**S1 Table**

**S1A Table**. *Vigna Unguiculata* (L.) Walp and *Striga gesnerioides* (Wild.) Vatke initial occurrences data sources used for geographical distribution of both cultivated cowpea and *Striga gesnerioides* in West Africa.

|  |  |
| --- | --- |
|  | Number of data per plant and acquisition period |
| Occurrences data sources | *Vigna Unguiculata*(L.) Walp | *Striga gesnerioides (*Willd.) Vatke  | Acquisition period |
| Field works within the framework of the CowpeaSquare project in Niger | 443 | 443 | September and october 2016, 2017 and 2018 |
| Field works within the framework of the CoEx projet  | 144 |  | 29/01/2020 |
| Field works within the framework of the projet “Gestion durable de la biodiversité du niébé (Vigna unguiculata (L.) Walp) et espèces apparentées sauvages au Sénégal” | 37 |  | 04/06/2020 |
| * GBIF databases : (<https://www.gbif.org/occurrence/download/0292529-200613084148143>) for Vigna Unguiculata (L.) Walp ;

(<https://www.gbif.org/occurrence/download/0292543-200613084148143>) for Striga gesnerioides (Willd.) Vatke | 27153 | 719 | 04/03/2019 (for *Vigna Unguiculata*(L.) Walp), and 29/08/2019 (for *Striga gesnerioides (*Willd.) Vatke) |
| MNHN (Muséum National d'Histoire Naturelle) : <https://science.mnhn.fr/all/list?scientificName=Striga+Gesnerioides> |  | 242 | 19/10/2019 |
| Herbier National du Bénin :( <http://publish.plantnet-project.org/project/herbierbenin> ) |  | 12 | 21/12/2019 |
| [1] | 5 | 18 |  |
| [2] | 1 | 1 |  |
| [3] | 1 | 1 |  |
| [4] | 8 | 8 |  |
| [5] | 48 | 54 |  |
| [6] | 2 | 33 |  |
| [7] | 1 | 1 |  |
| [8] | 22 | 2 |  |
| [9] | 29 | 7 |  |
| [10] |  | 22 |  |
| [11] | 8 | 8 |  |
| [12] | 38 | 38 |  |
| [13] | 8 | 8 |  |
| [14] | 1 | 2 |  |
| [15] | 14 | 14 |  |
| [16] | 5 | 5 |  |
| [17] | 1 |  |  |
| [18] | 4 | 1 |  |
| [19] | 19 | 19 |  |
| **Total** | **27992** | **1658** |  |

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**S1B Table.** Number of datalines removed from GBIF downloaded data (GBIF records).

|  |  |  |
| --- | --- | --- |
|  | *Vigna Unguiculata* (L.) Walp | *Striga gesnerioides (*Willd.) Vatke |
| Cleaning pipeline process used | Number | % | Number | % |
| Records with missing latitude, longitude or locality information | 9708 | 37.28 | 231 | 36.21 |
| Rounded coordinates (that cannot be safely improved) | 348 | 1.34 | 55 | 8.62 |
| Records with duplicate coordinates | 3589 | 13.78 | 118 | 18.50 |
| Records with coordinates equal to zero | 5735 | 22.03 | 121 | 18.97  |
| Records with duplicate localities/cities | 5174 | 19.87 | 113 | 17.71 |
| Records from market places | 1300 | 4.99 | 0 | 0 |
| Records related to wild cowpea | 184 | 0.71 |  |  |
| Total | 26038 | 100 | 638 | 100 |

**S1C Table.** Number of final occurrence data selected for geographical distribution of both cultivated cowpea [*Vigna unguiculata* (L.) Walp] and *Striga gesnerioides* in West Africa after cleaning and filtering.

|  |
| --- |
| *Vigna Unguiculata* (L.) Walp |
|  |  | Removed data | Selected data |
| Occurrence data sources | Original data | Number | % | Number | % |
| Field studies | 624 | 194 | 31.09 | 430 | 68.91 |
| GBIF databases | 27153 | 26038 | 95.89 | 1115 | 4.11 |
| Relevant literature | 215 | 13 | 6.05 | 202 | 93.95 |
| Total | 27992 | 26245 | 93.76 | 1747 | 6.24 |
| *Striga gesnerioides (*Willd.) Vatke |
|  |  | Removed data | Selected data |
| Occurrence data sources | Original data | Number | % | Number | % |
| Field studies | 443 | 423 | 95.49 | 20 | 4.51 |
| GBIF databases | 719 | 638 | 88.73 | 81 | 11.27 |
| collections of MNHN (Paris) and National Herbarium of Benin | 254 | 167 | 65.75 | 87 | 34.25 |
| Relevant literature | 242 | 5 | 2.07 | 237 | 97.93 |
| Total | 1658 | 1233 | 74.37 | 425 | 25.63 |