

2024 CropProphet Weather Edition SFTP Contents

The Weather Edition of CropProphet includes year-long access to the CropProphet csv databases located on the secure ftp server: <sftp://sftp.cropprophet.com>. This data offering provides a daily historical weather archive along with daily real-time updates of weather data that can be used for custom analytics and models, and is available for many of the main growing regions around the world. This document provides detailed specifications of the sftp contents including the directories, file names, content of the files, and the update schedule.

Upon logging into the sftp server you will find a parent directory labeled with the year that the CropProphet data was produced, followed by a directory labeled with the country from which data is available (e.g. 2024/united_states, 2024/europe). The weather content is available via the wxobs and wxforecast subdirectories. Supplemental crop data for each region is also available via subdirectories named with abbreviations of the government sources.

2024 Data Summary

- **united_states/wxobs** – CropProphet daily and monthly observed weather and satellite data for the United States
- **united_states/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for the United States from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **united_states/usda** – USDA data for corn, soybeans, winter wheat, barley, cotton, oats, rice, sorghum, and spring wheat:
 - 1960-2023 USDA county, state, and national final estimates of yield, production, planted acres, and harvested acres
 - Historical and real-time weekly updates of USDA state and national crop conditions
 - Historical and once per year update of USDA state and national prospective planting acreage estimates
 - Historical and real-time updates of USDA state and national planted and harvested acreage estimates
 - Historical and real-time weekly updates of USDA state and national crop progress
 - 1986-present state and national yield and production forecasts from USDA
- **argentina/wxobs** – CropProphet daily observed weather for Argentina
- **argentina/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for Argentina from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **argentina/magyp** – Argentina Ministry of Agriculture data for barley, corn, rice, sorghum, soybeans, and wheat:
 - 1970-2023 national, province and department final estimates of yield, production, planted acres, and harvested acres

- **australia/wxobs** – CropProphet daily and monthly observed weather for Australia
- **australia/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for Australia from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **australia/abs** – Australian Bureau of Statistics data for barley canola, cotton, oats, sorghum, and wheat:
 - 2016-2022 statistical areas 2 (sa2) and 4 (sa4) final estimates of yield, and production
- **brazil/wxobs** – CropProphet daily observed weather for Brazil
- **brazil/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for Brazil from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **brazil/ibge** – Brazilian Institute of Geography and Statistics data for 1st season corn, second season corn, total corn, and soybeans:
 - 1974-2022 national, state, and municipality final estimates of yield, production, planted acres, and harvested acres for total corn and soybeans
 - 1990-2022 microregion final estimates of yield, production, planted acres, and harvested acres for total corn and soybeans
 - 2003-2022 national, state, municipality, and microregion final estimates of yield, production, planted acres, and harvested acres for 1st and 2nd season corn
- **canada/wxobs** – CropProphet daily and monthly observed weather for Canada
- **canada/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for Canada from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **canada/statcan** – Statistics Canada data for barley canola, corn, oats, soybeans, spring wheat, winter wheat and total wheat:
 - 2017-2023 national, province, and small area data (sad) final estimates of yield, production, planted acres, and harvested acres
- **europa/wxobs** – CropProphet daily observed weather for Europe
- **europa/wxforecast** – CropProphet daily updated 15- and 45-day weather forecast information for Europe from the GFS OPER, GEFS, ECMWF, and ECMWF Ext forecast models
- **europa/eurostat** – European Statistics data for corn, oats, rye, soybeans, spring barley, sunflower, winter barley winter rapeseed, and winter wheat:
 - 2000-2022 nomenclature of territorial units for statistics (NUTS) levels 0, 1, and 2 final estimates of yield, production, and planted acres

united_states/wxobs Directory – 3 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_uscounty_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather and satellite data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Oregon State PRISM Climate Group, and the Visible Infrared Imaging Radiometer Suite (VIIRS) satellite instrument. The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather or satellite data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
 - “ndvi” – daily ndvi (unit=unitless)
 - “ndvianom” – daily ndvi anomaly (unit=standard deviation)
- **File Content** – Variable with up to 369 csv delimited columns by the end of the year
 - County FIPS ID, State, County and up to (366) values for each day of the current year

- Missing data is represented with no values in the csv columns
- **Update Schedule**
 - Updated by 1330UTC each day during season, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

FORMAT 2: daily_history/WEATHERVAR_daily_uscounty_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet history of daily updating observational weather and satellite data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Oregon State PRISM Climate Group, and the Visible Infrared Imaging Radiometer Suite (VIIRS) satellite instrument. For the anomaly variables, the climatology period is 1981 to the previous year, except for the NDVI variables which use the period 1982 to the previous year.
- **Naming Scheme**
 - STARTYEAR is the first year of data availability. For all variables except those related to NDVI, the first year is 1981. For NDVI data the first year is 2003.
 - ENDYEAR is the last full year of data availability. Once updated near the beginning of the year, this is the prior year to the current date.
 - WEATHERVAR is the daily observed weather or satellite data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)

- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- “ndvi” – daily ndvi (unit=unitless)
- “ndvianom” – daily ndvi anomaly (unit=standard deviation)
- **File Content** – Variable with up to 369 csv delimited columns by the end of the year
 - County FIPS ID, State, County and up to (366) values for each day of the current year
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The full history including the prior year of data will be updated by January 15th of each year.

FORMAT 3: monthly/WEATHERVAR_uscounty_1981_ENDYEAR.csv

- **Description**
 - CropProphet monthly updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis and the Oregon State PRISM Climate Group. For the anomaly variables, the monthly climatology period is 1981 to the previous year. This dataset includes the full monthly history from 1981 to the present year.
- **Naming Scheme**
 - ENDYEAR is the last year that data is available, typically the current year.
 - WEATHERVAR is the observed weather values and anomalies as follows:
 - “gdd” – monthly growing degree day (units=degrees F)
 - “gdd/gddanom” – monthly growing degree day anomaly (units=degrees F)
 - “pcp” – monthly precipitation (units=inches)
 - “pcpanom” – monthly precipitation anomaly (units=percent of normal)
 - “rh” – monthly relative humidity (units=percent)
 - “rhanom” – monthly relative humidity anomaly (units=percent)
 - “swrad” – monthly short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – monthly short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – monthly temperature (units=degrees F)
 - “tmpanom” – monthly temperature anomaly (units=degrees F)
 - “tmin” – monthly mean daily minimum temperature (units=degrees F)

- “tminanom” – monthly mean daily minimum temperature anomaly (units=degrees F)
- “tmax” – monthly mean daily maximum temperature (units=degrees F)
- “tmaxanom” – monthly mean daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – monthly 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – monthly 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 16 csv delimited columns
 - County FIPS ID, State, County, Year, and (12) values for each month of each year
- **Update Schedule**
 - Updated by 1330UTC each day during the growing season, with the previous month’s data available by the 3rd day of each month. Please note that because 7 days of the daily data is preliminary, the previous month’s values will also update several times during the first week of each new month.
 - Year-round updates

united states/wxforecast Directory – 2 Distinct File Formats

FORMAT 1: daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_uscounty_YYYYMMDD.csv

- **Description**
 - CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)

- “rh” – daily relative humidity (units=percent)
- “rhanom” – daily relative humidity anomaly (units=percent)
- “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
- “tmp” – daily temperature (units=degrees F)
- “tmpanom” – daily temperature anomaly (units=degrees F)
- “tmin” – daily minimum temperature (units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on which model is selected. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - County FIPS ID, State, County and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2: weekly/YYYYMMDD/WXMODEL_WEATHERVAR_uscounty_init_YYYYMMDD_FCSTPERIOD.csv

- **Description**
 - CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system

- ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
- WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day
(units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly
(units=degrees F)
 - “pcp” – daily precipitation
(units=inches)
 - “pcpanom” – daily precipitation anomaly
(units=percent of normal)
 - “rh” – daily relative humidity
(units=percent)
 - “rhanom” – daily relative humidity anomaly
(units=percent)
 - “swrad” – daily short-wave radiation (solar)
(units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly
(units=standard deviation)
 - “tmp” – daily temperature
(units=degrees F)
 - “tmpanom” – daily temperature anomaly
(units=degrees F)
 - “tmin” – daily minimum temperature
(units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature
(units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture
(units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly
(units=standard deviation)
- FCSTPERIOD is either
 - week_1
 - week_2
 - weeks_1-2
 - week_3 (ecmwf_ext model forecast only)
 - week_4 (ecmwf_ext model forecast only)
 - week_5 (ecmwf_ext model forecast only)
 - week_6 (ecmwf_ext model forecast only)
 - weeks_3-4 (ecmwf_ext model forecast only)
 - weeks_3-6 (ecmwf_ext model forecast only)
 - weeks_5-6(ecmwf_ext model forecast only)
- **File Content** – 2 csv delimited columns.
 - County FIPS ID, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

united_states/usda Directory – 8 Distinct File Formats

FORMAT 1: CROP_usda_finalestimates_usnational_1960_ENDYEAR.csv

- **Description**
 - Annual history of USDA end-of-season final estimates of yield, production, planted acres, and harvested acres for the U.S.
- **Naming Scheme**
 - CROP is either barley, corn, cotton, oats, rice, sorghum, soybeans, springwheat, or winterwheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 7 csv delimited columns
 - year, national fips id, U.S., planted acres, harvested acres, yield in bpa, and production in bushels
- **Update Schedule**
 - Once a year, by March 31st.

FORMAT 2: CROP_usda_finalestimates_usstate_1960_ENDYEAR.csv

- **Description**
 - Annual history of USDA end-of-season final estimates of yield, production, planted acres, and harvested acres for all growing states.
- **Naming Scheme**
 - CROP is either barley, corn, cotton, oats, rice, sorghum, soybeans, springwheat, or winterwheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 7 csv delimited columns
 - year, state fips id, state name, planted acres, harvested acres, yield in bpa, and production in bushels
- **Update Schedule**
 - Once a year, by March 31st.

FORMAT 3: CROP_usda_finalestimates_uscounty_1960_ENDYEAR.csv

- **Description**
 - Annual history of USDA end-of-season final estimates of yield, production, planted acres, and harvested acres for all available U.S. counties
- **Naming Scheme**
 - CROP is either barley, corn, cotton, oats, rice, sorghum, soybeans, springwheat, or winterwheat
 - ENDYEAR is the last year of data that is available, typically current year minus one
- **File Content** – 9 csv delimited columns
 - year, county fips ID, state abbreviation, state name, county name, planted acres, harvested acres, yield in bpa, and production in bushels
- **Update Schedule**
 - Once a year, by March 31st.

FORMAT 4: CROP_usda_estimates_1986_ENDYEAR.csv

- **Description**
 - USDA history of monthly yield and production forecasts for each major growing state and for the U.S.

- **Naming Scheme**
 - CROP is either corn, soybeans, or winterwheat
 - ENDYEAR is the latest year with forecast data available from USDA, typically the current year during the growing season
- **File Content** – 5 csv delimited columns
 - crop name, date that the forecast was made, state abbreviation or “US”, yield in bpa, production in 1000’s of bushels
- **Update Schedule**
 - For specific dates and times, please see the WADSE and crop production USDA report schedule from:
https://www.nass.usda.gov/Publications/Calendar/reports_by_date.php
 - U.S. Corn and Soybeans Forecasts
 - Within 1 hour of the USDA release from May to November
 - U.S. Winter Wheat Forecasts
 - Within 1 hour of the USDA release from May to August
 - Major State U.S. Corn and Soybeans Forecasts
 - Within 1 hour of the USDA release from August to November
 - Major State U.S. Winter Wheat Forecasts
 - Within 1 hour of the USDA release from May to August

FORMAT 5: CROP_usda_cropprogress_STARTYEAR_ENDYEAR.csv

- **Description**
 - Historical and real-time updates of USDA weekly crop progress information for each major growing state and for the U.S.
- **Naming Scheme**
 - CROP is either corn, soybeans, or winterwheat
 - STARTYEAR is the first year of data that is available from USDA
 - Corn:1979
 - Soybeans: 1980
 - Winter Wheat: 1980
 - ENDYEAR is the last year of data that is available, typically the current year during the growing season
- **File Content** – Number of Columns Depend on CROP
 - Corn 9 csv delimited columns with blanks indicating data not available:
 - state abbreviation, date of the USDA crop progress report, percent planted, percent emerged, percent silking, percent doughing, percent dented, percent mature, and percent harvested
 - Soybeans 8 csv delimited columns with blanks indicating data not available:
 - state abbreviation, date of the USDA crop progress report, percent planted, percent emerged, percent blooming, percent podding, percent with leaves dropping, and percent harvested
 - Winter Wheat 7 csv delimited columns with blanks indicating data not available:
 - state abbreviation, date of the USDA crop progress report, percent planted, percent emerged, percent headed, percent harvested, percent jointed
- **Update Schedule** - For specific dates and times, please see the USDA crop progress report schedule from https://www.nass.usda.gov/Publications/Calendar/reports_by_date.php

- Within 1 hour of the weekly release from USDA during the growing season, typically by 21UTC on Mondays

FORMAT 6: CROP_usda_crocondition_1986_ENDYEAR.csv

- **Description**
 - Historical and real-time updates of USDA weekly crop condition information for each major growing state and for the U.S.
- **Naming Scheme**
 - CROP is either corn, soybeans, or winterwheat
 - ENDYEAR is the last year of data that is available, typically the current year during the growing season
- **File Content** – 8 csv delimited columns
 - Crop name, date of the USDA crop progress report, state abbreviation, percent of crop in very poor condition, percent in poor condition, percent in fair condition, percent in good condition, and percent in excellent condition
- **Update Schedule** - For specific dates and times, please see the USDA crop progress report schedule from https://www.nass.usda.gov/Publications/Calendar/reports_by_date.php
 - Within 1 hour of the weekly release from USDA during the growing season, typically by 21UTC on Mondays.

FORMAT 7: CROP_usda_prospective_plantings_STARTYEAR_ENDYEAR.csv

- **Description**
 - Historical and annual update of USDA prospective planted acre estimates
- **Naming Scheme**
 - CROP is either corn, soybeans, or winterwheat
 - STARTYEAR is the first year of data that is available from USDA
 - Corn:1975
 - Soybeans: 1975
 - Winter Wheat: 1995
 - ENDYEAR is the last year of data that is available, typically current year near the start of the upcoming growing season
- **File Content** – 3 csv delimited columns
 - State name or US, year of estimate, prospective planted acres
- **Update Schedule** - For specific dates and times, please see the USDA crop progress report schedule from https://www.nass.usda.gov/Publications/Calendar/reports_by_date.php
 - Within 1 day of the once-a-year release from USDA typically near the end of March.

FORMAT 8: CROP_usda_acreage_report_STARTYEAR_ENDYEAR.csv

- **Description**
 - Historical and real-time updates of USDA planted and harvested acreage estimates based on the USDA prospective plantings report in March, the USDA acreage report in June, and occasional late season planted acreage adjustments that are included as part of the August USDA crop progress report.
- **Naming Scheme**
 - CROP is either corn, soybeans, or winterwheat
 - STARTYEAR is the first year of data that is available from USDA
 - Corn:1975

- Soybeans: 1975
- Winter Wheat: 1975
- ENDYEAR is the last year of data that is available, typically current year of the upcoming growing season
- **File Content** – 5 csv delimited columns
 - State name or US, year, report date, planted acres, harvested acres
- **Update Schedule** - For specific dates and times, please see the USDA acreage report schedule from https://www.nass.usda.gov/Publications/Calendar/reports_by_date.php

The initial update occurs near the end of March when the prospective planting acreage report is released from USDA. A second update is available near the end of June, which includes both the planted and harvested acreage estimates from the June USDA acreage report. Finally, USDA resurveys the acreage in some years, and this updated acreage data is added following the release of the mid-August crop progress report.

argentina/wxobs Directory – 2 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_argentina_department_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and the Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)

- “tmin” – daily minimum temperature (units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 4 csv delimited columns with daily weather data for the current year
 - Date, department ID, department, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - Updated by 0800UTC each day during season, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

FORMAT 2

daily_history/WEATHERVAR_daily_argentina_department_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet history of daily updating observational weather from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and the Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - STARTYEAR is the first year of data availability. For all variables except precipitation (pcp, pcpanom), the first year is 1981. For the precipitation variables the first year is 2000.
 - ENDYEAR is the last full year of data availability. Once updated near the beginning of the year, this is the prior year to the current date.
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)

- “swrad” – daily short-wave radiation (solar)
(units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly
(units=standard deviation)
- “tmp” – daily temperature
(units=degrees F)
- “tmpanom” – daily temperature anomaly
(units=degrees F)
- “tmin” – daily minimum temperature
(units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature
(units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture
(units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly
(units=standard deviation)
- **File Content** – 5 csv delimited columns with daily weather data for the current year
 - Year, date, department ID, department, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The full history including the prior year of data will be updated by January 15th of each year.

argentina/wxforecast Directory – 2 Distinct File Formats

FORMAT

1:

daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_argentina_department_YYYYMMDD.csv

- **Description**
 - CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day
(units=degrees F)

- “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on the selected model. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - Department ID, province, department and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns
 - **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2:

weekly/YYYYMMDD/WXMODEL_WEATHERVAR_argentina_department_init_YYYYMMDD_FCSTP
ERIOD.csv

- **Description**
 - CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.

- **Naming Scheme**

- YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
- WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
- WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day
(units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly
(units=degrees F)
 - “pcp” – daily precipitation
(units=inches)
 - “pcpanom” – daily precipitation anomaly
(units=percent of normal)
 - “rh” – daily relative humidity
(units=percent)
 - “rhanom” – daily relative humidity anomaly
(units=percent)
 - “swrad” – daily short-wave radiation (solar)
(units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly
(units=standard deviation)
 - “tmp” – daily temperature
(units=degrees F)
 - “tmpanom” – daily temperature anomaly
(units=degrees F)
 - “tmin” – daily minimum temperature
(units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature
(units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture
(units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly
(units=standard deviation)
- FCSTPERIOD is either
 - week_1
 - week_2
 - weeks_1-2
 - week_3 (ecmwf_ext weather forecast only)
 - week_4 (ecmwf_ext weather forecast only)
 - week_5 (ecmwf_ext weather forecast only)

- week_6 (ecmwf_ext weather forecast only)
- weeks_3-4 (ecmwf_ext weather forecast only)
- weeks_3-6 (ecmwf_ext weather forecast only)
- weeks_5-6(ecmwf_ext weather forecast only)
- **File Content** – 4 csv delimited columns.
 - Department ID, province, department, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

argentina/magpy Directory – 3 Distinct File Formats

FORMAT 1: CROP_magyp_finalestimates_argentina_department_1970_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Argentina departments
- **Naming Scheme**
 - CROP is either barley, corn, rice, sorghum, soybeans, or wheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 8 csv delimited columns
 - year, province, department id, department, planted acres in hectares, harvested acres in hectares, yield in kg per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

FORMAT 2: CROP_magyp_finalestimates_argentina_province_1970_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Argentina provinces
- **Naming Scheme**
 - CROP is either barley, corn, rice, sorghum, soybeans, or wheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 7 csv delimited columns
 - year, province id, province, planted acres in hectares, harvested acres in hectares, yield in kg per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

FORMAT 3: CROP_magyp_finalestimates_argentina_national_1970_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Argentina
- **Naming Scheme**
 - CROP is either barley, corn, rice, sorghum, soybeans, or wheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 6 csv delimited columns

- year, country, planted acres in hectares, harvested acres in hectares, yield in kg per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

australia/wxobs Directory – 3 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_australia_sa2_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and the Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)

- **File Content** – 3 csv delimited columns with daily weather data for the current year
 - Date, statistical area 2 ID, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - Updated by 0815UTC each day during season, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

FORMAT 2: daily_history/WEATHERVAR_daily_australia_sa2_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet history of daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and the Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - STARTYEAR is the first year of data availability. For all variables except precipitation (pcp, pcpanom), the first year is 1981. For the precipitation variables the first year is 2000.
 - ENDYEAR is the last full year of data availability. Once updated near the beginning of the year, this is the prior year to the current date.
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)

- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 4 csv delimited columns with daily weather data for the current year
 - Year, date, statistical area 2 ID, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The full history including the prior year of data will be updated by January 15th of each year.

FORMAT 3: monthly/WEATHERVAR_australia_sa2_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet monthly updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and the Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - ENDYEAR is the last year that data is available, typically the current year.
 - WEATHERVAR is the observed weather values and anomalies as follows:
 - “gdd” – monthly growing degree day (units=degrees F)
 - “gdd/gddanom” – monthly growing degree day anomaly (units=degrees F)
 - “pcp” – monthly precipitation (units=inches)
 - “pcpanom” – monthly precipitation anomaly (units=percent of normal)
 - “rh” – monthly relative humidity (units=percent)
 - “rhanom” – monthly relative humidity anomaly (units=percent)
 - “swrad” – monthly short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – monthly short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – monthly temperature (units=degrees F)
 - “tmpanom” – monthly temperature anomaly (units=degrees F)
 - “tmin” – monthly mean daily minimum temperature (units=degrees F)

- “tminanom” – monthly mean daily minimum temperature anomaly (units=degrees F)
- “tmax” – monthly mean daily maximum temperature (units=degrees F)
- “tmaxanom” – monthly mean daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – 5 monthly 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – 5 monthly 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 14 csv delimited columns
 - Statistical Area 2 ID, Year, and (12) values for each month of each year
- **Update Schedule**
 - Updated by 0815UTC each day during the growing season, with the previous month’s data available by the 3rd day of each month. Please note that because 7 days of the daily data is preliminary, the previous month’s values will also update several times during the first week of each new month.
 - Year-round updates

australia/wxforecast Directory – 2 Distinct File Formats

FORMAT 1: daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_australia_sa2_YYYYMMDD.csv

- **Description**
 - CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)

- “rh” – daily relative humidity (units=percent)
- “rhanom” – daily relative humidity anomaly (units=percent)
- “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
- “tmp” – daily temperature (units=degrees F)
- “tmpanom” – daily temperature anomaly (units=degrees F)
- “tmin” – daily minimum temperature (units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on which model is selected. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - Statistical area 2 ID, state, sa2 name, and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2:

weekly/YYYYMMDD/WXMODEL_WEATHERVAR_australia_sa2_init_YYYYMMDD_FCSTPERIOD.csv

- **Description**
 - CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system

- ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
- ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
- WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- FCSTPERIOD is either
 - week_1
 - week_2
 - weeks_1-2
 - week_3 (ecmwf_ext weather forecast only)
 - week_4 (ecmwf_ext weather forecast only)
 - week_5 (ecmwf_ext weather forecast only)
 - week_6 (ecmwf_ext weather forecast only)
 - weeks_3-4 (ecmwf_ext weather forecast only)
 - weeks_3-6 (ecmwf_ext weather forecast only)
 - weeks_5-6(ecmwf_ext weather forecast only)
- **File Content** – 2 csv delimited columns.
 - Statistical Area 2 ID, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

australia/abs Directory – 2 Distinct File Formats

FORMAT 1: CROP_abs_finalestimates_australia_sa2_2016_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Australia Statistical Area 2 (sa2) regions
- **Naming Scheme**
 - CROP is either barley, canola, cotton, oats, sorghum, or wheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 6 csv delimited columns
 - year, state, statistical area 2 ID, harvested acres in hectares, yield in metric tons per hectare, and production in metric tons
- **Update Schedule**
 - Once per year

FORMAT 2: CROP_abs_finalestimates_australia_sa4_2016_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Australia Statistical Area 4 (sa4) regions
- **Naming Scheme**
 - CROP is either barley, canola, cotton, oats, sorghum, or wheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 6 csv delimited columns
 - year, state, statistical area 4 ID, planted acres in hectares, harvested acres in hectares, yield in metric tons per hectare, and production in metric tons
- **Update Schedule**
 - Once per year

brazil/wxobs Directory – 2 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_brazil_microregion_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)

- “pcp” – daily precipitation (units=inches)
- “pcpanom” – daily precipitation anomaly (units=percent of normal)
- “rh” – daily relative humidity (units=percent)
- “rhanom” – daily relative humidity anomaly (units=percent)
- “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
- “tmp” – daily temperature (units=degrees F)
- “tmpanom” – daily temperature anomaly (units=degrees F)
- “tmin” – daily minimum temperature (units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” –daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 4 csv delimited columns with daily weather data for the current year
 - Date, microregion ID, microregion, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - Updated by 0800UTC each day during season, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

FORMAT 2: daily_history/WEATHERVAR_daily_brazil_microregion_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet history of daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis, the Climate Prediction Center (CPC) Morphing Technique (CMORPH), the Integrated Multi-satellite Retrievals for GPM (IMERG), and Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - STARTYEAR is the first year of data availability. For all variables except precipitation (pcp, pcpanom), the first year is 1981. For the precipitation variables the first year is 2000.

- ENDEAR is the last full year of data availability. Once updated near the beginning of the year, this is the prior year to the current date.
- WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 5 csv delimited columns with daily weather data for the current year
 - Year, date, microregion ID, microregion, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The full history including the prior year of data will be updated by January 15th of each year.

brazil/wxforecast Directory – 2 Distinct File Formats

FORMAT

1:

daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_brazil_microregion_YYYYMMDD.csv

- **Description**

- CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.

- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – PRISM daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on which model is selected. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - Microregion ID, state, microregion and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns

- **Update Schedule**

- The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2:

weekly/YYYYMMDD/WXMODEL_WEATHERVAR_brazil_microregion_init_YYYYMMDD_FCSTPERIOD.csv

- **Description**

- CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA's GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.

- **Naming Scheme**

- YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
- WXMODEL is either
 - gfs_00Z – NOAA's 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA's 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA's 00Z global ensemble forecast system
 - gefs_12Z – NOAA's 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF's 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF's 12Z ensemble prediction system
 - ecmwf_ext – ECMWF's Extended 45-day Ensemble Prediction System
- WEATHERVAR – daily forecasted weather data as follows:
 - "gdd" – daily growing degree day (units=degrees F)
 - "gdd/gddanom" – daily growing degree day anomaly (units=degrees F)
 - "pcp" – daily precipitation (units=inches)
 - "pcpanom" – daily precipitation anomaly (units=percent of normal)
 - "rh" – daily relative humidity (units=percent)
 - "rhanom" – daily relative humidity anomaly (units=percent)
 - "swrad" – daily short-wave radiation (solar) (units=watts per meter squared)
 - "swradanom" – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - "tmp" – daily temperature (units=degrees F)
 - "tmpanom" – daily temperature anomaly (units=degrees F)
 - "tmin" – daily minimum temperature (units=degrees F)
 - "tminanom" – daily minimum temperature anomaly (units=degrees F)

- “tmax” – PRISM daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- FCSTPERIOD is either
 - week_1
 - week_2
 - weeks_1-2
 - week_3 (ecmwf_ext weather forecast only)
 - week_4 (ecmwf_ext weather forecast only)
 - week_5 (ecmwf_ext weather forecast only)
 - week_6 (ecmwf_ext weather forecast only)
 - weeks_3-4 (ecmwf_ext weather forecast only)
 - weeks_3-6 (ecmwf_ext weather forecast only)
 - weeks_5-6(ecmwf_ext weather forecast only)
- **File Content** – 4 csv delimited columns.
 - Microregion ID, state, microregion, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

brazil/ibge Directory – 3 Distinct File Formats

FORMAT 1: CROP_ibge_finalestimates_brazil_microregion_STARTYEAR_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Brazil microregions
- **Naming Scheme**
 - CROP is either corn1stseason, corn1stseason, corntotal, or soybeans
 - STARTYEAR is the beginning year of data that is available, for total corn and soybeans it is 1990 and for 1st and 2nd season corn it is 2003
 - ENDYEAR is the last year of data that is available, typically two years prior
- **File Content** – 8 csv delimited columns
 - year, state name, microregion id, microregion, planted acres in hectares, harvested acres in hectares, yield in metric tons per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

FORMAT 2: CROP_ibge_finalestimates_brazil_state_STARTYEAR_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Brazil states

- **Naming Scheme**
 - CROP is either corn1stseason, corn1stseason, corntotal, or soybeans
 - STARTYEAR is the beginning year of data that is available, for total corn and soybeans it is 1974 and for 1st and 2nd season corn it is 2003
 - ENDYEAR is the last year of data that is available, typically two years prior
- **File Content** – 7 csv delimited columns
 - year, state id, state, planted acres in hectares, harvested acres in hectares, yield in metric tons per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

FORMAT 3: CROP_ibge_finalestimates_brazil_national_STARTYEAR_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Brazil
- **Naming Scheme**
 - CROP is either corn1stseason, corn1stseason, corntotal, or soybeans
 - STARTYEAR is the beginning year of data that is available, for corn and soybeans it is 1990 and for 1st and 2nd season corn it is 2003
 - ENDYEAR is the last year of data that is available, typically two years prior
- **File Content** – 6 csv delimited columns
 - year, country, planted acres in hectares, harvested acres in hectares, yield in metric tons per hectare, and production in metric tons
- **Update Schedule**
 - Once a year, usually in November.

canada/wxobs Directory – 3 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_canada_sad_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis and the Climate Prediction Center (CPC) Morphing Technique (CMORPH). The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)

- “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” –daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 3 csv delimited columns with daily weather data for the current year
 - Date, small area data (sad) ID, and daily weather value
 - Missing data is represented with no values in the csv columns
 - **Update Schedule**
 - Updated by 0800UTC each day during season, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

FORMAT 2: daily_history/WEATHERVAR_daily_canada_sad_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet history of daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis and the Climate Prediction Center (CPC) Morphing Technique (CMORPH). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - STARTYEAR is the first year of data availability. For all variables except precipitation (pcp, pcpanom), the first year is 1981. For the precipitation variables the first year is 2000.
 - ENDYEAR is the last full year of data availability. Once updated near the beginning of the year, this is the prior year to the current date.
 - WEATHERVAR is the daily observed weather or satellite data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)

- “pcpanom” – daily precipitation anomaly (units=percent of normal)
- “rh” – daily relative humidity (units=percent)
- “rhanom” – daily relative humidity anomaly (units=percent)
- “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
- “tmp” – daily temperature (units=degrees F)
- “tmpanom” – daily temperature anomaly (units=degrees F)
- “tmin” – daily minimum temperature (units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” –daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” –daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 4 csv delimited columns with daily weather data for the current year
 - Year, date, small area data ID, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The full history including the prior year of data will be updated by January 15th of each year.

FORMAT 3: monthly/WEATHERVAR_canada_sad_STARTYEAR_ENDYEAR.csv

- **Description**
 - CropProphet monthly updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis and the Climate Prediction Center (CPC) Morphing Technique (CMORPH). For the anomaly variables, the climatology period is 1981 to the previous year but the precipitation variables use the period 2000 to the previous year.
- **Naming Scheme**
 - ENDYEAR is the last year that data is available, typically the current year.
 - WEATHERVAR is the observed weather values and anomalies as follows:
 - “gdd” –monthly growing degree day (units=degrees F)
 - “gdd/gddanom” –monthly growing degree day anomaly (units=degrees F)
 - “pcp” –monthly precipitation (units=inches)
 - “pcpanom” – monthly precipitation anomaly (units=percent of normal)

- “rh” – monthly relative humidity
(units=percent)
- “rhanom” – monthly relative humidity anomaly
(units=percent)
- “swrad” – monthly short-wave radiation (solar)
(units=watts per meter squared)
- “swradanom” – monthly short-wave radiation (solar) anomaly
(units=standard deviation)
- “tmp” – monthly temperature
(units=degrees F)
- “tmpanom” – monthly temperature anomaly
(units=degrees F)
- “tmin” – monthly mean daily minimum temperature
(units=degrees F)
- “tminanom” – monthly mean daily minimum temperature anomaly
(units=degrees F)
- “tmax” – monthly mean daily maximum temperature
(units=degrees F)
- “tmaxanom” – monthly mean daily maximum temperature anomaly
(units=degrees F)
- “soilm7_28” – monthly 7-28cm soil moisture
(units=fraction)
- “soilm7_28anom” – monthly 7-28cm soil moisture anomaly
(units=standard deviation)
- **File Content** – 14 csv delimited columns
 - Small Area Data ID, Year, and (12) values for each month of each year
- **Update Schedule**
 - Updated by 0815UTC each day during the growing season, with the previous month’s data available by the 3rd day of each month. Please note that because 7 days of the daily data is preliminary, the previous month’s values will also update several times during the first week of each new month.
 - Year-round updates

canada/wxforecast Directory – 2 Distinct File Formats

FORMAT 1: daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_canada_sad_YYYYMMDD.csv

- **Description**
 - CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)

- gefs_00Z – NOAA’s 00Z global ensemble forecast system
- gefs_12Z – NOAA’s 12Z global ensemble forecast system
- ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
- ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
- ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
- WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – daily maximum temperature (units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on which model is selected. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - Small Area Data ID, state, sad name, and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2:

weekly/YYYYMMDD/WXMODEL_WEATHERVAR_canada_sad_init_YYYYMMDD_FCSTPERIOD.csv

- **Description**
 - CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA's GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA's 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA's 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA's 00Z global ensemble forecast system
 - gefs_12Z – NOAA's 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF's 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF's 12Z ensemble prediction system
 - ecmwf_ext – ECMWF's Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - "gdd" – daily growing degree day (units=degrees F)
 - "gdd/gddanom" – daily growing degree day anomaly (units=degrees F)
 - "pcp" – daily precipitation (units=inches)
 - "pcpanom" – daily precipitation anomaly (units=percent of normal)
 - "rh" – daily relative humidity (units=percent)
 - "rhanom" – daily relative humidity anomaly (units=percent)
 - "swrad" – daily short-wave radiation (solar) (units=watts per meter squared)
 - "swradanom" – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - "tmp" – daily temperature (units=degrees F)
 - "tmpanom" – daily temperature anomaly (units=degrees F)
 - "tmin" – daily minimum temperature (units=degrees F)
 - "tminanom" – daily minimum temperature anomaly (units=degrees F)
 - "tmax" – PRISM daily maximum temperature (units=degrees F)
 - "tmaxanom" – daily maximum temperature anomaly (units=degrees F)
 - "soilm7_28" – daily 7-28cm soil moisture (units=fraction)
 - "soilm7_28anom" – daily 7-28cm soil moisture anomaly (units=standard deviation)
 - FCSTPERIOD is either
 - week_1

- week_2
- weeks_1-2
- week_3 (ecmwf_ext weather forecast only)
- week_4 (ecmwf_ext weather forecast only)
- week_5 (ecmwf_ext weather forecast only)
- week_6 (ecmwf_ext weather forecast only)
- weeks_3-4 (ecmwf_ext weather forecast only)
- weeks_3-6 (ecmwf_ext weather forecast only)
- weeks_5-6(ecmwf_ext weather forecast only)
- **File Content** – 2 csv delimited columns.
 - Small Area Data 2 ID, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

canada/statcan Directory – 3 Distinct File Formats

FORMAT 1: CROP_statcan_finalestimates_canada_sad_2017_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Canada small area data (SAD) regions
- **Naming Scheme**
 - CROP is either barley, canola, corn, oats, soybeans, springwheat, winterwheat, or allwheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 9 csv delimited columns
 - year, province, sad_region, small area data ID, planted acres, harvested acres, yield in bushels/acre, and production in bushels
- **Update Schedule**
 - Once per year

FORMAT 2: CROP_statcan_finalestimates_canada_province_2017_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Canada provinces
- **Naming Scheme**
 - CROP is either barley, canola, corn, oats, soybeans, springwheat, winterwheat, or allwheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 6 csv delimited columns
 - year, province, planted acres, harvested acres, yield in bushels/acre, and production in bushels
- **Update Schedule**
 - Once per year

FORMAT 3: CROP_statcan_finalestimates_canada_national_2017_ENDYEAR.csv

- **Description**

- Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for Canada
- **Naming Scheme**
 - CROP is either barley, canola, corn, oats, soybeans, springwheat, winterwheat, or allwheat
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 6 csv delimited columns
 - year, geographic level, planted acres, harvested acres, yield in bushels/acre, and production in bushels
- **Update Schedule**
 - Once per year

europa/wxobs Directory – 1 Distinct File Formats

FORMAT 1: daily/WEATHERVAR_daily_europe_nuts3_YYYY.csv

- **Description**
 - CropProphet daily updating observational weather data from the European Centre for Medium Range Weather Forecasts ERA5 Reanalysis and the Climate Prediction Center (CPC) Morphing Technique (CMORPH). The data updates each day and includes all the values year-to-date.
- **Naming Scheme**
 - YYYY is the current year
 - WEATHERVAR is the daily observed weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)
 - “swrad” – daily short-wave radiation (solar) (units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly (units=standard deviation)
 - “tmp” – daily temperature (units=degrees F)
 - “tmpanom” – daily temperature anomaly (units=degrees F)
 - “tmin” – daily minimum temperature (units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)

- “tmax” – daily maximum temperature (units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture (units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly (units=standard deviation)
- **File Content** – 3 csv delimited columns with daily weather data for the current year
 - Date, NUTS 3 ID, and daily weather value
 - Missing data is represented with no values in the csv columns
- **Update Schedule**
 - Updated by 0800UTC each day, with data available within 2 days of real-time. Please note that up to 7 days of the daily data is preliminary and will be revised as the source datasets are updated.
 - Year-round updates

europa/wxforecast Directory – 2 Distinct File Formats

FORMAT 1: daily/YYYYMMDD/WXMODEL_WEATHERVAR_daily_europe_nuts3_YYYYMMDD.csv

- **Description**
 - CropProphet daily updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:
 - “gdd” – daily growing degree day (units=degrees F)
 - “gdd/gddanom” – daily growing degree day anomaly (units=degrees F)
 - “pcp” – daily precipitation (units=inches)
 - “pcpanom” – daily precipitation anomaly (units=percent of normal)
 - “rh” – daily relative humidity (units=percent)
 - “rhanom” – daily relative humidity anomaly (units=percent)

- “swrad” – daily short-wave radiation (solar)
(units=watts per meter squared)
 - “swradanom” – daily short-wave radiation (solar) anomaly
(units=standard deviation)
 - “tmp” – daily temperature
(units=degrees F)
 - “tmpanom” – daily temperature anomaly
(units=degrees F)
 - “tmin” – daily minimum temperature
(units=degrees F)
 - “tminanom” – daily minimum temperature anomaly (units=degrees F)
 - “tmax” – PRISM daily maximum temperature
(units=degrees F)
 - “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
 - “soilm7_28” – daily 7-28cm soil moisture
(units=fraction)
 - “soilm7_28anom” – daily 7-28cm soil moisture anomaly
(units=standard deviation)
- **File Content** – Variable with up to 48 csv delimited columns depending on which model is selected. The gfs, gefs, and ecmwf model files each have 18 columns of data. The ecmwf_ext model file will have 48 columns of data. The columns are:
 - NUTS 3 ID, country, NUTS 3 region name, and up to (45) values for each day of the 15 or 45 forecast
 - Missing data is represented with no values in the csv columns
 - **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

FORMAT 2:

weekly/YYYYMMDD/WXMODEL_WEATHERVAR_europe_nuts3_init_YYYYMMDD_FCSTPERIOD.csv

- **Description**
 - CropProphet weekly updating 15- and 45-day weather forecasts derived from NOAA’s GFS and the European Centre for Medium Range Weather Forecasts Ensemble Prediction System. For the anomaly variables, the monthly climatology period is 1981 to the previous year.
- **Naming Scheme**
 - YYYYMMDD is the initialization date of the weather forecast model used to create the forecast. There will be one update per cycle per day.
 - WXMODEL is either
 - gfs_00Z – NOAA’s 00Z global forecast system (deterministic)
 - gfs_12Z – NOAA’s 12Z global forecast system (deterministic)
 - gefs_00Z – NOAA’s 00Z global ensemble forecast system
 - gefs_12Z – NOAA’s 12Z global ensemble forecast system
 - ecmwf_00Z – ECMWF’s 00Z ensemble prediction system
 - ecmwf_12Z – ECMWF’s 12Z ensemble prediction system
 - ecmwf_ext – ECMWF’s Extended 45-day Ensemble Prediction System
 - WEATHERVAR – daily forecasted weather data as follows:

- “gdd” – daily growing degree day
(units=degrees F)
- “gdd/gddanom” – daily growing degree day anomaly
(units=degrees F)
- “pcp” – daily precipitation
(units=inches)
- “pcpanom” – daily precipitation anomaly
(units=percent of normal)
- “rh” – daily relative humidity
(units=percent)
- “rhanom” – daily relative humidity anomaly
(units=percent)
- “swrad” – daily short-wave radiation (solar)
(units=watts per meter squared)
- “swradanom” – daily short-wave radiation (solar) anomaly
(units=standard deviation)
- “tmp” – daily temperature
(units=degrees F)
- “tmpanom” – daily temperature anomaly
(units=degrees F)
- “tmin” – daily minimum temperature
(units=degrees F)
- “tminanom” – daily minimum temperature anomaly (units=degrees F)
- “tmax” – PRISM daily maximum temperature
(units=degrees F)
- “tmaxanom” – daily maximum temperature anomaly (units=degrees F)
- “soilm7_28” – daily 7-28cm soil moisture
(units=fraction)
- “soilm7_28anom” – daily 7-28cm soil moisture anomaly
(units=standard deviation)
- FCSTPERIOD is either
 - week_1
 - week_2
 - weeks_1-2
 - week_3 (ecmwf_ext weather forecast only)
 - week_4 (ecmwf_ext weather forecast only)
 - week_5 (ecmwf_ext weather forecast only)
 - week_6 (ecmwf_ext weather forecast only)
 - weeks_3-4 (ecmwf_ext weather forecast only)
 - weeks_3-6 (ecmwf_ext weather forecast only)
 - weeks_5-6(ecmwf_ext weather forecast only)
- **File Content** – 4 csv delimited columns.
 - NUTS 3 ID, country, NUTS3 name, weekly forecast value
- **Update Schedule**
 - The weather forecast data is updated as soon as the model data arrives and is processed, which varies by model and initialization time

Europe/eurostat Directory – 1 Distinct File Format

FORMAT 1: CROP_eurostat_finalestimates_europe_NUTSREGION_2000_ENDYEAR.csv

- **Description**
 - Annual history of end-of-season final estimates of yield, production, planted acres, and harvested acres for NUTSS regions in Europe
- **Naming Scheme**
 - CROP is either corn, oats, rye, soybeans, springbarley, springwheat, sunflower, winterbarley, winterrapeseed, or winterwheat
 - NUTSREGION is either nuts0, nuts1, or nuts2
 - ENDYEAR is the last year of data that is available, typically the prior year
- **File Content** – 7 csv delimited columns
 - year, nutslevel, nuts ID, NUTS name, planted acres in 1000 hectare, yield in metric tons per hectare, production in 1000 metric tons
- **Update Schedule**
 - Once per year