmer**                      | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. sp A,**                                 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. sp. B,**                                | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. sp. C,**                                | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. florida DC.                             | 1 | 0 | 1 | - | 2 | 2 | 0 | 1 | 0 | 1  | 3  | 0  |
|                   |                                | E. patens Poir.                            | ? | ? | ? | ? | 1 | 0 | - | 1 | 1 | 0  | ?  | ?  |
| E. sect. Racemosae |                                | E. modesta DC.                             | ? | ? | ? | ? | 2 | 2 | 0 | 0 | 0 | 1  | 1  | ?  |
| O.Berg            |                                | E. paracatana O.Berg                       | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 1 | 1  | 1  | 0  |
|                   |                                | E. repanda O.Berg                          | 1 | 1 | 1 | 0 | 0 | 0 | - | 1 | 1 | 1  | 0  | 0  |
### Character states used in anatomical analysis of the ovule and the mature seed-coat of Subtribe Eugeniinae *sensu* Mazine et al. (2018).

**Ovule**
1. Curvature : Anatropous → Campylotropous (0), Campylotropous (1)
2. Integuments number: Unitegmic (0), Bitegmic (1)
3. Outer integument layers: few (≤ 3) (0), many ≥ 3 (1)
4. Inner integument layers: two (0), two-three (1)

**Mature seed**
5. Exotesta cell shape: tabular and/or cuboid (0), tabular and/or cuboid obliquely elongated (fiber-like) (1), radially elongated (2)
6. Exotesta cell wall: thin (0), thick non-lignified (1), thick lignified (2)

| E. sect. Speciosae Bünger & Mazine | E. speciosa Cambess. | E. punicifolia (Kunth) DC.* | E. bahiensis DC. | E. hirta O.Berg | E. subavenia O.Berg | E. stictopetala Mart. ex DC. | E. bimarginata DC.** | E. pluriflora DC. | E. leptoclada O.Berg | E. neoverrucosa Sobral | E. egensis DC. | E. flavescens DC. | E. aurata O.Berg** | E. batingabranca Sobral | E. gracillima Kiaersk. | E. hiemalis Cambess. | E. mosenii (Kausel) Sobral | E. ramboi D.Legrand | E. hiemalis Cambess. | E. mosenii (Kausel) Sobral |
|-----------------------------------|----------------------|-----------------------------|------------------|-----------------|---------------------|-----------------------------|----------------------|------------------|-------------------|------------------------|----------------|------------------|-------------------|------------------|----------------|------------------|------------------|------------------|------------------|
| E. sect. Umbellatae O.Berg       | E. speciosa Cambess. | 1 1 1 0 0 0 - 1 0 0 2 0 | E. punicifolia (Kunth) DC.* | 1 1 1 1 2 2 0 1 0 0 3 0 | E. bahiensis DC. | ? ? ? ? 2 2 0 1 0 0 3 ? | E. hirta O.Berg | ? ? ? ? 2 2 0 1 0 0 3 ? | E. subavenia O.Berg | ? ? ? ? 2 2 0 1 0 0 3 ? | E. stictopetala Mart. ex DC. | ? ? ? ? 2 2 0 1 0 0 3 ? | E. bimarginata DC.** | 1 1 1 0 2 2 0 1 0 0 3 0 | E. pluriflora DC. | ? ? ? ? 2 2 0 1 0 1 3 ? | E. leptoclada O.Berg | ? ? ? ? 2 2 0 1 1 1 1 ? |
| Pimentinae                       | Campomonasia adamantium (Cambess.) | 1 1 0 0 2 0 - 1 1 1 0 0 | Myrceugenia alpigena (DC.) Landrum*** | 1 1 0 0 0 0 - 1 1 1 0 - | Myrceugenia alpigena (DC.) Landrum*** | 1 1 0 0 0 0 - 1 1 1 0 - |
| Luminae                          | Myrceugenia alpigena (DC.) Landrum*** | 1 1 0 0 2 2 0 1 0 1 3 0 | M. larutteana Cambess.** | 1 1 0 1 2 2 0 1 1 1 1 1 | M. larutteana Cambess.** | 1 1 0 1 2 2 0 1 1 1 1 1 |
| Myrciinae                        | Algrizea macrochlamys (DC.) Proença & NicLugh.**** | 1 1 1 0 2 2 0 1 1 1 1 1 | Algrizea macrochlamys (DC.) Proença & NicLugh.**** | 1 1 1 0 2 2 0 1 1 1 1 1 | Algrizea macrochlamys (DC.) Proença & NicLugh.**** | 1 1 1 0 2 2 0 1 1 1 1 1 |

Character states used in anatomical analysis of the ovule and the mature seed-coat of Subtribe Eugeniinae *sensu* Mazine et al. (2018).

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Character states used in anatomical analysis of the ovule and the mature seed-coat of Subtribe Eugeniinae *sensu* Mazine et al. (2018).

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**Ovule**
1. Curvature : Anatropous → Campylotropous (0), Campylotropous (1)
2. Integuments number: Unitegmic (0), Bitegmic (1)
3. Outer integument layers: few (≤ 3) (0), many ≥ 3 (1)
4. Inner integument layers: two (0), two-three (1)

**Mature seed**
5. Exotesta cell shape: tabular and/or cuboid (0), tabular and/or cuboid obliquely elongated (fiber-like) (1), radially elongated (2)
6. Exotesta cell wall: thin (0), thick non-lignified (1), thick lignified (2)
7. Exotesta cells (macroesclereids, cuboid sclereids, lignified fiber-like cells): all seed (0), in the rapheal region (1), in the micropyle (2)

8. Aerenchymatous mesotesta: present (0), absent (1)

9. Outer and/or inner lignified mesotesta: present (0), absent (1)

10. Lignified endotesta: present (0), absent (1)

11. Mature seed-coat: non-lignified (0), exotestal (1), mesotestal (2), exomesotestal or testal (3)

12. Chalaza: pachychlaza (0), perichlaza (1)