In [103…
```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from collections import Counter
```

In [160…
```
import string

#defining stop word and punctuation function

# Basic list of stop words. Consider expanding this list based on your needs.
stop_words = set([
    "i", "me", "my", "myself", "we", "our", "ours", "ourselves", "you", "your",
    "yours", "yourself", "yourselves", "he", "him", "his", "himself", "she",
    "her", "hers", "herself", "it", "its", "itself", "they", "them", "their",
    "theirs", "themselves", "what", "which", "who", "whom", "this", "that",
    "these", "those", "am", "is", "are", "was", "were", "be", "been", "being",
    "have", "has", "had", "having", "do", "does", "did", "doing", "a", "an",
    "the", "and", "but", "if", "or", "because", "as", "until", "while", "of",
    "at", "by", "for", "with", "about", "against", "between", "into", "through",
    "during", "before", "after", "above", "below", "to", "from", "up", "down",
    "in", "out", "on", "off", "over", "under", "again", "further", "then",
    "once", "here", "there", "when", "where", "why", "how", "all", "any",
    "both", "each", "few", "more", "most", "other", "some", "such", "no",
    "nor", "not", "only", "own", "same", "so", "than", "too", "very", "s", "t",
    "can", "will", "just", "don", "should", "now", "and", "And", "1", "i'm",
    "im", "us", "-", "said", "also", "it's", "it' s", "it’s", "don’t", "le"
])

# Function to remove punctuation
def remove_punctuation(text):
    return text.translate(str.maketrans('', '', string.punctuation))

# Function to remove stop words
def remove_stop_words(words):
    return [word for word in words if word not in stop_words]
```

In [146…
```
filename = 'all neutral files.txt'
f = open(filename,encoding = "utf-8")
data = f.read()
datalower = data.lower()
```

In [148…
```
# removing punctuation and stop words

text_no_punctuation = remove_punctuation(datalower)
words = text_no_punctuation.split()
words_no_stop_words = remove_stop_words(words)
```

In [150…
```
import nltk
nltk.download('wordnet')
```

```
[nltk_data] Downloading package wordnet to
[nltk_data]     C:\Users\elvie\AppData\Roaming\nltk_data...
[nltk_data]   Package wordnet is already up-to-date!
```

Out[150… True

In [151…
```
from nltk.stem import WordNetLemmatizer

# Create an instance of WordNetLemmatizer
lemmatizer = WordNetLemmatizer()
```

In [152…
```
# Lemmatizing words
lemmatized_words = [lemmatizer.lemmatize(word) for word in words_no_stop_words]

nltk.download('wordnet')

def lemmatize_word(word):
    lemmatizer = WordNetLemmatizer()
    return lemmatizer.lemmatize(word)

def replace_farm_words(words):
    replacements = {"farming": "farm", "farmer": "farm", "farms": "farm", "farme
    return [replacements.get(lemmatize_word(word), word) for word in words]

# Example list of words
word_list = lemmatized_words

# Replace farm-related words
modified_list = replace_farm_words(word_list)
```

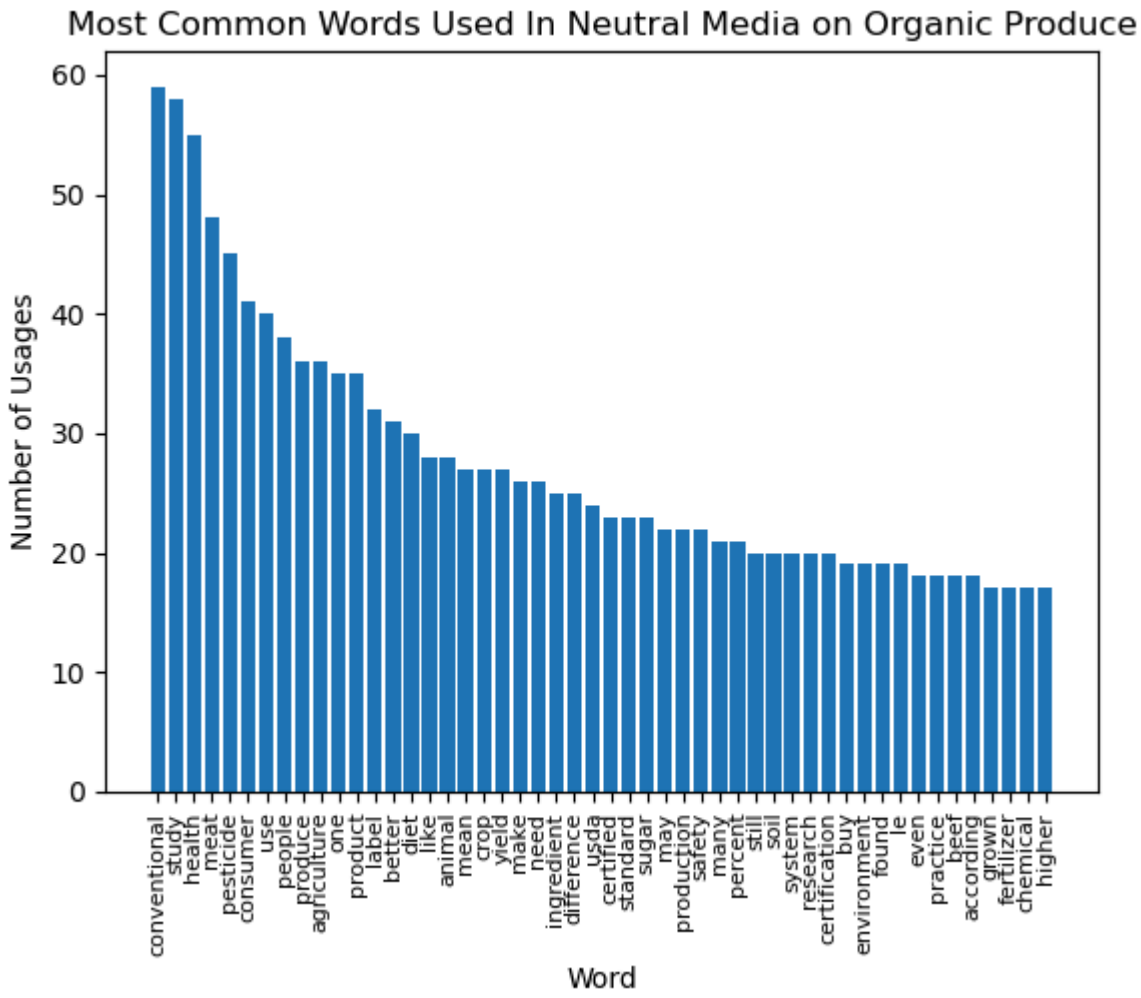
```
[nltk_data] Downloading package wordnet to
[nltk_data]     C:\Users\elvie\AppData\Roaming\nltk_data...
[nltk_data]   Package wordnet is already up-to-date!
```

In [154…
```
#creating word frequency count
words_count = Counter()
for word in modified_list:
    words_count.update({word,1})
```

In [161…
```
most_common_words = words_count.most_common(55)
```

In [158…
```
x, y = zip(*most_common_words)
```

In [159…
```
#Plotting from the 4th top words onwards, to remove the disproportionately over-
plt.bar(x[4:],y[4:])
plt.xticks(rotation=90, fontsize=8)
plt.xlabel('Word')
plt.ylabel('Number of Usages')
plt.title('Most Common Words Used In Neutral Media on Organic Produce')
plt.show()
```


Most Common Words Used In Neutral Media on Organic Produce
Number of Usages
0
10
20
30
40
50
60
Word
conventional
study
health
meat
pesticide
consumer
use
people
produce
agriculture
one
product
label
better
diet
like
animal
mean
crop
yield
make
need
ingredient
difference
usda
certified
standard
sugar
may
production
safety
many
percent
still
soil
system
research
certification
buy
environment
found
le
even
practice
beef
according
grown
fertilizer
chemical
higher

In [ ]:

In [ ]: