In [3]:
```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from collections import Counter
```

In [4]:
```
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
])

# 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 [5]:
```
filename = 'all negative files.txt'
f = open(filename,encoding = "utf-8")
data = f.read()
datalower = data.lower()
```

In [7]:
```
# 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 [8]:
```
words_count = Counter()
for word in words_no_stop_words:
    words_count.update({word,1})
```

In [9]:
```
#print(words_no_stop_words)
```

In [10]:
```
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[10]:  True
```

In [11]:
```
from nltk.stem import WordNetLemmatizer

# Create an instance of WordNetLemmatizer
lemmatizer = WordNetLemmatizer()

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

In [12]:
```
from nltk.stem import WordNetLemmatizer

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)
```

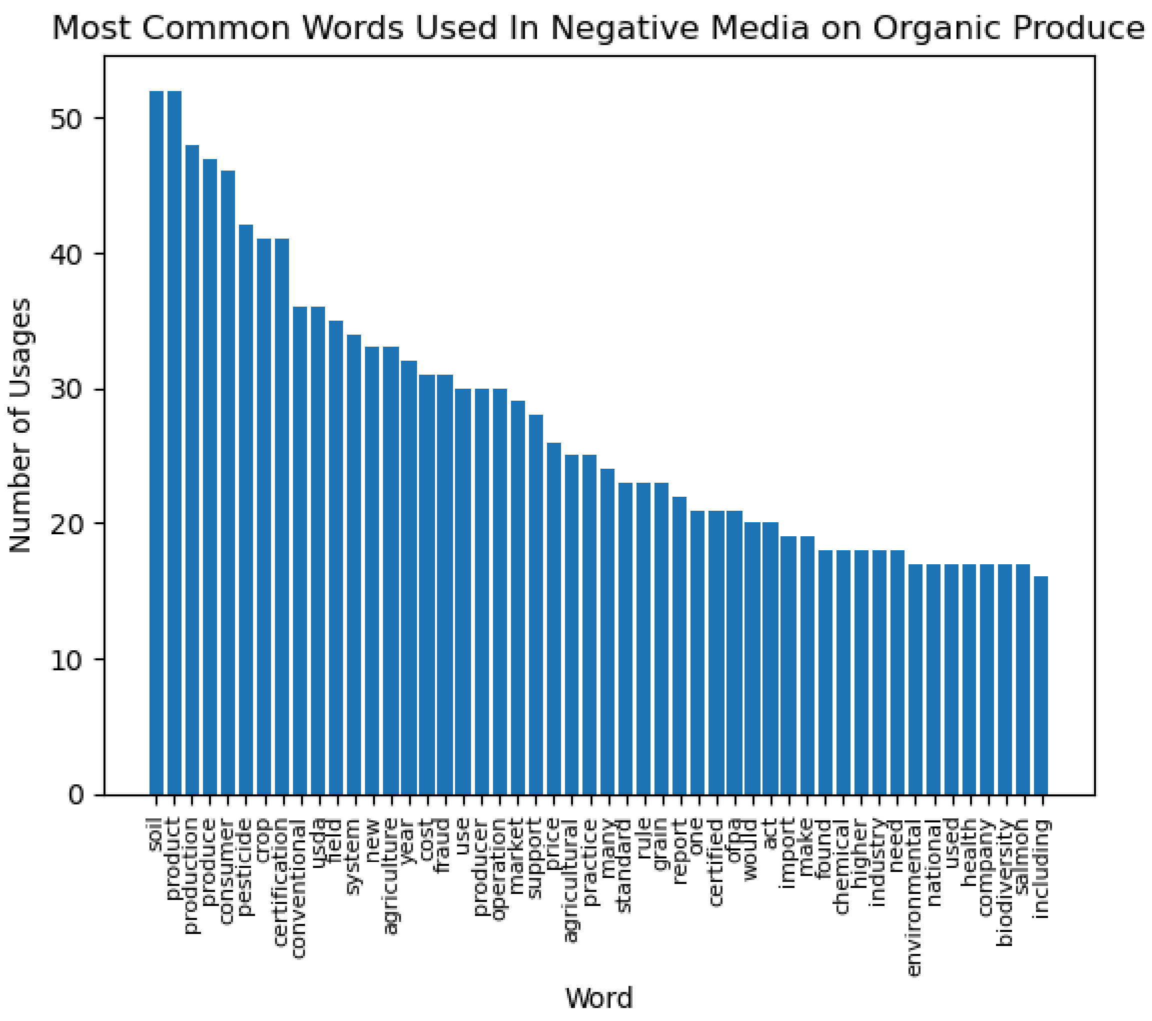
```
[nltk_data] Downloading package wordnet to
[nltk_data]     C:\Users\elvie\AppData\Roaming\nltk_data...
[nltk_data]   Package wordnet is already up-to-date!
```

In [13]:
```
#creating word frequency count
words_count = Counter()
for word in modified_list:
    words_count.update({word,1})
```

In [18]:
```
most_common_words = words_count.most_common(55)
```

In [19]:
```
x, y = zip(*most_common_words)
```

In [20]:
```
#Plotting from the 4th top words onwards, to remove the disproportionately over-
plt.bar(x[5:],y[5:])
plt.xticks(rotation=90, fontsize=8)
plt.xlabel('Word')
plt.ylabel('Number of Usages')
plt.title('Most Common Words Used In Negative Media on Organic Produce')
plt.show()
```


Most Common Words Used In Negative Media on Organic Produce
Number of Usages
Word
0
10
20
30
40
50
soil
product
production
produce
consumer
pesticide
crop
certification
conventional
usda
field
system
new
agriculture
year
cost
fraud
use
producer
operation
market
support
price
agricultural
practice
many
standard
rule
grain
report
one
certified
ofpa
would
act
import
make
found
chemical
higher
industry
need
environmental
national
used
health
company
biodiversity
salmon
including

```
In [ ]:
```