MAR 28, 2024

OPEN ACCESS

DOI:
dx.doi.org/10.17504/protocols.io.j8nlk85wdl5r/v1

Protocol Citation: Anjali Sharma 2024. Protocol To Access Produce Images from the Imperfect Foods Dataverse on the Harvard Dataverse. **protocols.io** https://dx.doi.org/10.17504/protocols.io.j8nlk85wdl5r/v1

Protocol status: Working
We use this protocol and it's working

Protocol To Access Produce Images from the Imperfect Foods Dataverse on the Harvard Dataverse

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ABSTRACT

In the face of the impending challenge of feeding a growing global population, one-third of all food produced ends up as waste. A notable contributor to this problem is the wastage of a third of perfectly edible and nutritious fresh produce because they do not meet the high cosmetic standards expected by consumers. Eliminating this wastage of imperfect produce is therefore a crucial and sustainable means to increase food supply for a growing global population. This can be achieved through automated sorting of good, bad and imperfect produce using automation , robotics and machine vision. A prerequisite for such automated sorting are fast and accurate machine vision algorithms for successful differentiation between good, bad and imperfect produce. Training such algorithms requires large image datasets. While much work has gone into collecting images of good and bad produce, to the best of our knowledge, no such dataset exists for imperfect produce items. To fill this gap I have curated a dataset of good, bad, and imperfect produce items for a wide variety of fruits and vegetables. At this time of writing of this version of the protocol, images have been collected for just over 30 produce items and new ones are continuously being added. The dataset has been made publicly available on the Harvard Dataverse for use in training machine vision algorithms for sorting good, bad, and imperfect produce. It is our hope that this open dataset will contribute to improving research and practice for sorting and saving of imperfect produce in the food supply chain.

In this protocol, we provide instructions on how to access these images for interested researchers and practitioners.

Created: Mar 27, 2024

Last Modified: Mar 28, 2024

PROTOCOL integer ID: 97473

Keywords: Imperfect Produce, Ugly Food, Food Waste, Sustainability, SDG

Introduction

1 The produce images are stored in the imperferct foods dataverse (IFDverse) on the Harvard Dataverse. Decide on whether to search for produce on Harvard Dataverse, OR to use the link included in the annotated bibliography of the IFDverse.

Find Dataset for Produce and Type of Produce in Imperfect Foods Dataver…

2 Go to desired produce item and type of produce - Good, Bad or Imperfect.

STEP CASE

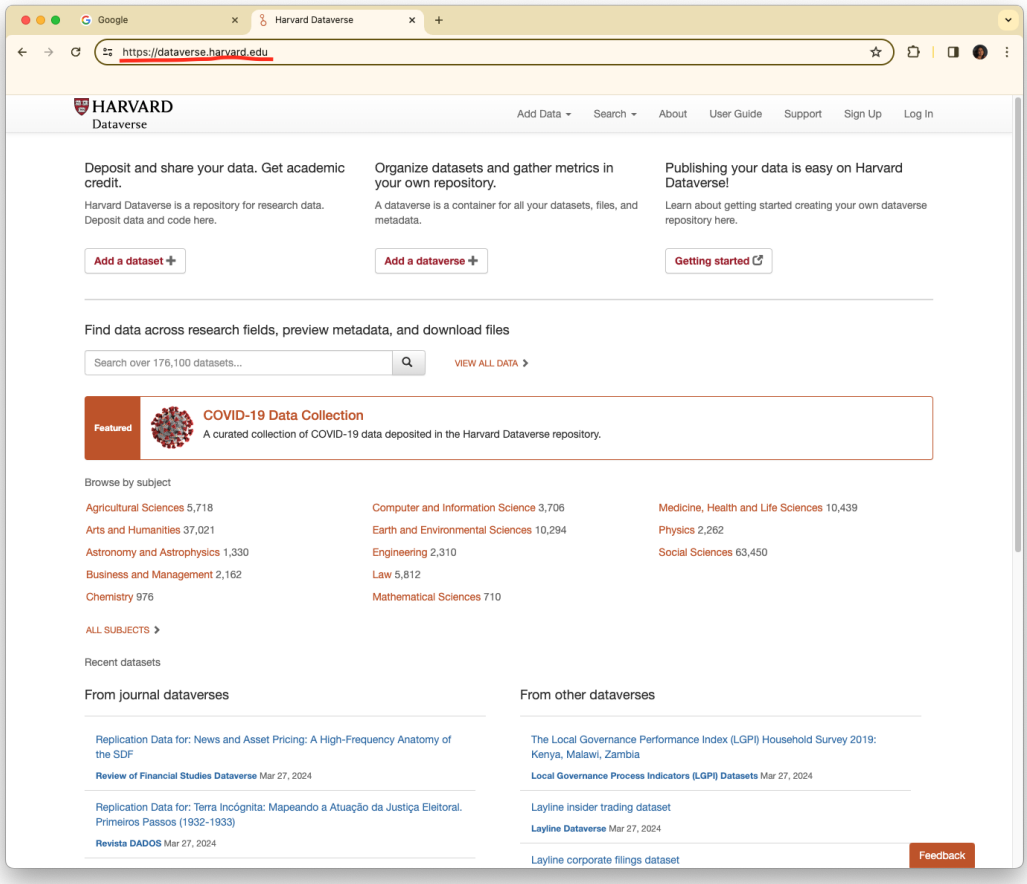
Choose Method To Access Produce Images 12 steps

Follow this method of accessing the produce image datasets when you are not sure of the specific produce item for which you need the images. You can also follow this method if you wish to get an overall idea of the different datasets available in the IFDverse.

The steps for this method are described in the following steps.

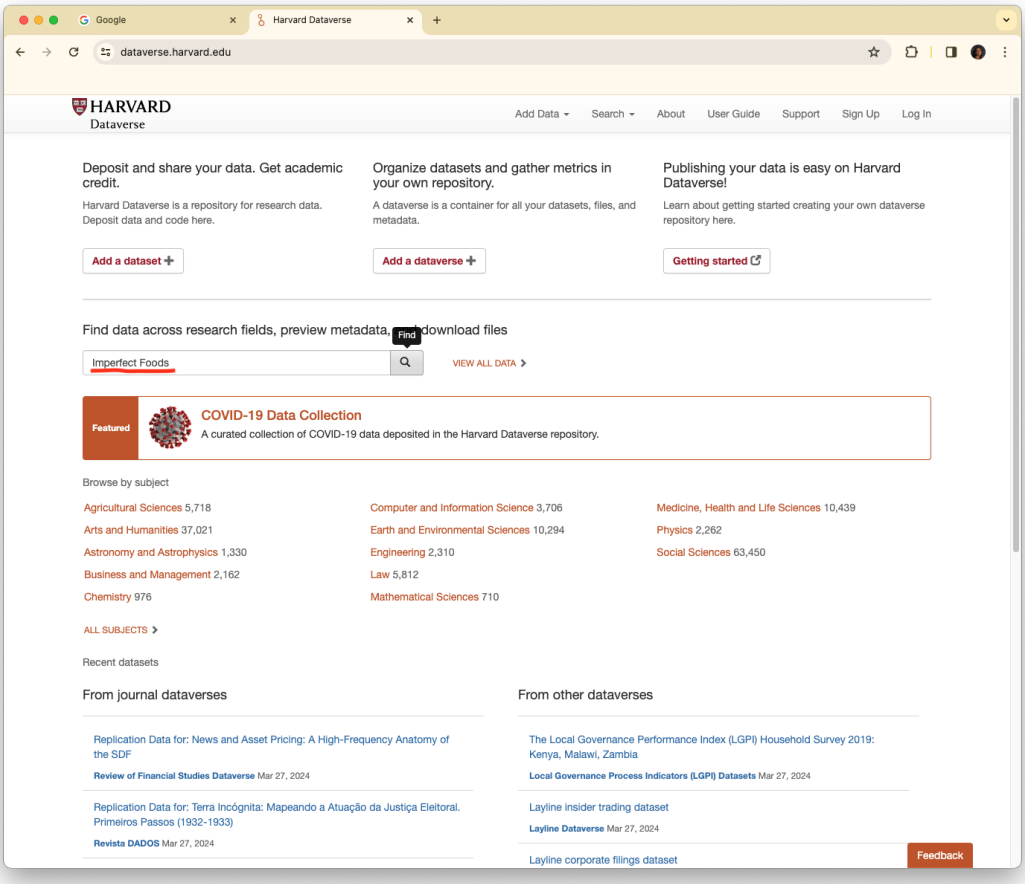
3 Start a browser on your computing device and type in the following URL(Uniform Resource Locator) address : https://dataverse.harvard.edu/

4 Confirm that you see the Harvard Dataverse home page similar to the one shown here.

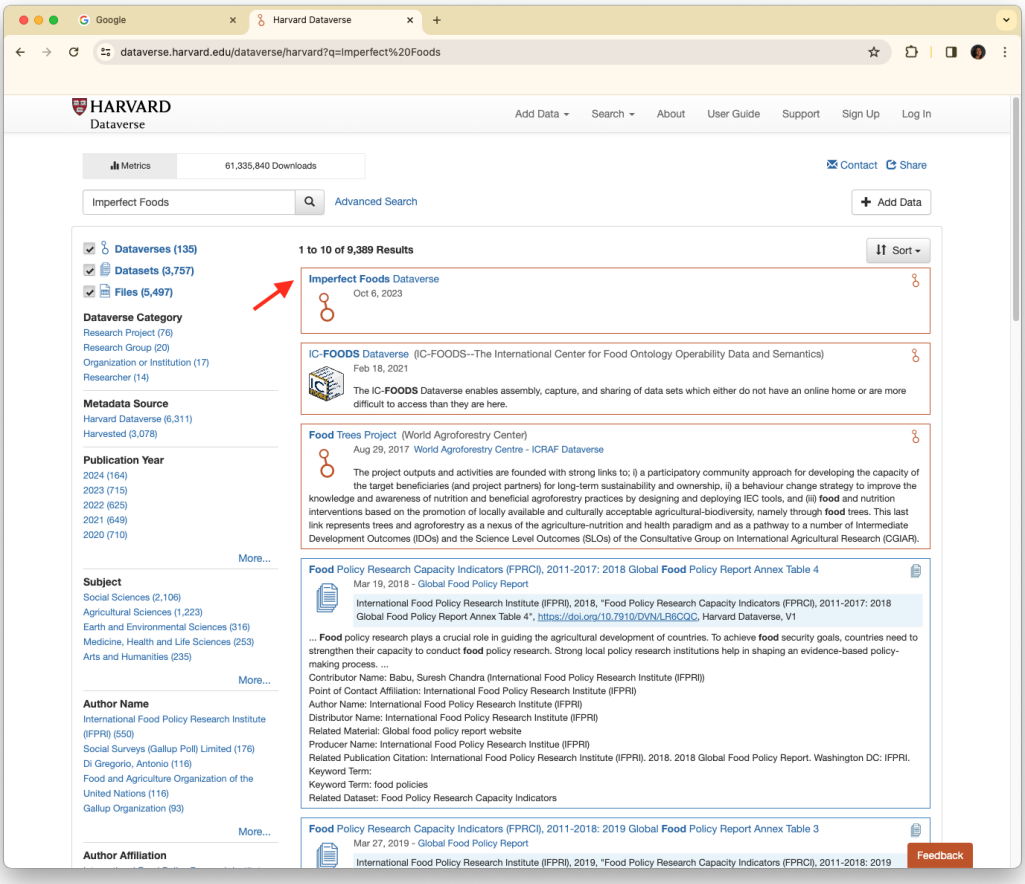


Harvard Dataverse Homepage.

5 Type in "Imperfect Foods" in the search bar and click on search button, as shown in the image below.

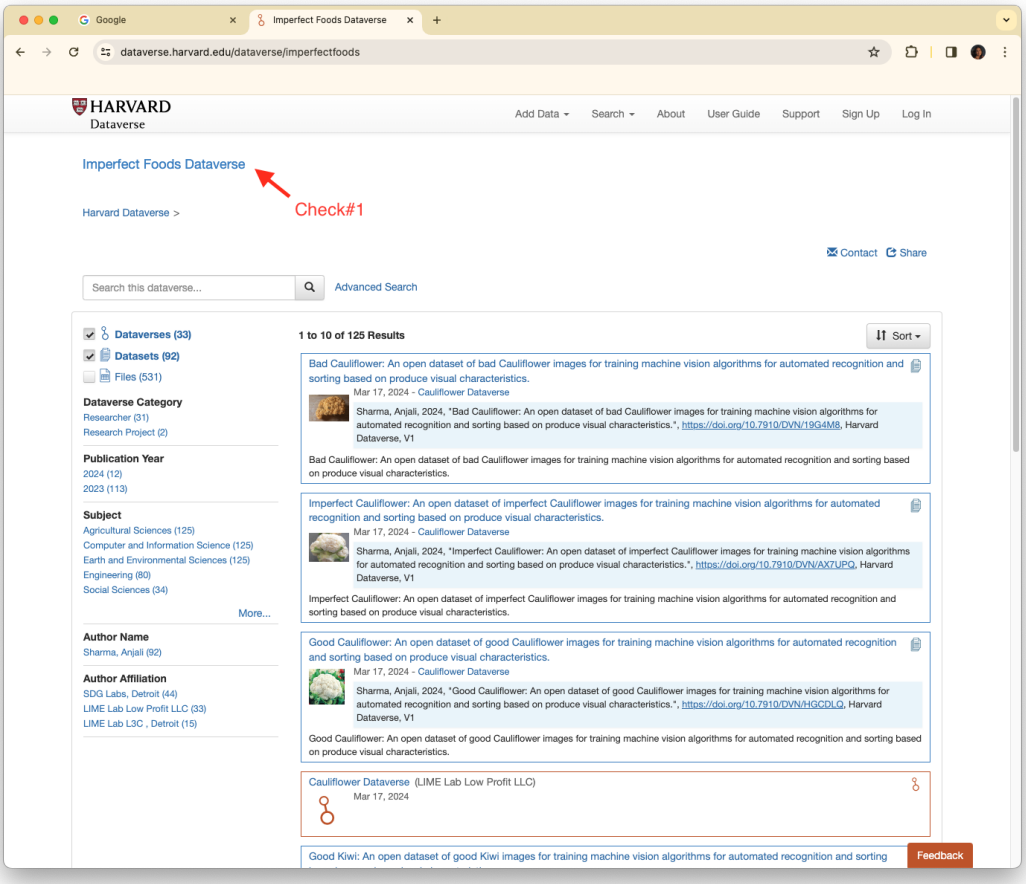


6 In the search results that you get, you should get the "Imperfect Foods Dataverse" as one result, as shown in image below. Click on the 'Imperfect Foods Dataverse' Link.

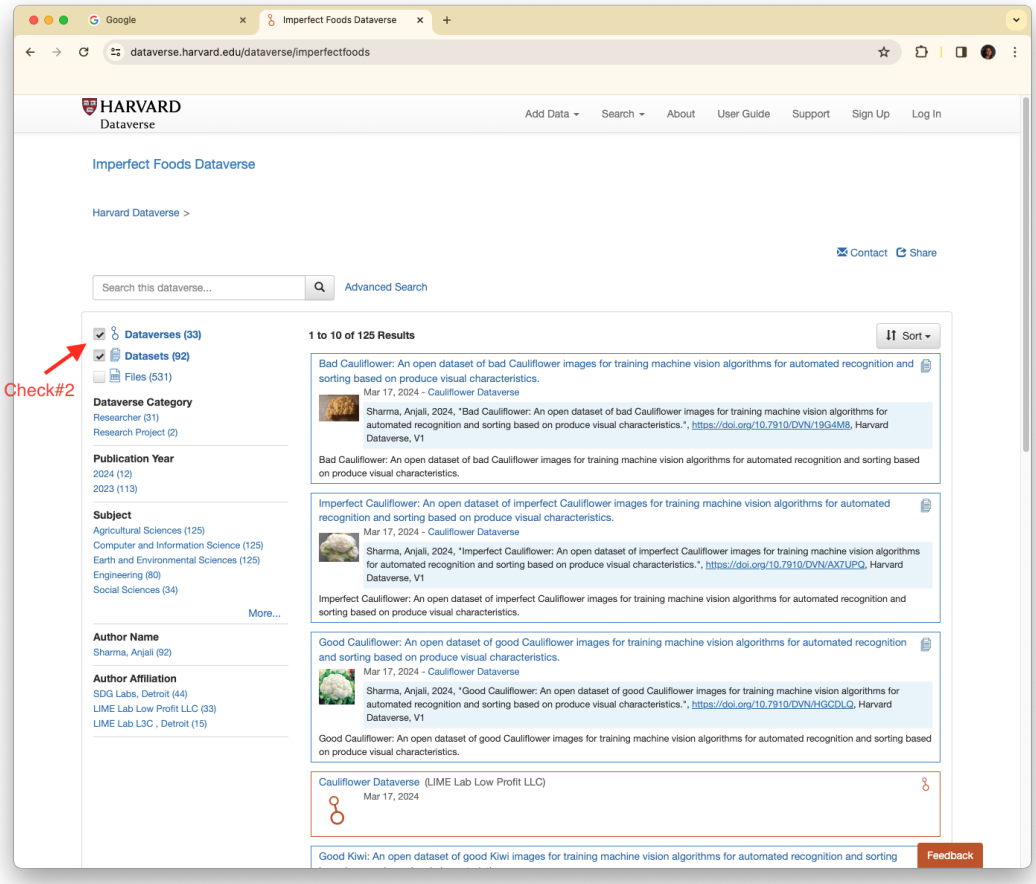


7 Confirm that the link takes you to the following screen and make the following checks on the screen:

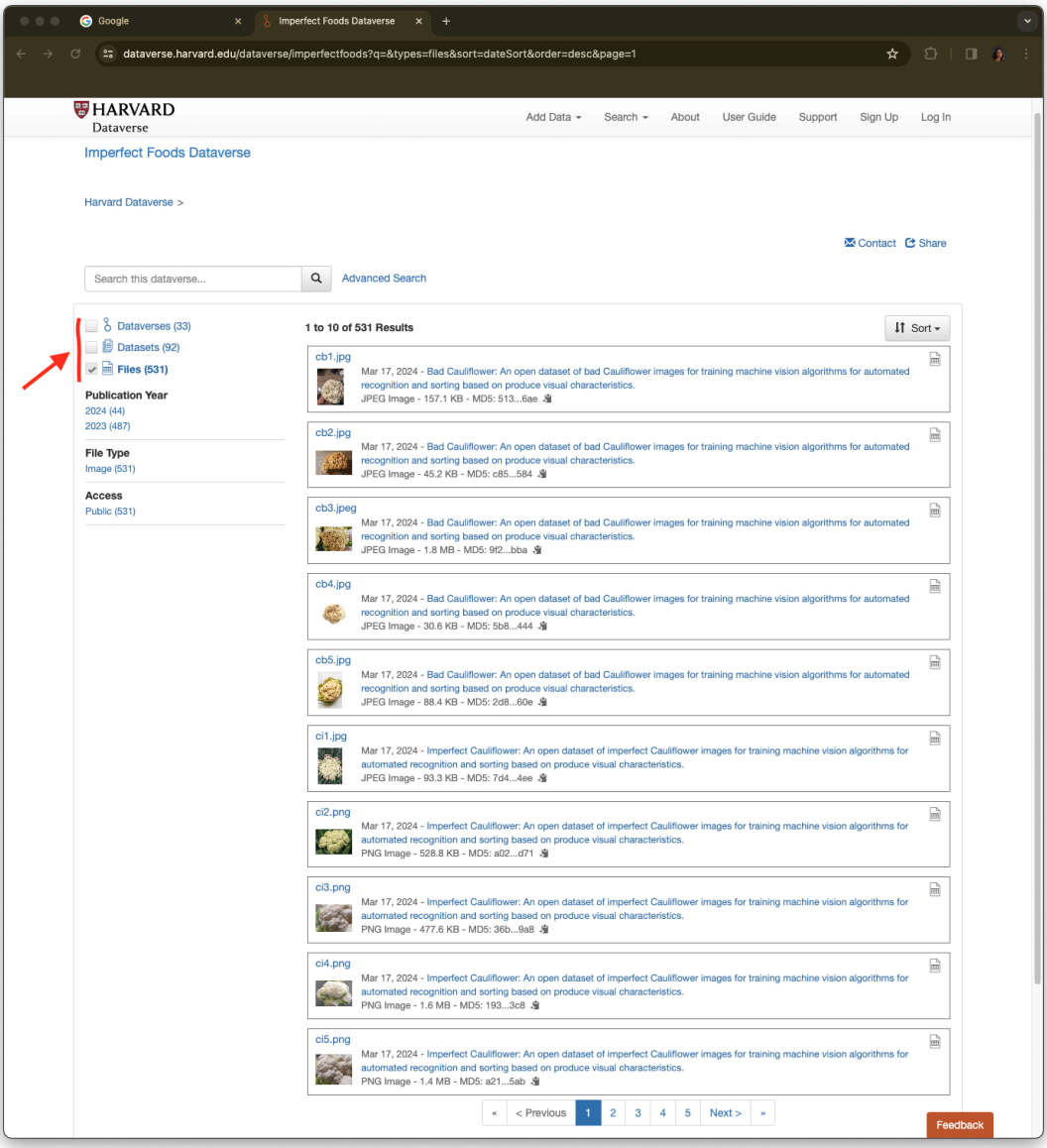
7.1 Check#1: Check that the Imperfect Foods Dataverse is shown at top of the screen.



7.2 Check#2: Check for the number of dataverse and datasets. The number of dataverse is 33 and the number of datasets is 92 at the time of this writing. As more produce items get added, the number of dataverses and datasets will increase. These numbers will be updated in later versions of this protocol.



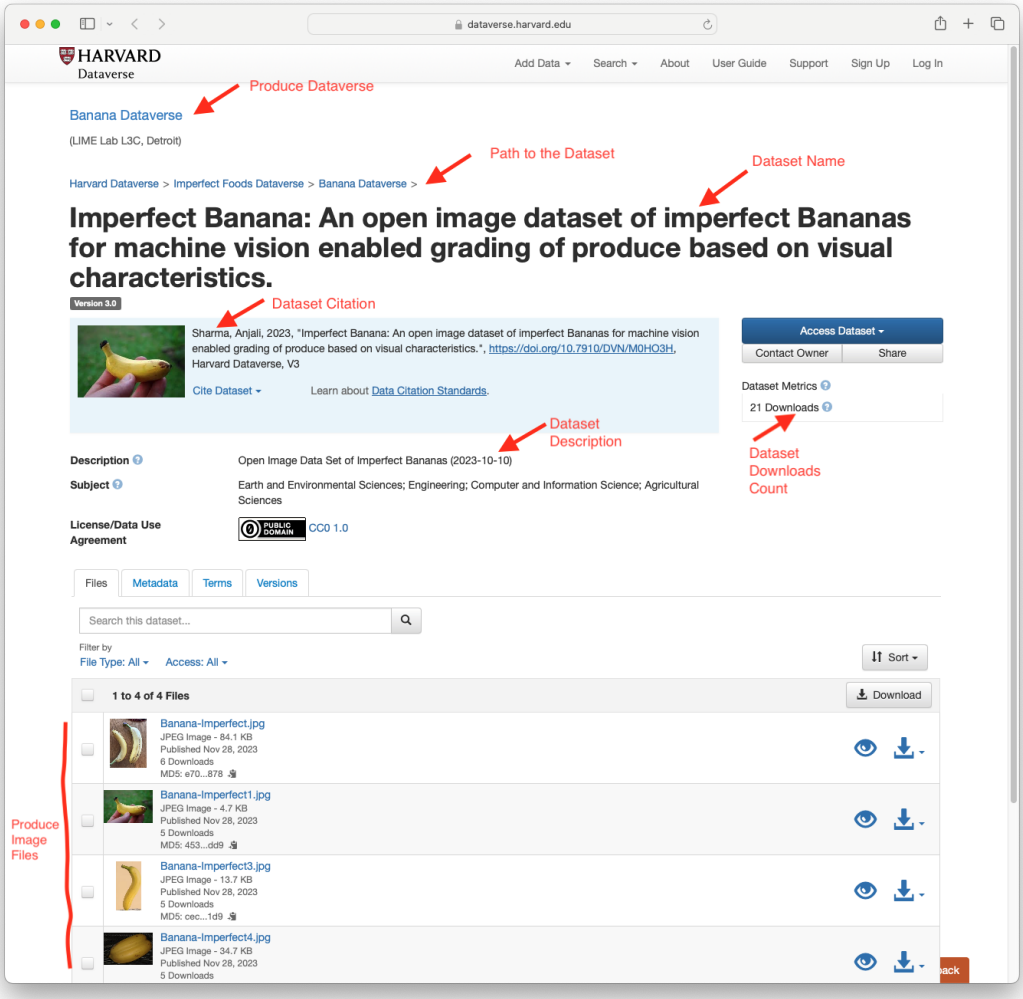
7.3 Check#3 Check to view individual images of produce items. To do that check the 'Files' box and uncheck the 'Dataverse' and 'Datasets' boxes as shown in the image below. This will display a listing of produce images.



8 Browse and click on the produce dataset for which you wish to acquire images. This will take you to the dataset within the Harvard Dataverse.

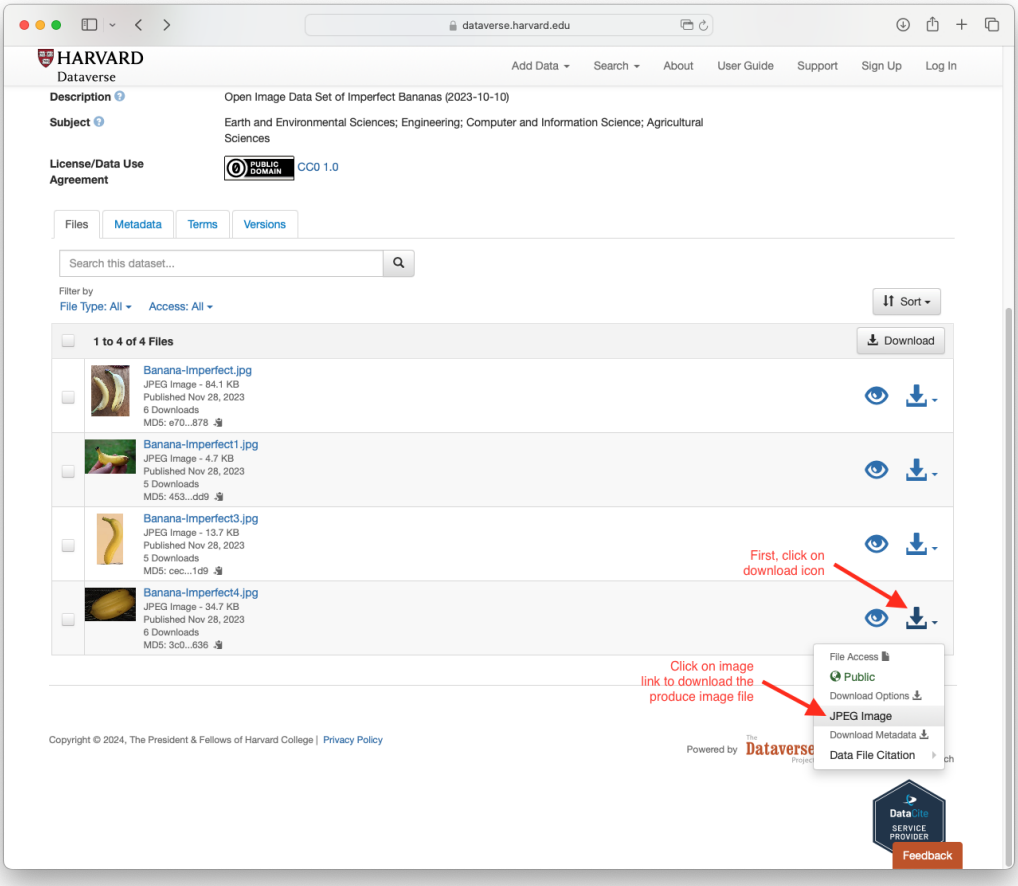
Download images for Produce and Type of Produce from Imperfect Foods …

9 Look carefully at the image dataset page. Check out the various features of the dataset that have been highlighted in the attached image.

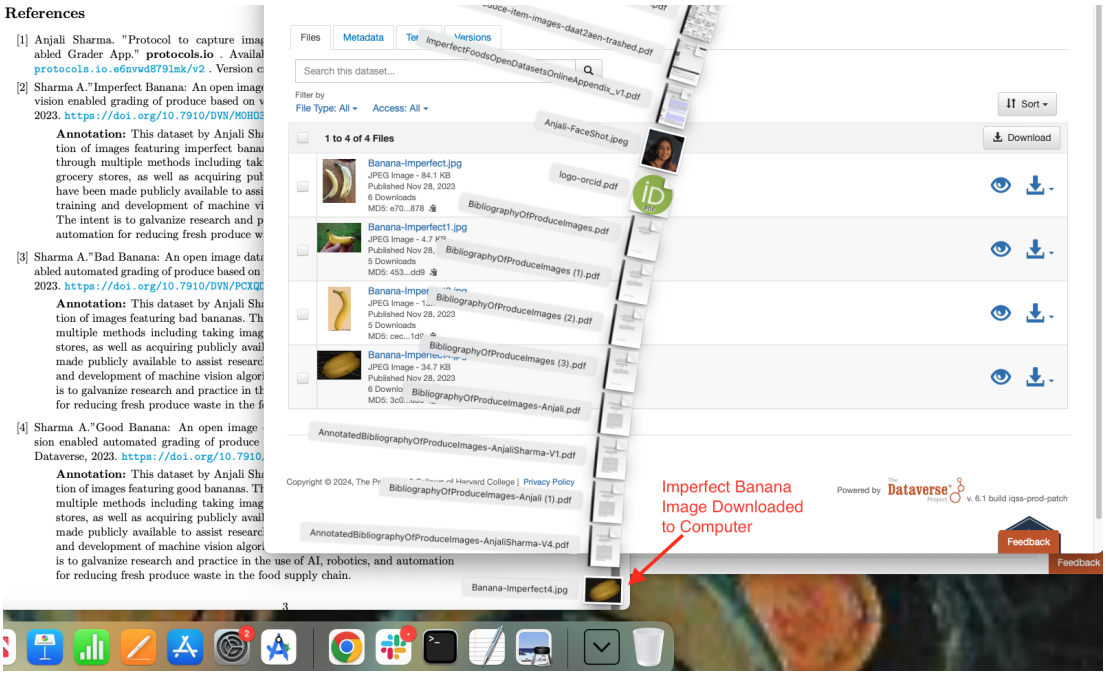


Download Produce Images

10 To Download a specific image click on the download button icon as shown in image below.



11 Check for downloaded image in your downloads folder.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Filter by
File Type: All
Access: All
Sort
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