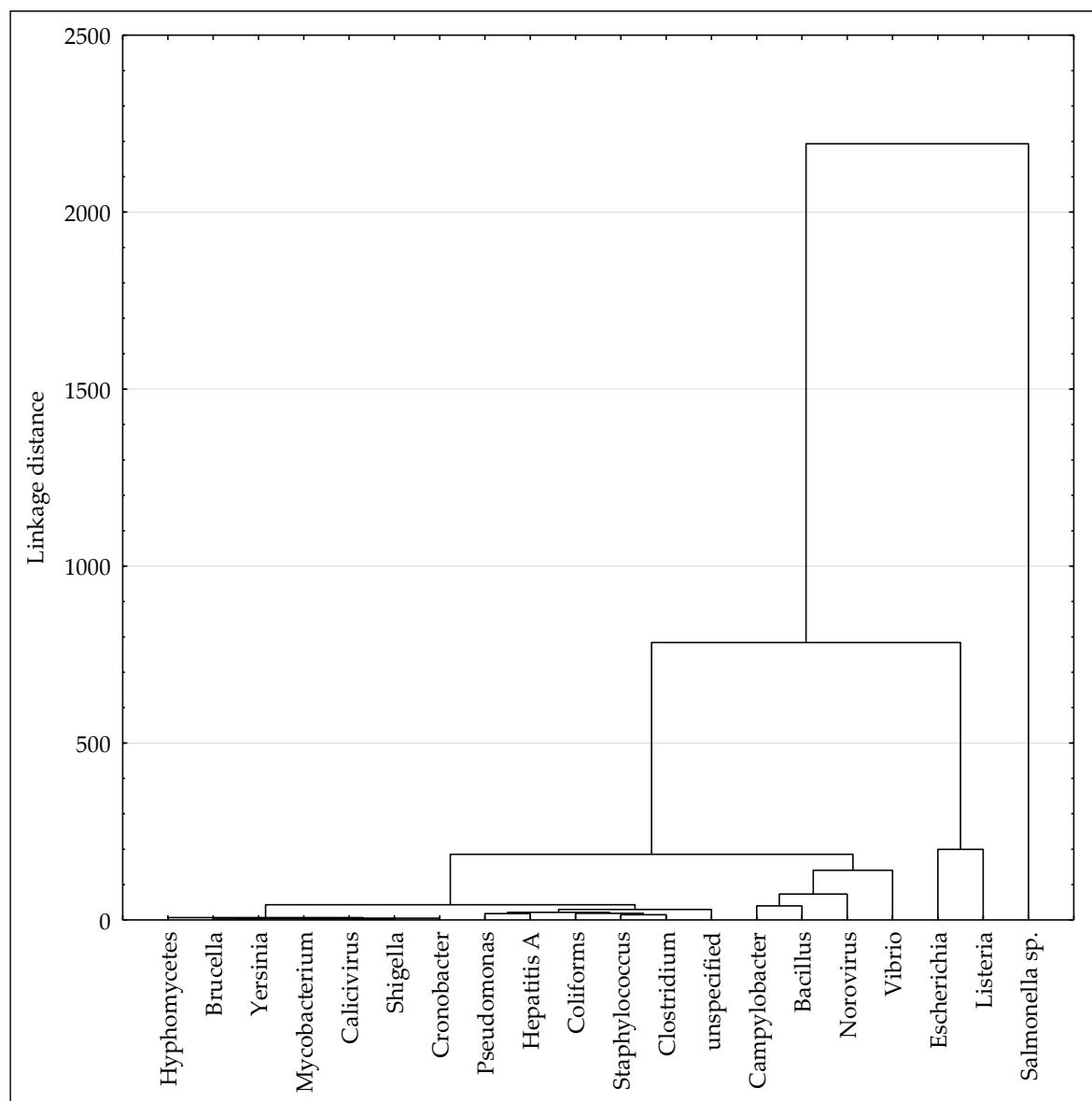
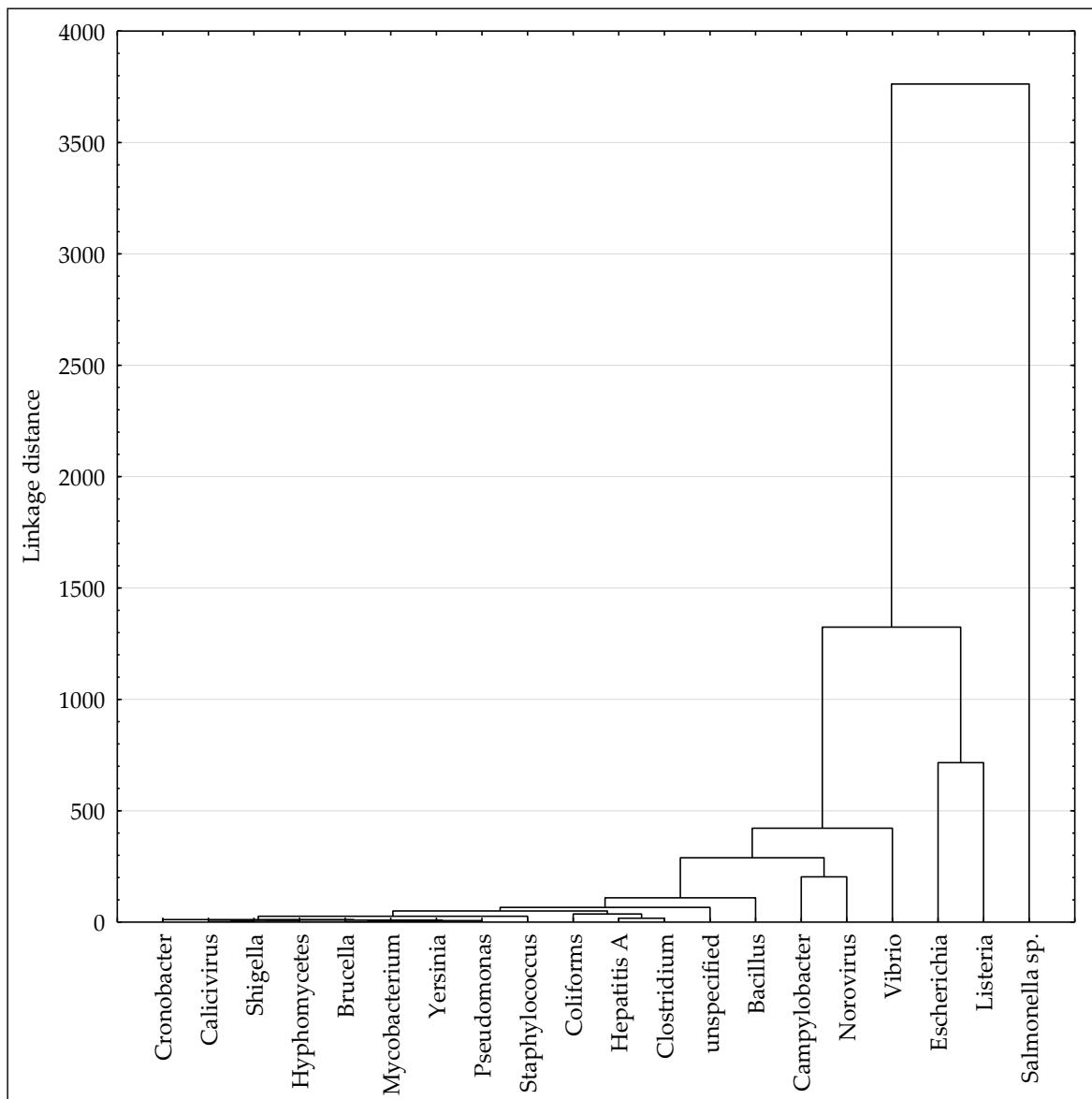


# Supplementary Materials: Pathogenic and non-pathogenic microorganisms in the Rapid Alert System for Food and Feed (pathogenic microorganisms)

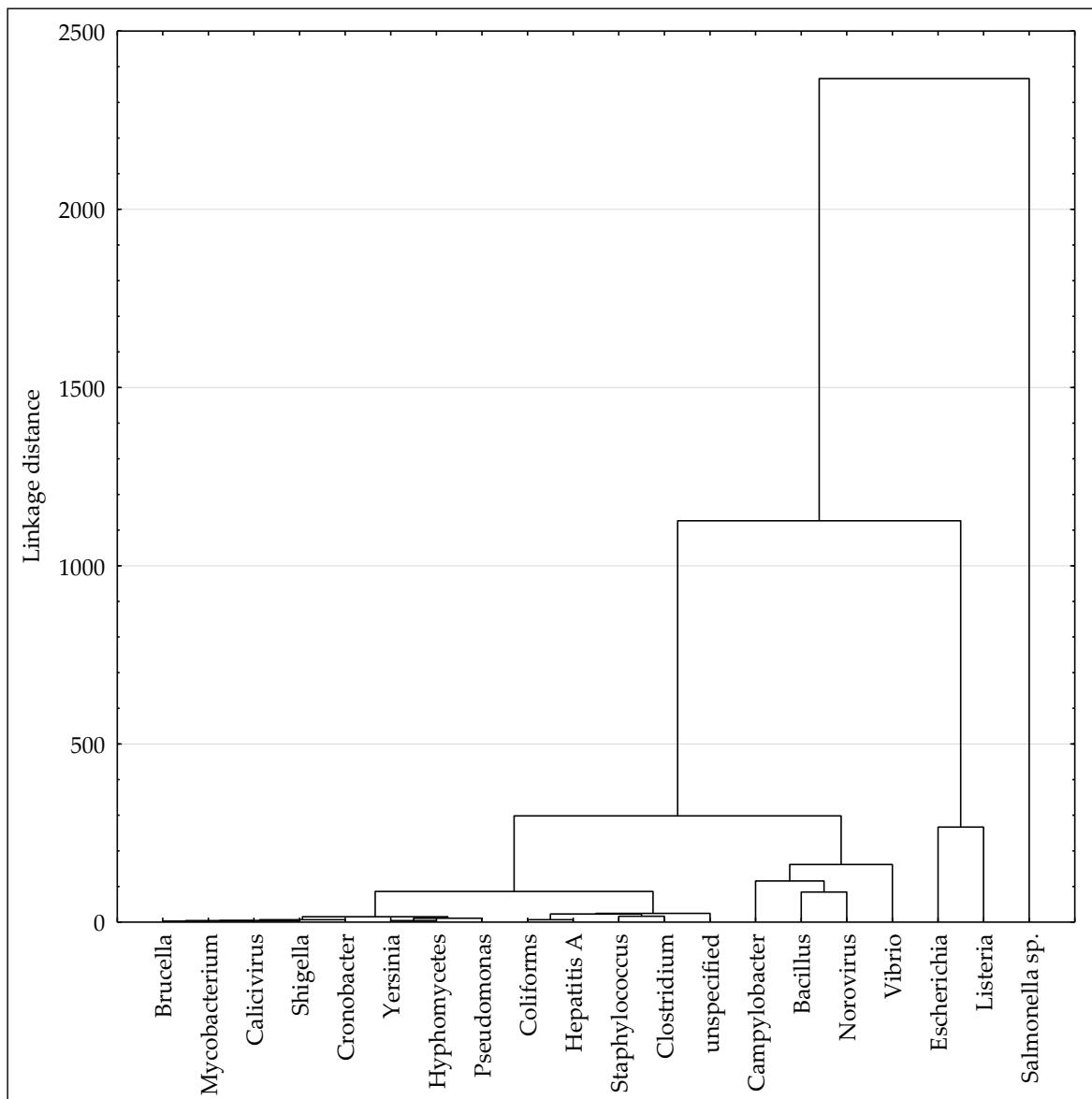
Marcin Piętowski



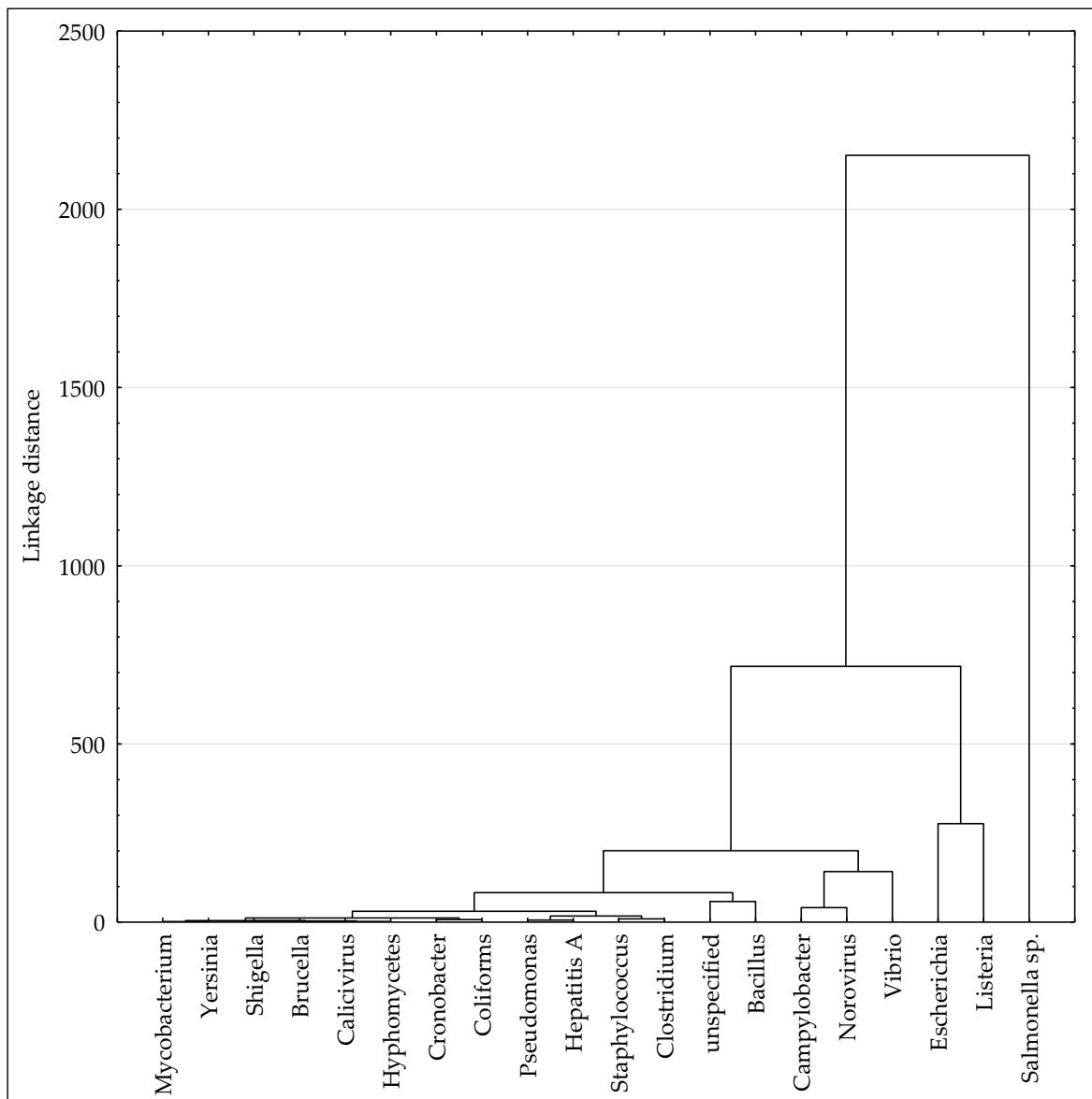
**Figure S1.** Similarities of RASFF notifications on pathogenic microorganisms and year within food using joining.



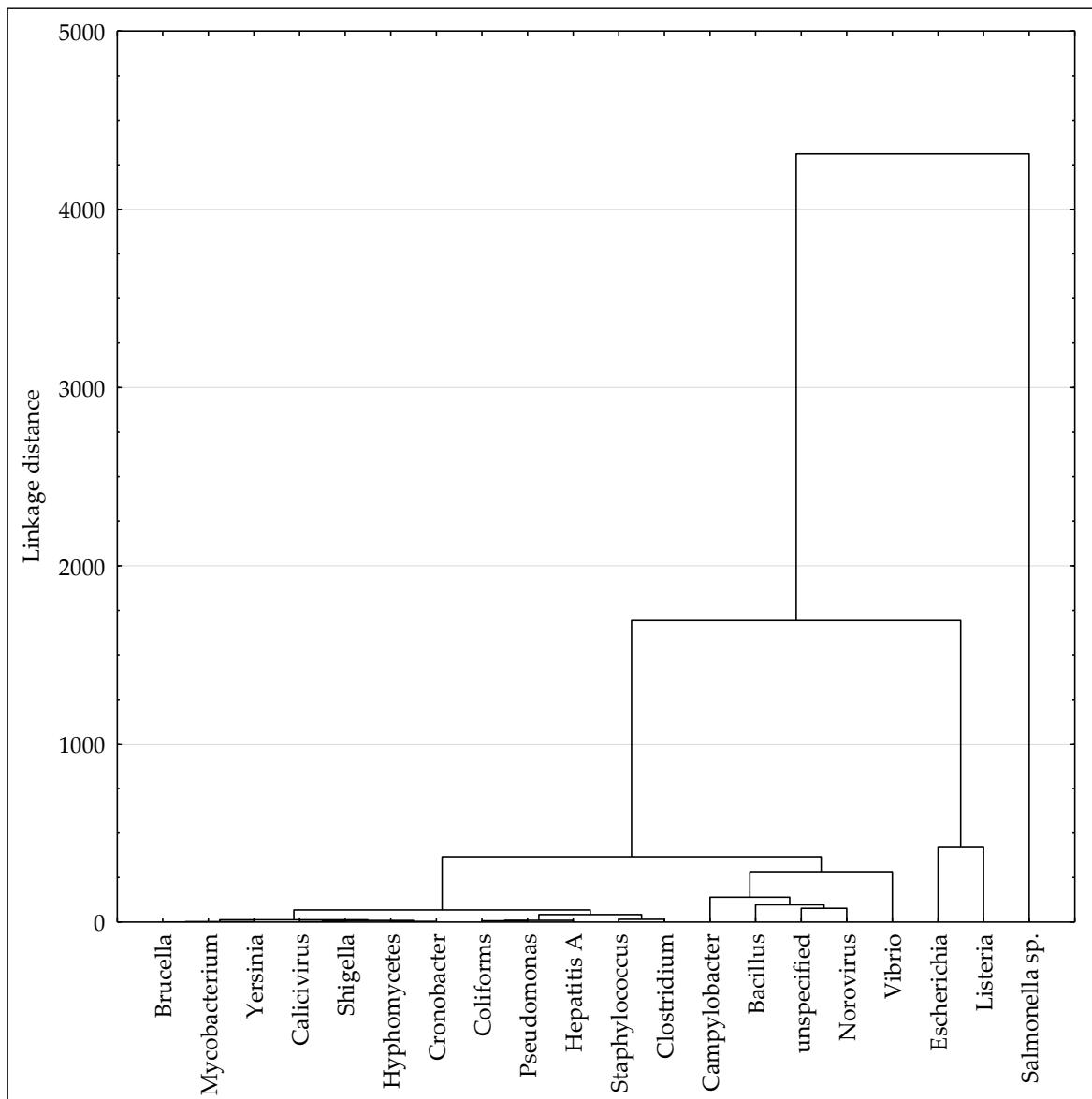
**Figure S2.** Similarities of RASFF notifications on pathogenic microorganisms and product category within food using joining.



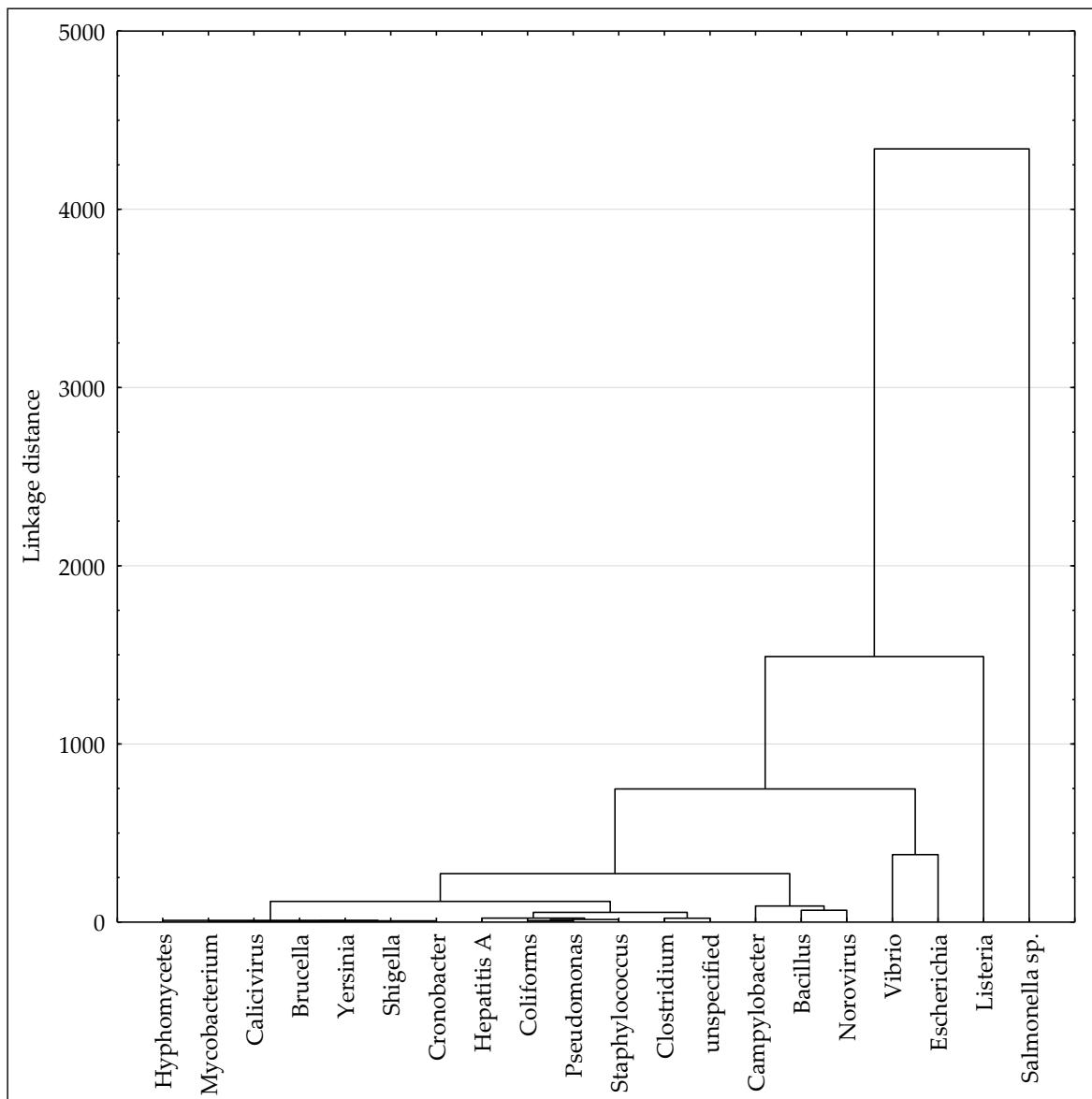
**Figure S3.** Similarities of RASFF notifications on pathogenic microorganisms and notifying country within food using joining.



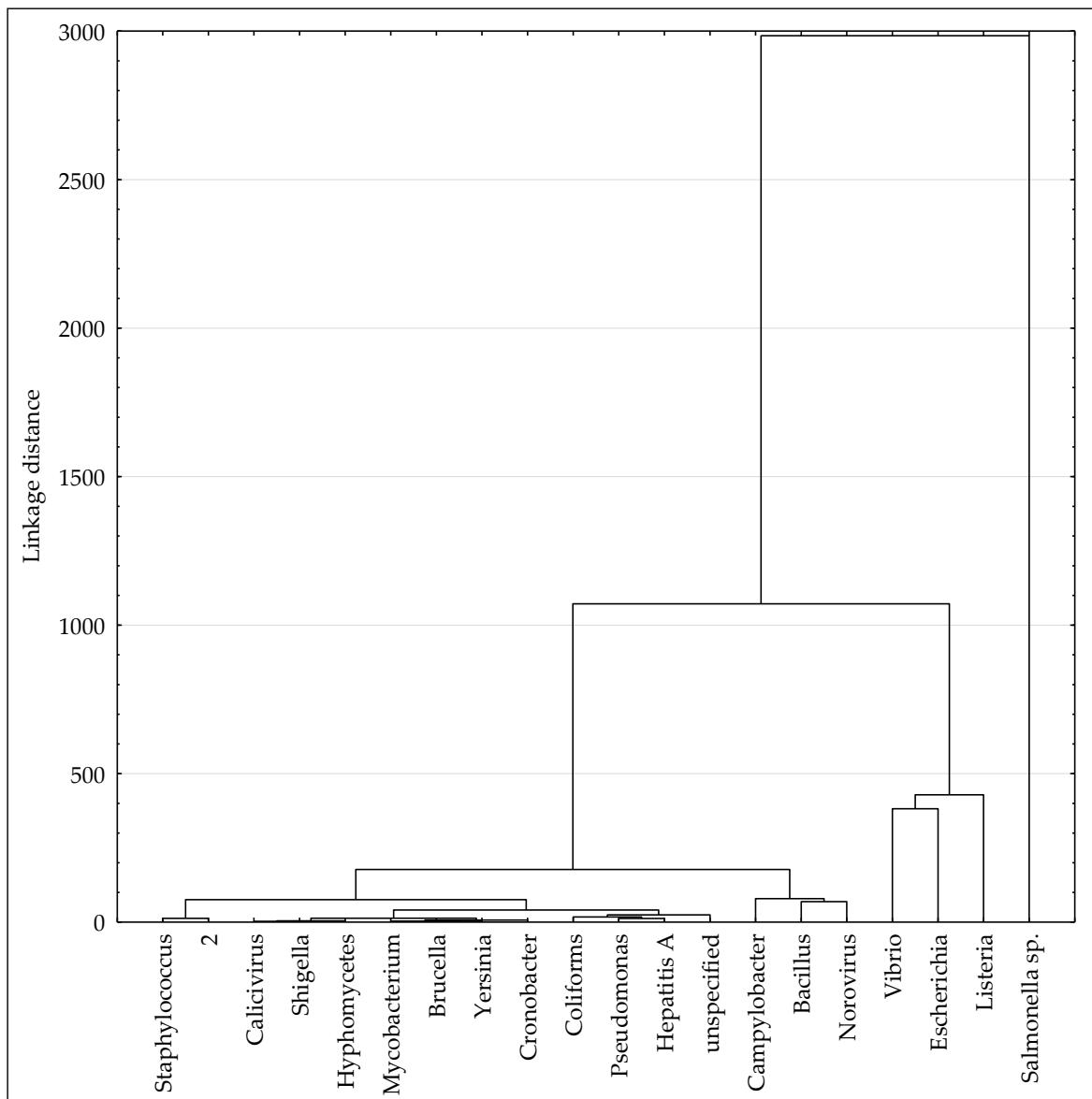
**Figure S4.** Similarities of RASFF notifications on pathogenic microorganisms and origin country within food using joining.



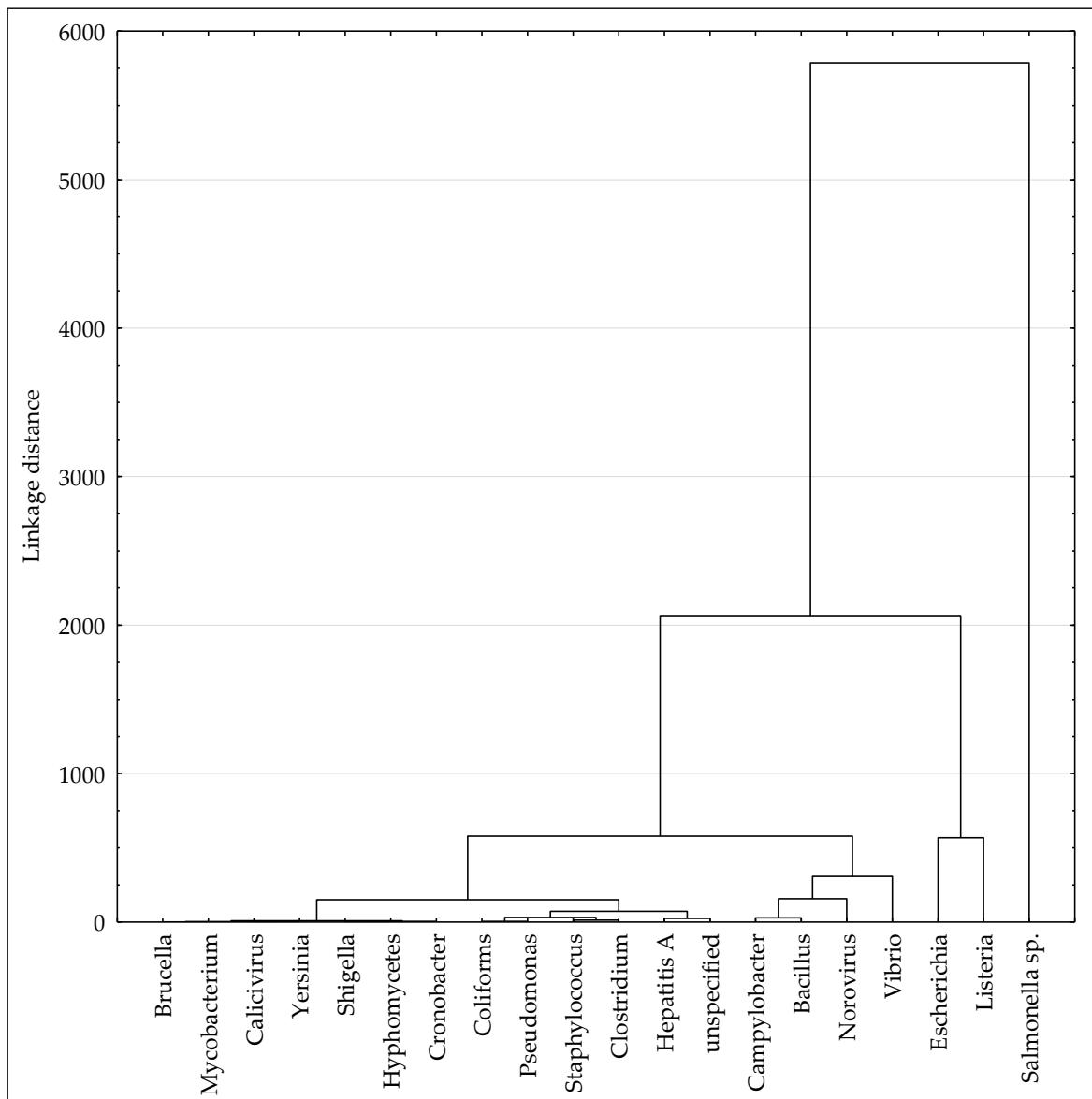
**Figure S5.** Similarities of RASFF notifications on pathogenic microorganisms and notification basis within food using joining.



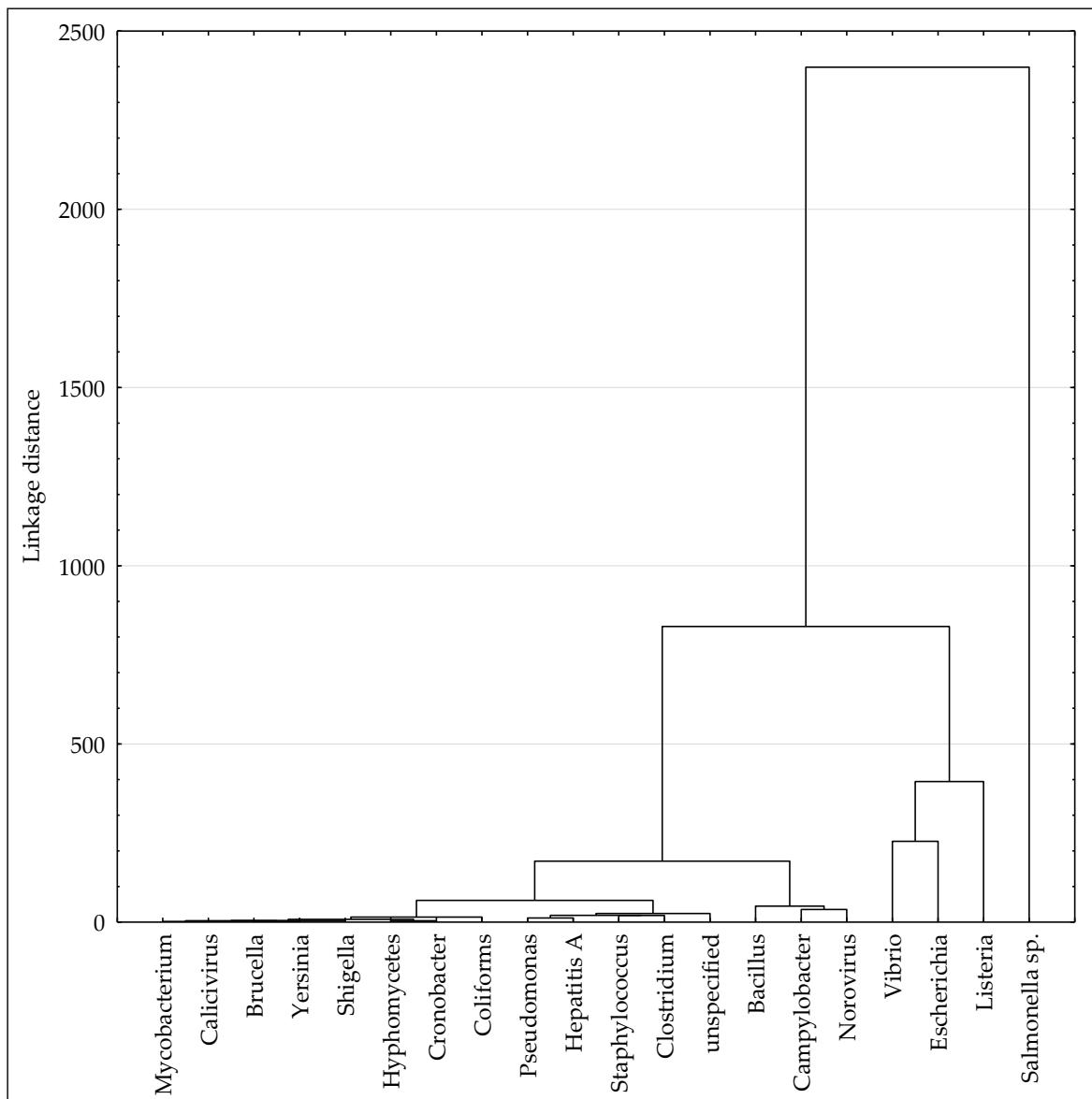
**Figure S6.** Similarities of RASFF notifications on pathogenic microorganisms and notification type within food using joining.



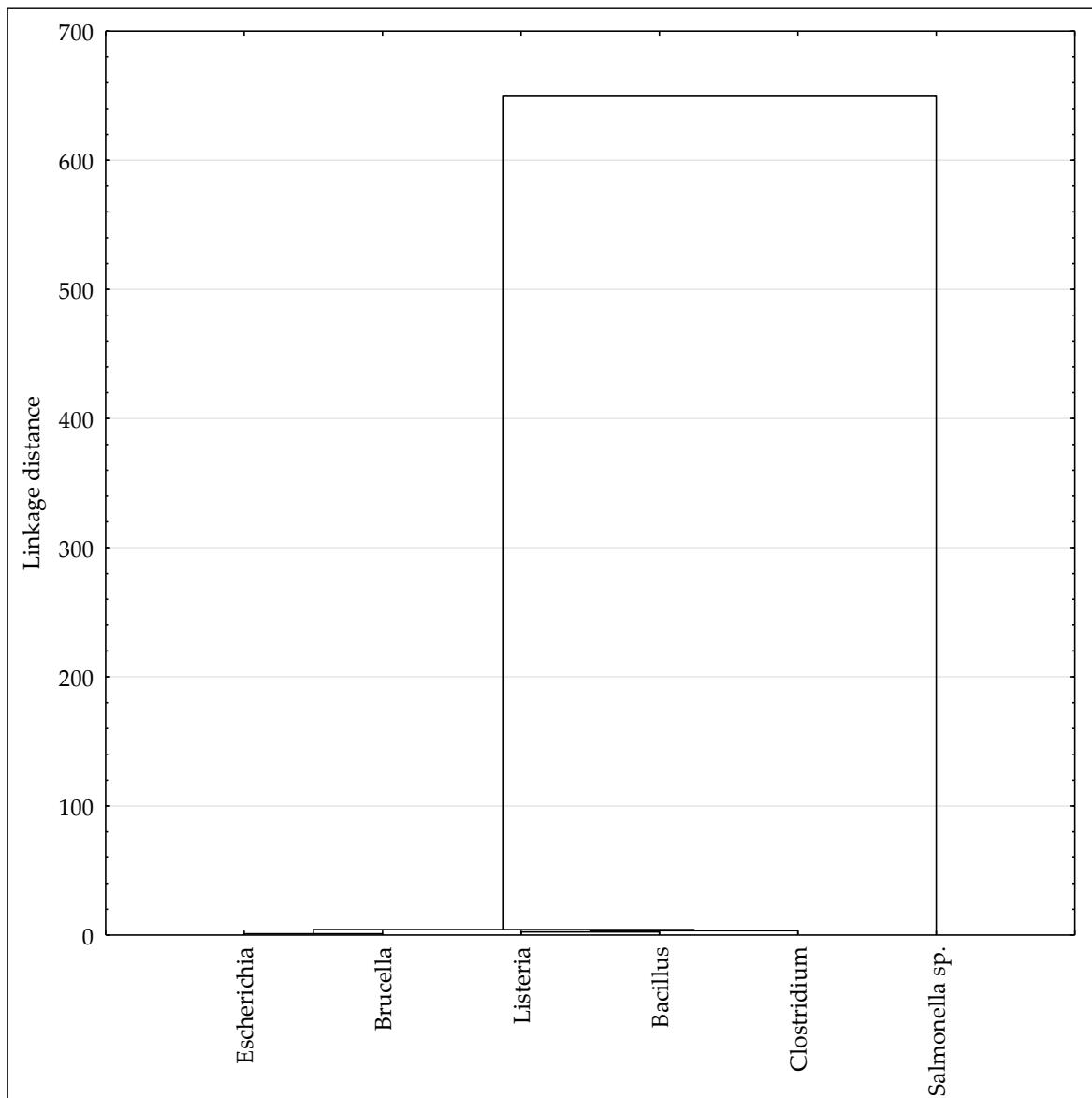
**Figure S7.** Similarities of RASFF notifications on pathogenic microorganisms and distribution status within food using joining.



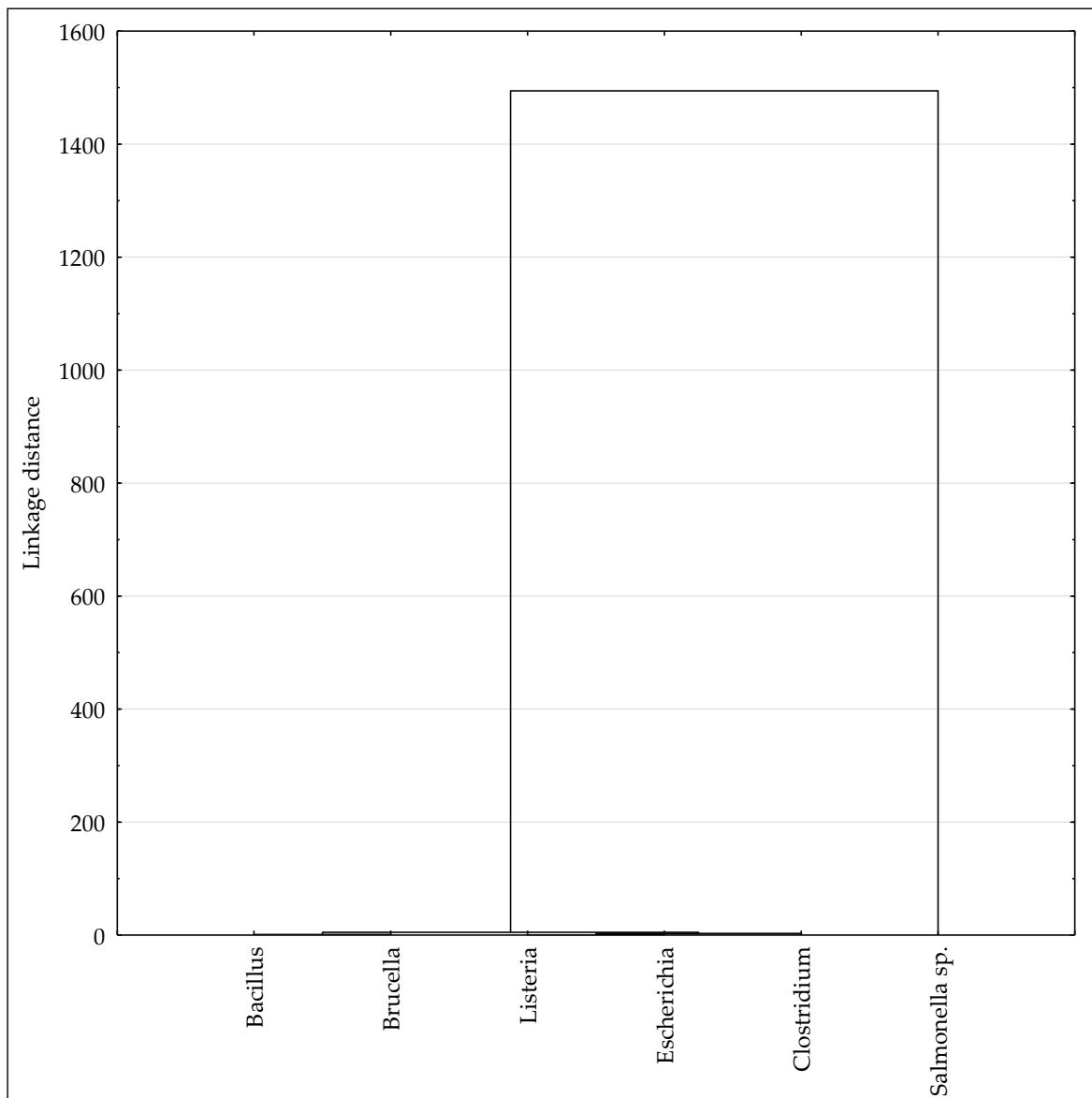
**Figure S8.** Similarities of RASFF notifications on pathogenic microorganisms and risk decision within food using joining.



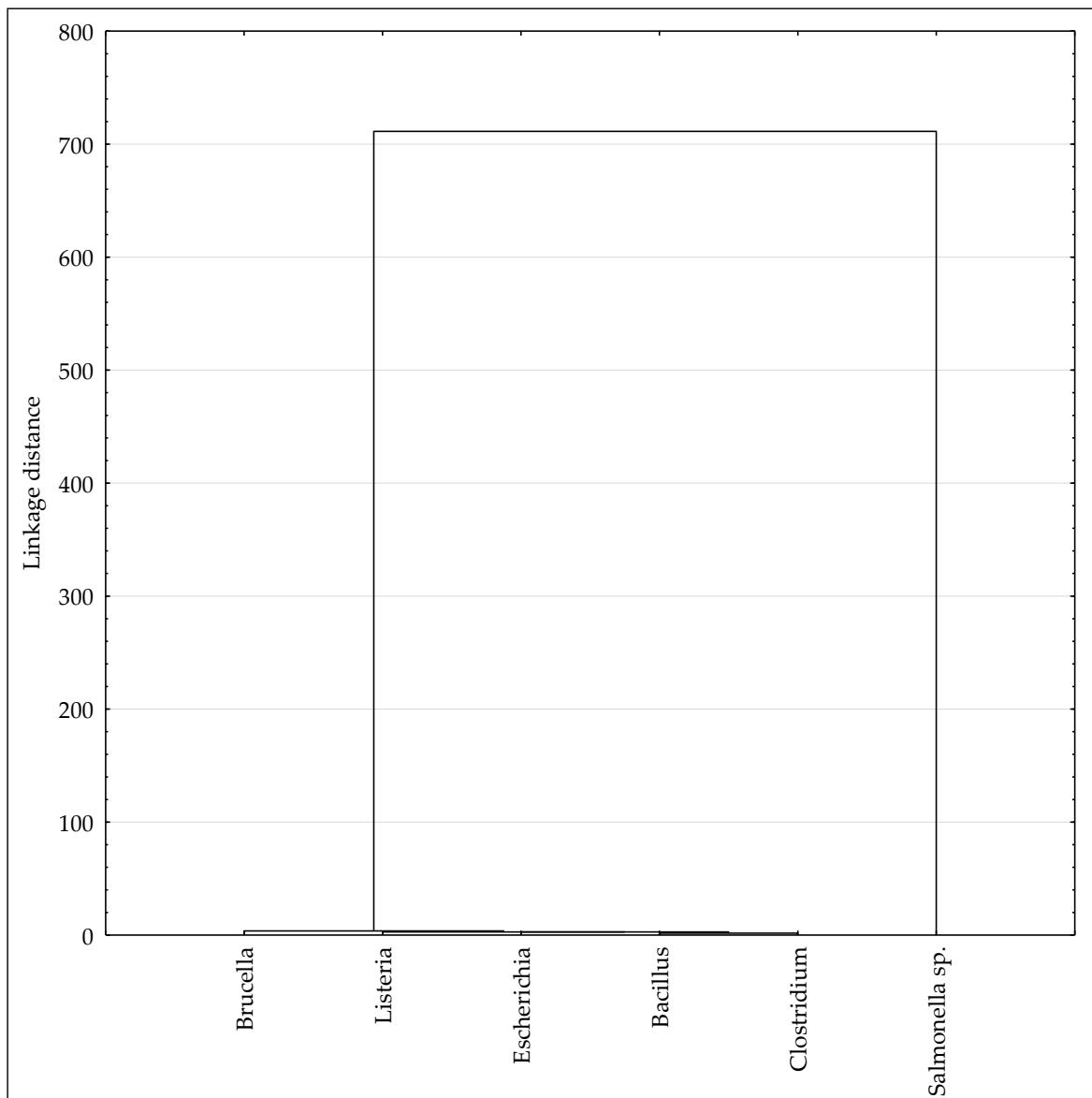
**Figure S9.** Similarities of RASFF notifications on pathogenic microorganisms and action taken within food using joining.



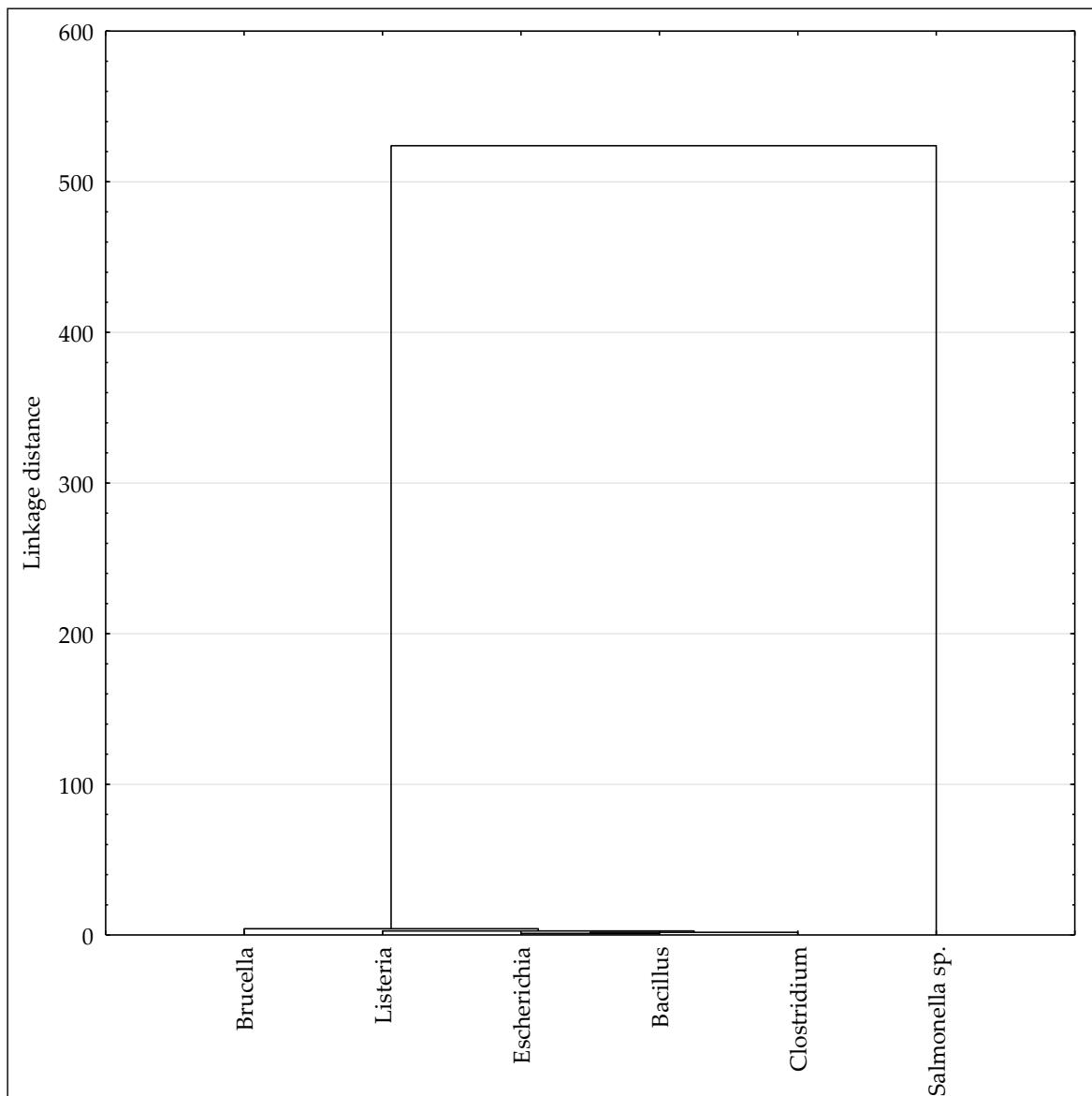
**Figure S10.** Similarities of RASFF notifications on pathogenic microorganisms and year within feed using joining.



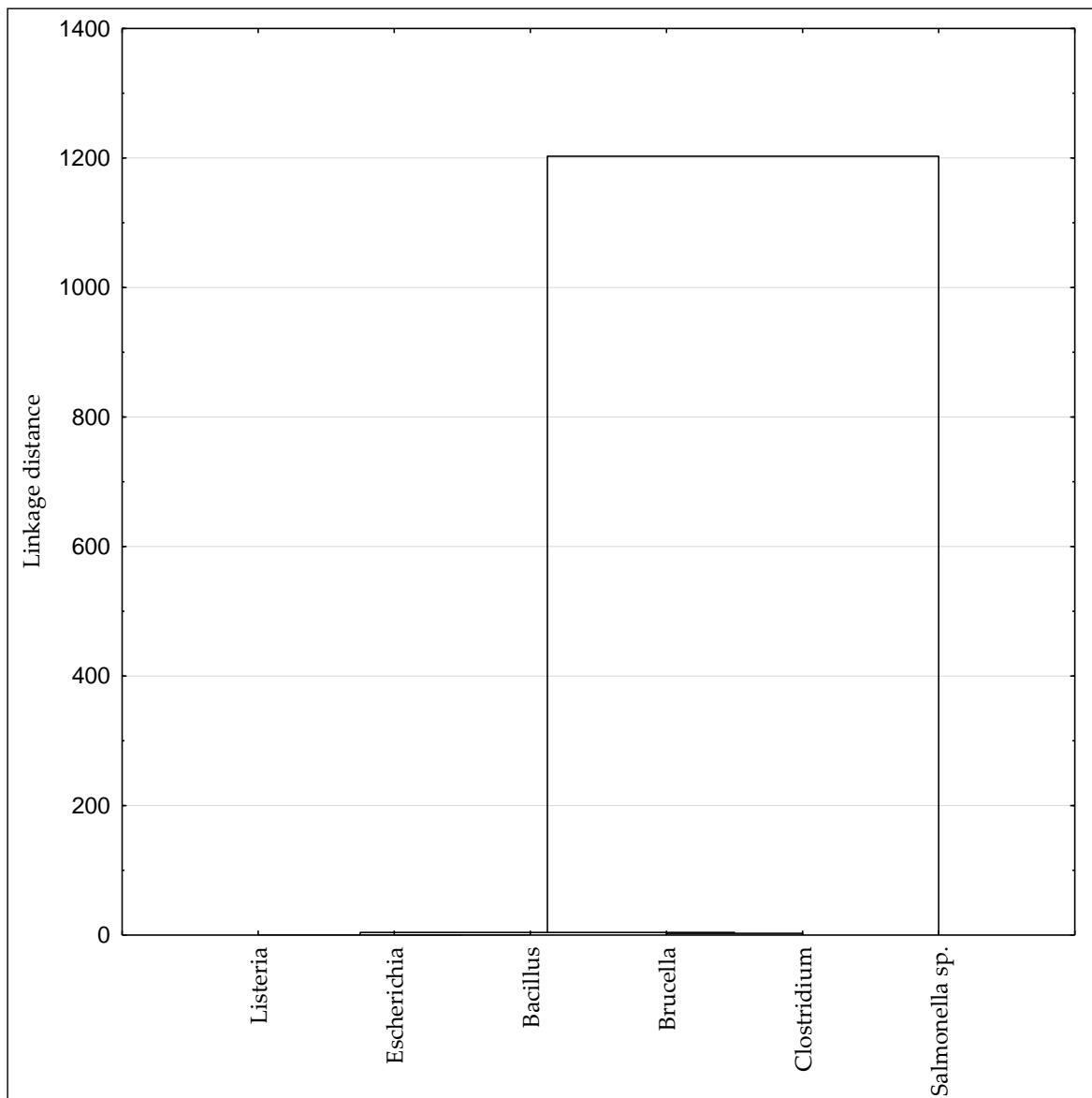
**Figure S11.** Similarities of RASFF notifications on pathogenic microorganisms and product category within feed using joining.



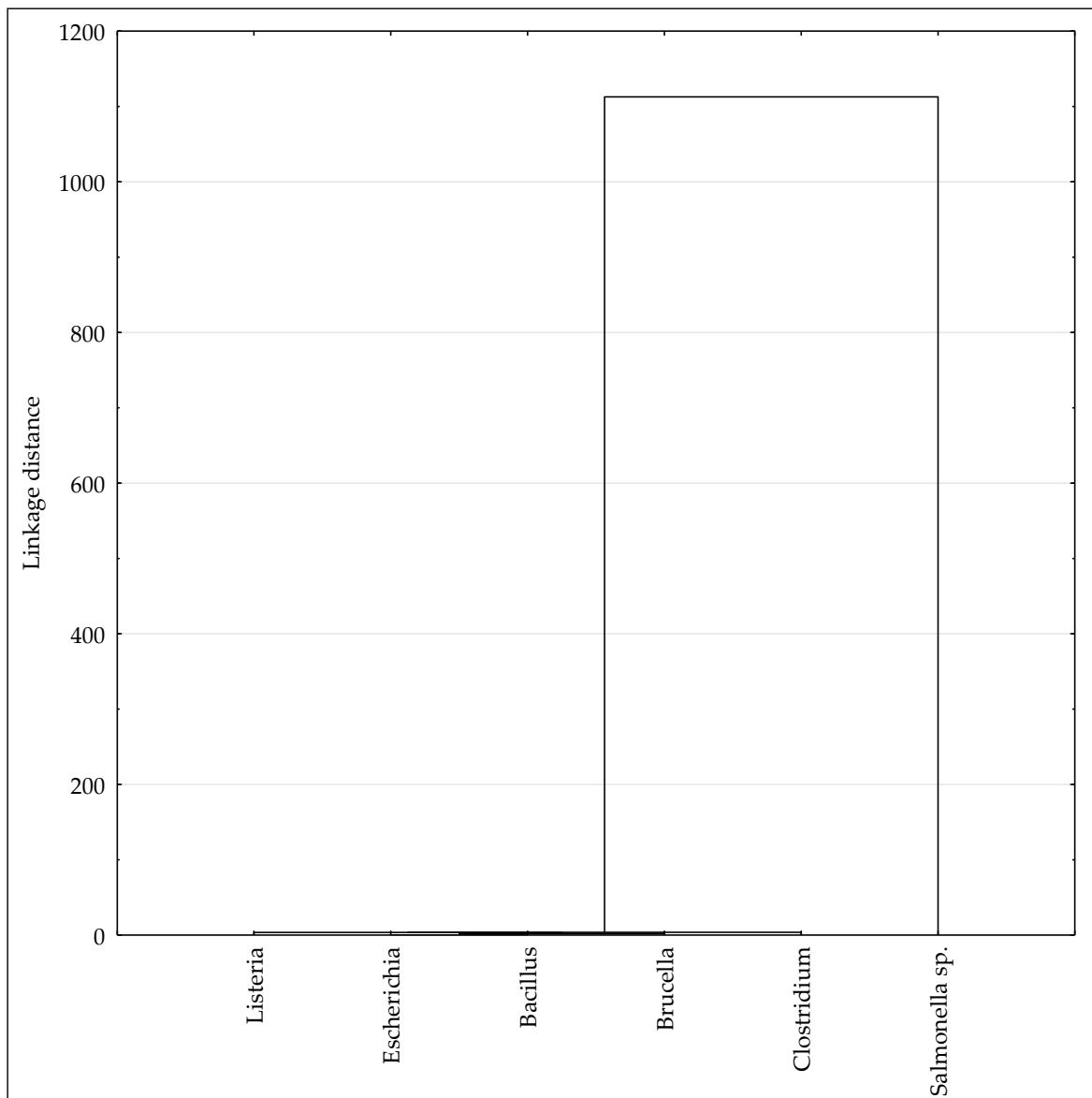
**Figure S12.** Similarities of RASFF notifications on pathogenic microorganisms and notifying country within feed using joining.



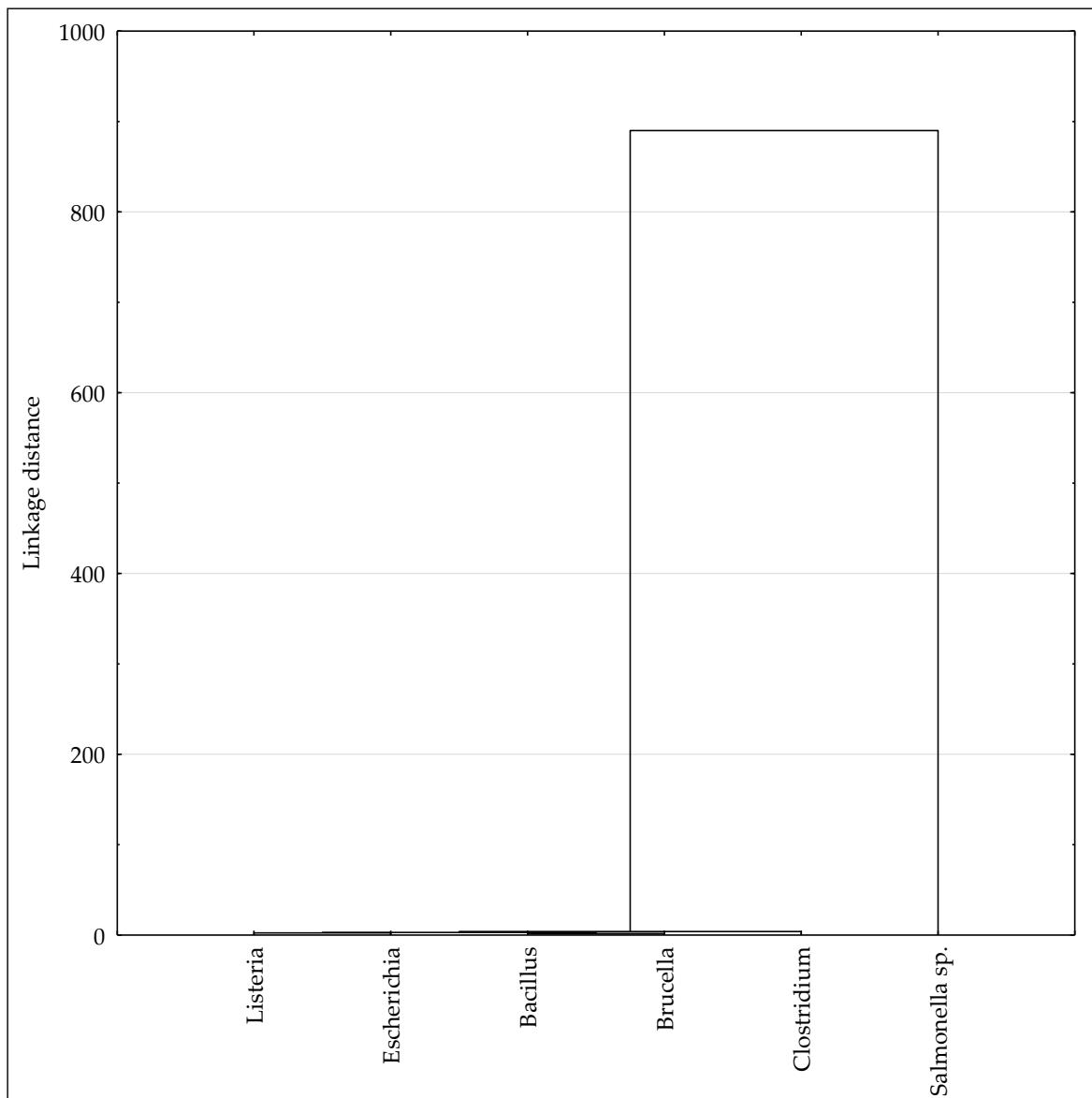
**Figure S13.** Similarities of RASFF notifications on pathogenic microorganisms and origin country within feed using joining.



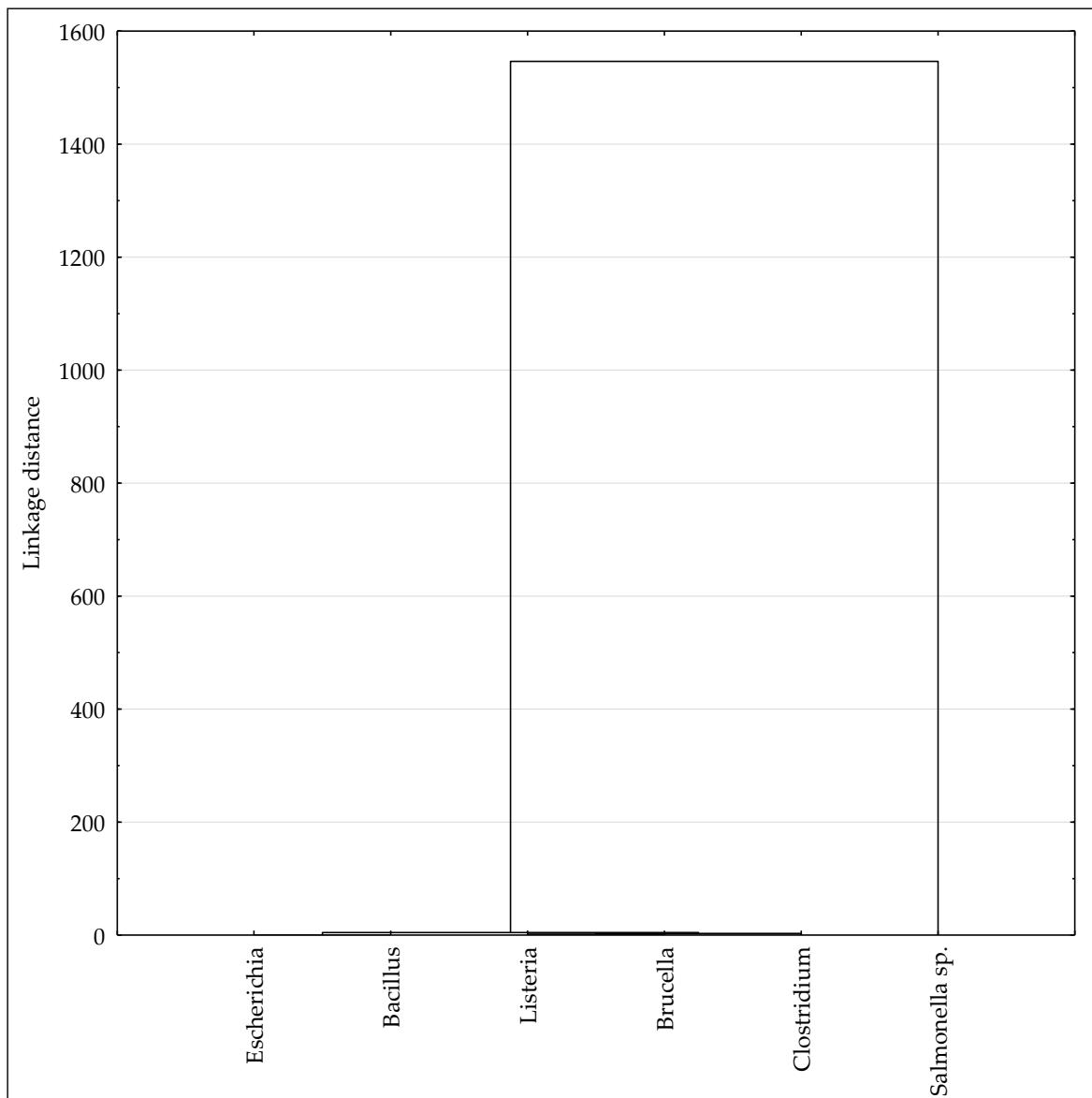
**Figure S14.** Similarities of RASFF notifications on pathogenic microorganisms and notification basis within feed using joining.



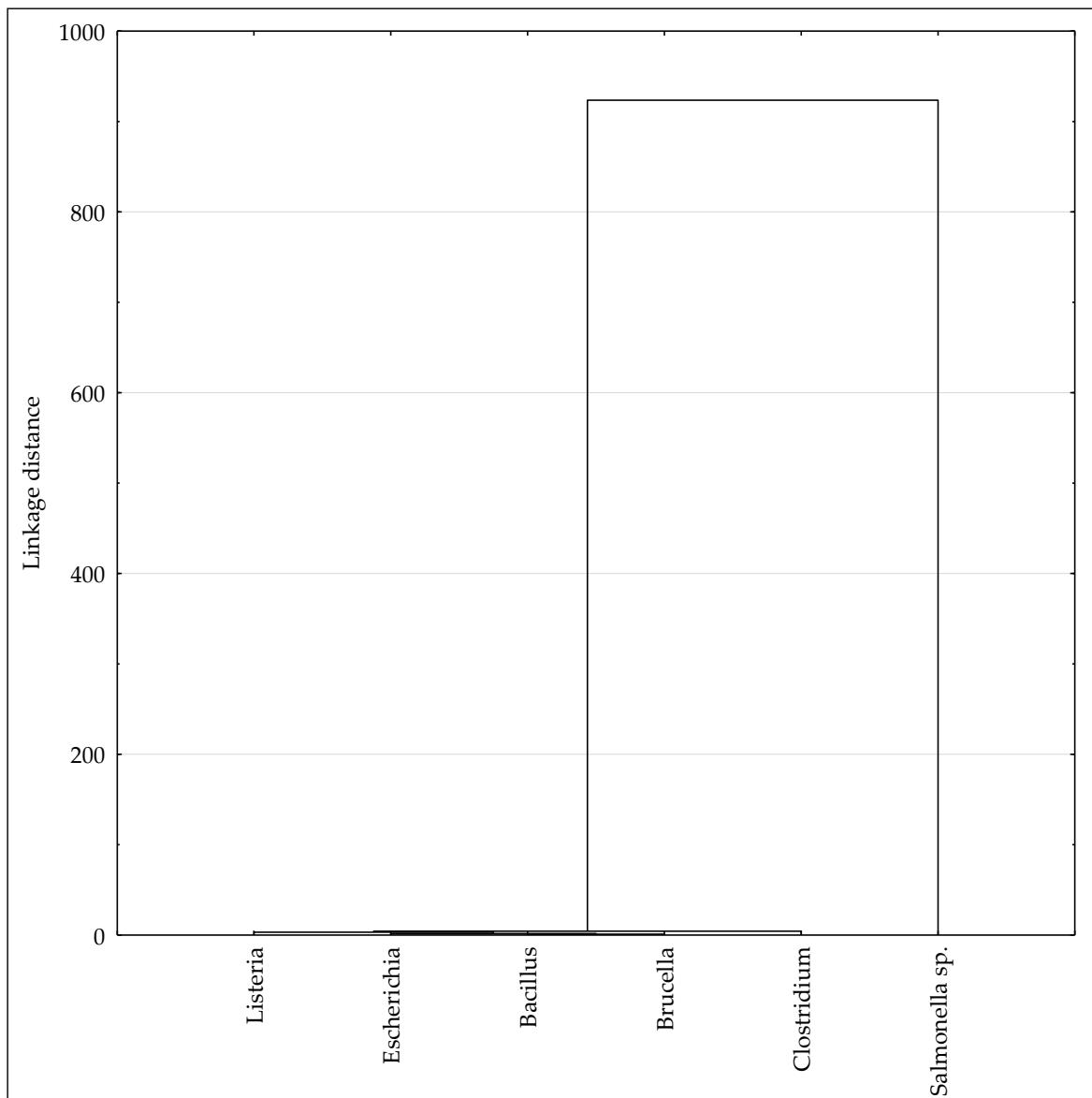
**Figure S15.** Similarities of RASFF notifications on pathogenic microorganisms and notification type within feed using joining.



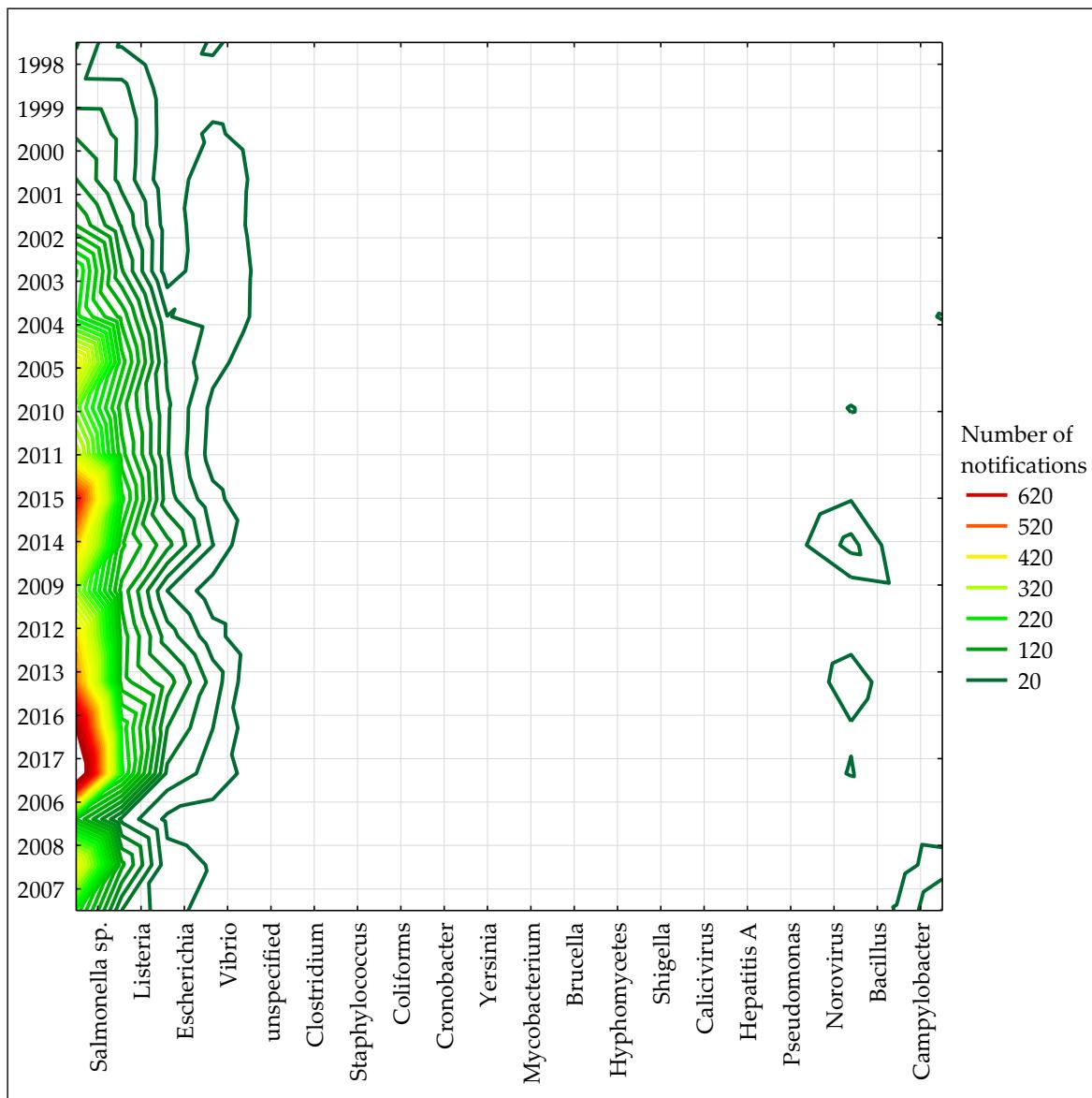
**Figure S16.** Similarities of RASFF notifications on pathogenic microorganisms and distribution status within feed using joining.



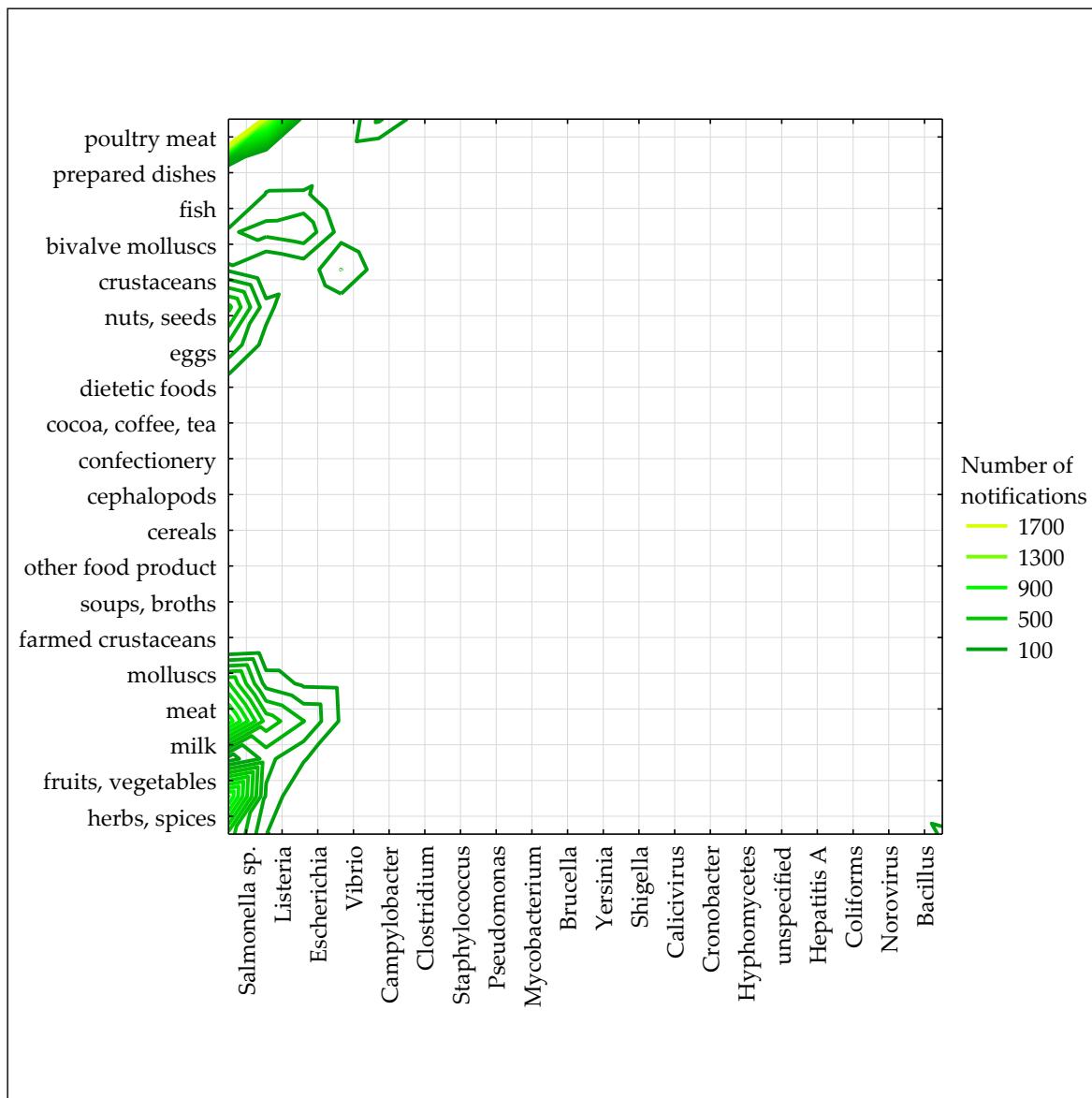
**Figure S17.** Similarities of RASFF notifications on pathogenic microorganisms and risk decision within feed using joining.



**Figure S18.** Similarities of RASFF notifications on pathogenic microorganisms and action taken within feed using joining.

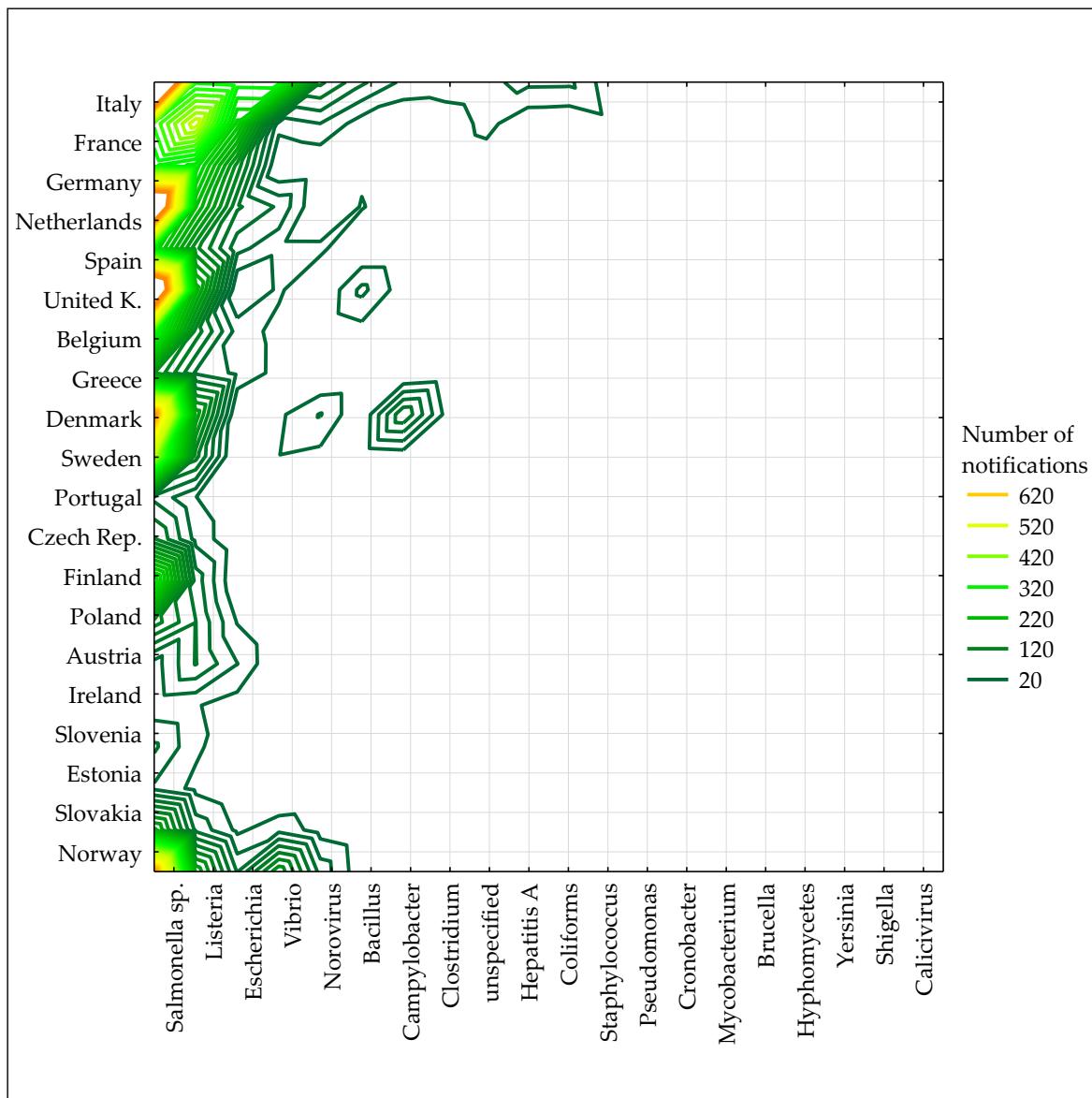


**Figure S19.** Similarities of RASFF notifications on pathogenic microorganisms and year within food using two-way joining.

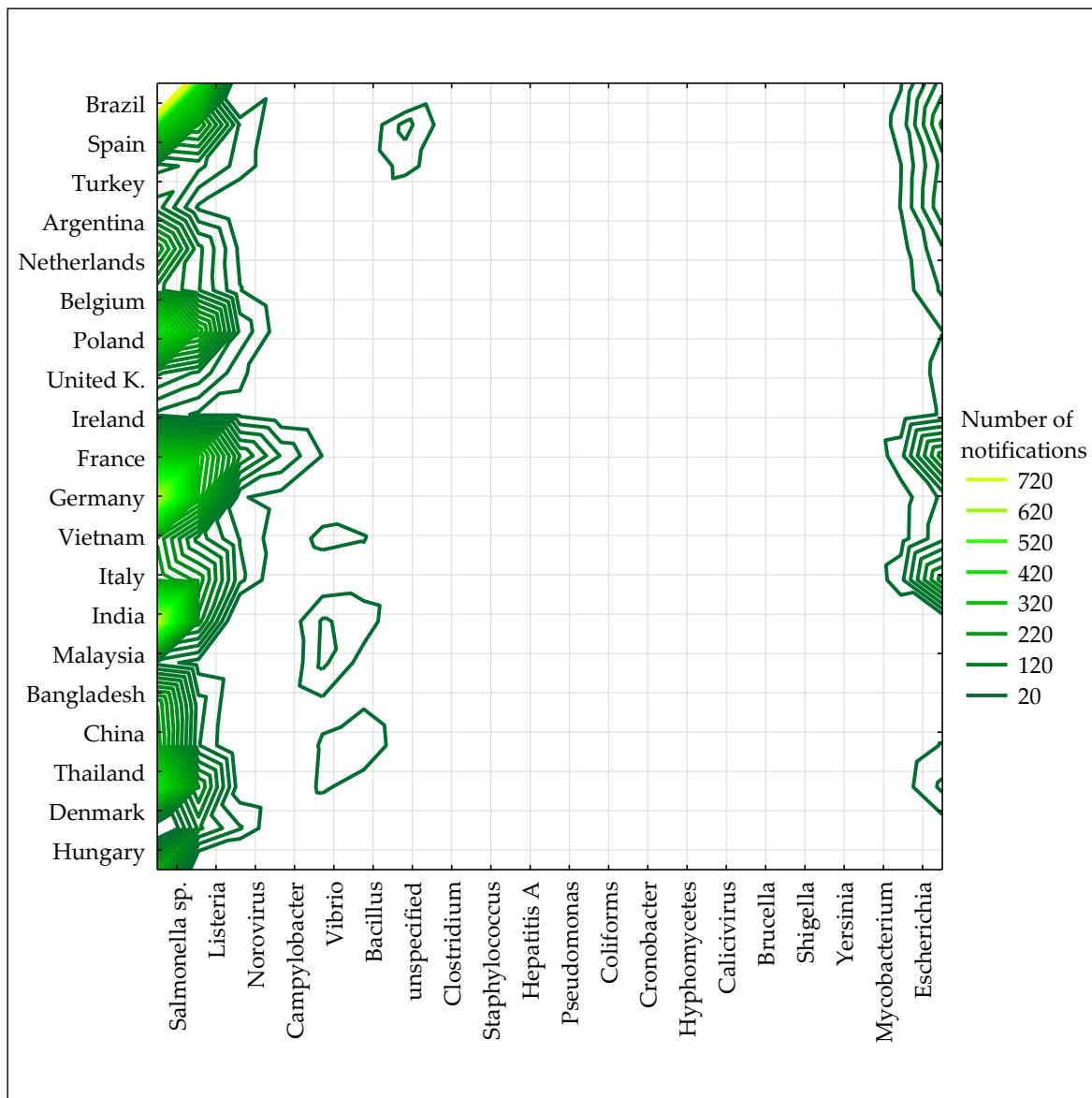


**Figure S20.** Similarities of RASFF notifications on pathogenic microorganisms and product category within food using two-way joining.

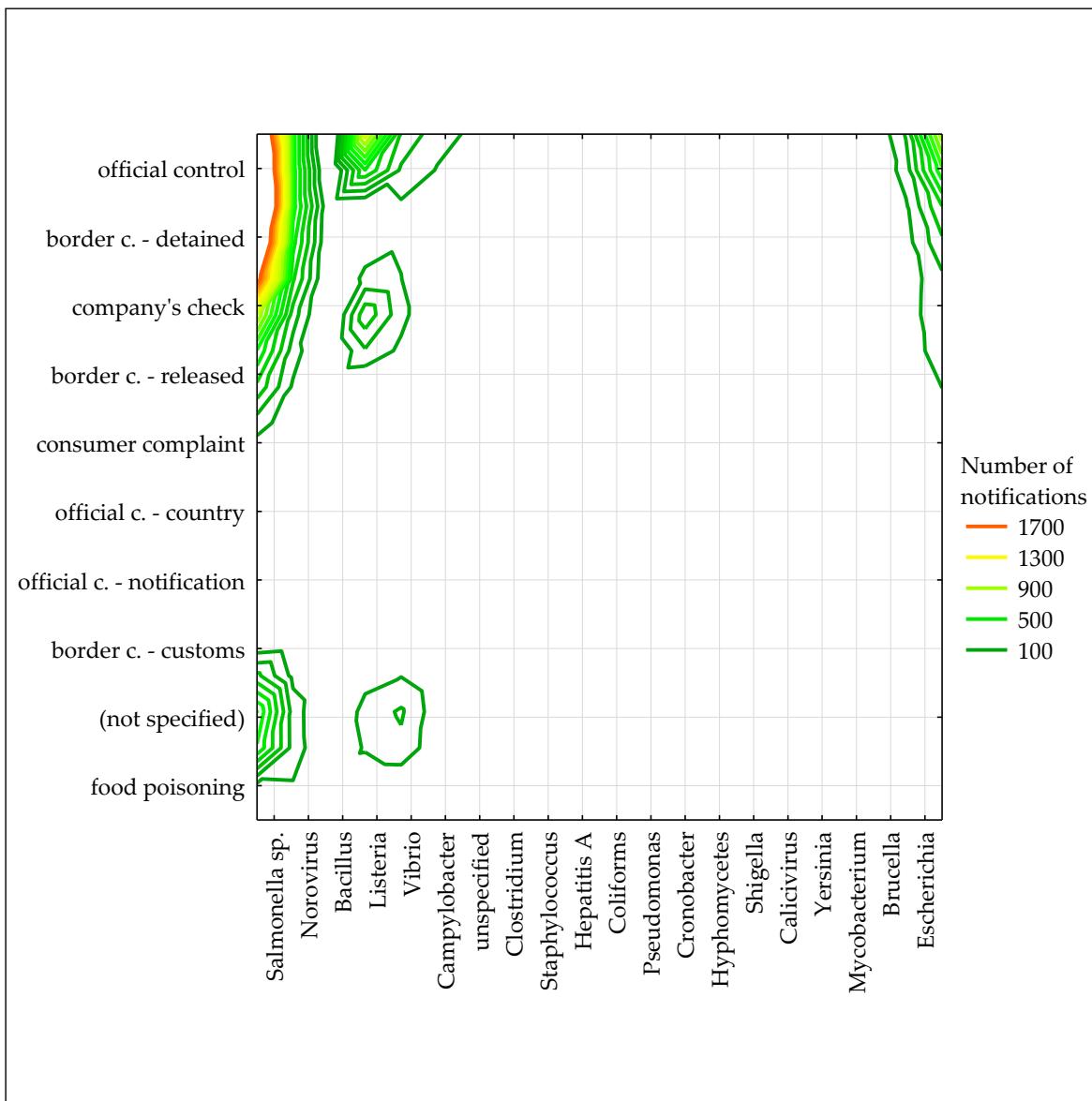
bivalve molluscs – bivalve molluscs and products thereof  
cephalopods – cephalopods and products thereof  
cereals – cereals and bakery products  
cocoa, coffee, tea – cocoa and cocoa preparations, coffee and tea  
crustaceans – crustaceans and products thereof  
dietetic foods – dietetic foods, food supplements, fortified foods  
eggs – eggs and egg products  
farmed crustaceans – farmed crustaceans and products thereof - (obsolete)  
fish – fish and fish products  
fruits, vegetables – fruits and vegetables  
herbs, spices – herbs and spices  
meat – meat and meat products (other than poultry)  
milk – milk and milk products  
molluscs – molluscs and products thereof - (obsolete)  
nuts, seeds – nuts, nut products and seeds  
other food product – other food product / mixed  
poultry meat – poultry meat and poultry meat products  
prepared dishes – prepared dishes and snacks  
soups, broths – soups, broths, sauces and condiments



**Figure S21.** Similarities of RASFF notifications on pathogenic microorganisms and notifying country within food using two-way joining.

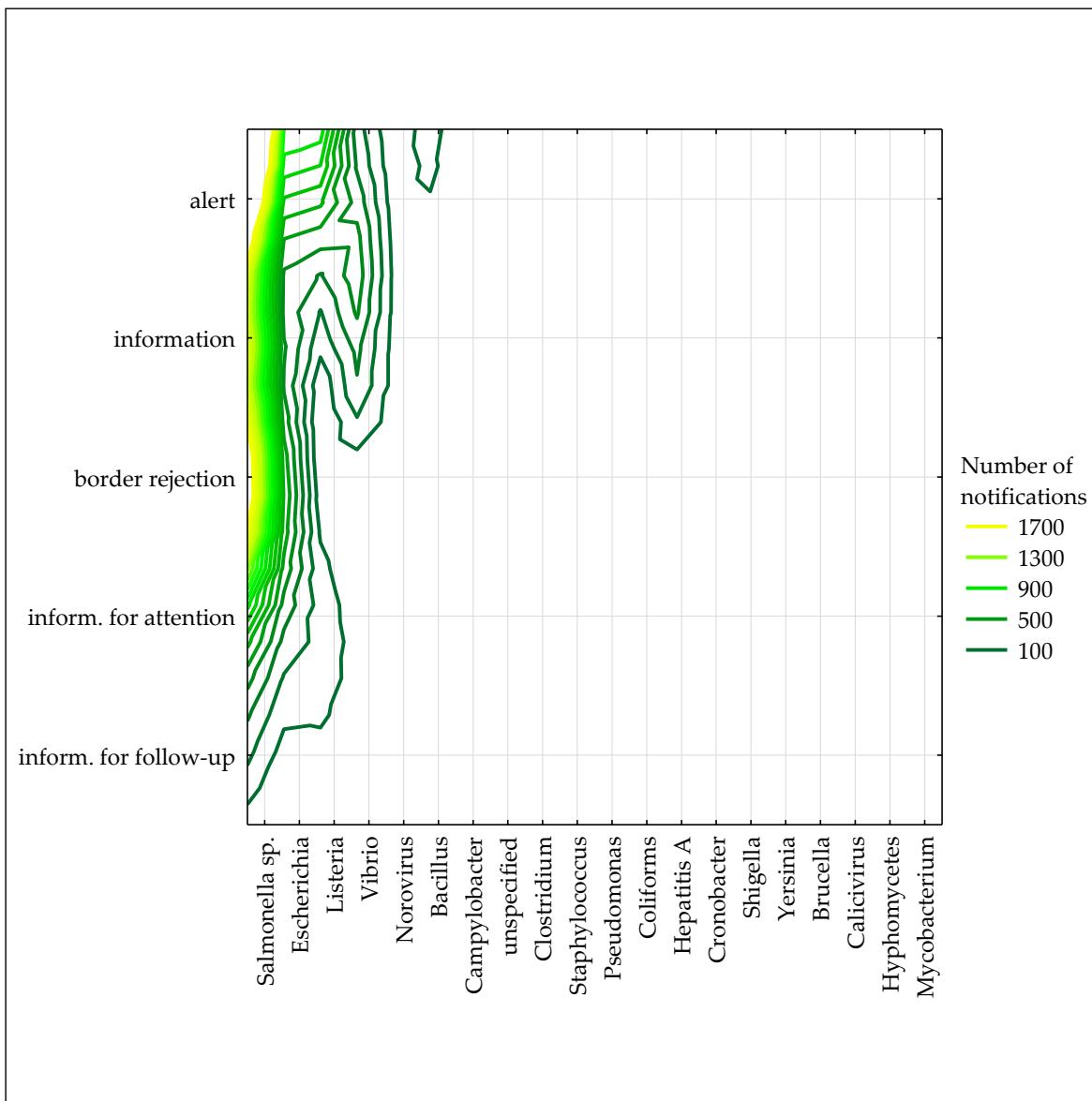


**Figure S22.** Similarities of RASFF notifications on pathogenic microorganisms and origin country within food using two-way joining.



**Figure S23.** Similarities of RASFF notifications on pathogenic microorganisms and notification basis within food using two-way joining.

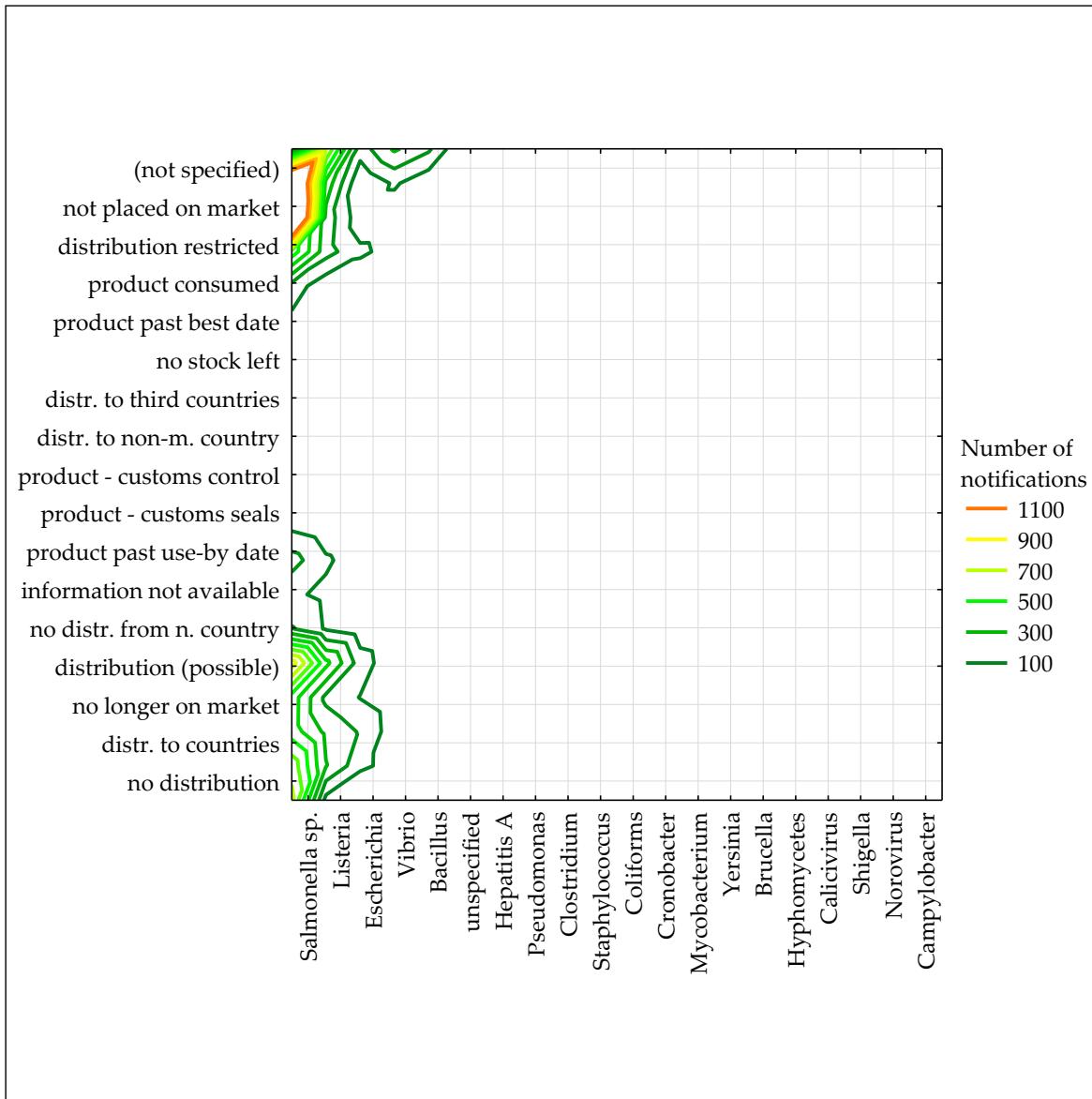
border c. - customs – border control - consignment under customs  
 border c. - detained – border control - consignment detained  
 border c. - released – border control - consignment released  
 company's check – company's own check  
 official c. - country – official control in non-member country  
 official c. - notification – official control following RASFF notification  
 official control – official control on the market



**Figure S24.** Similarities of RASFF notifications on pathogenic microorganisms and notification type within food using two-way joining.

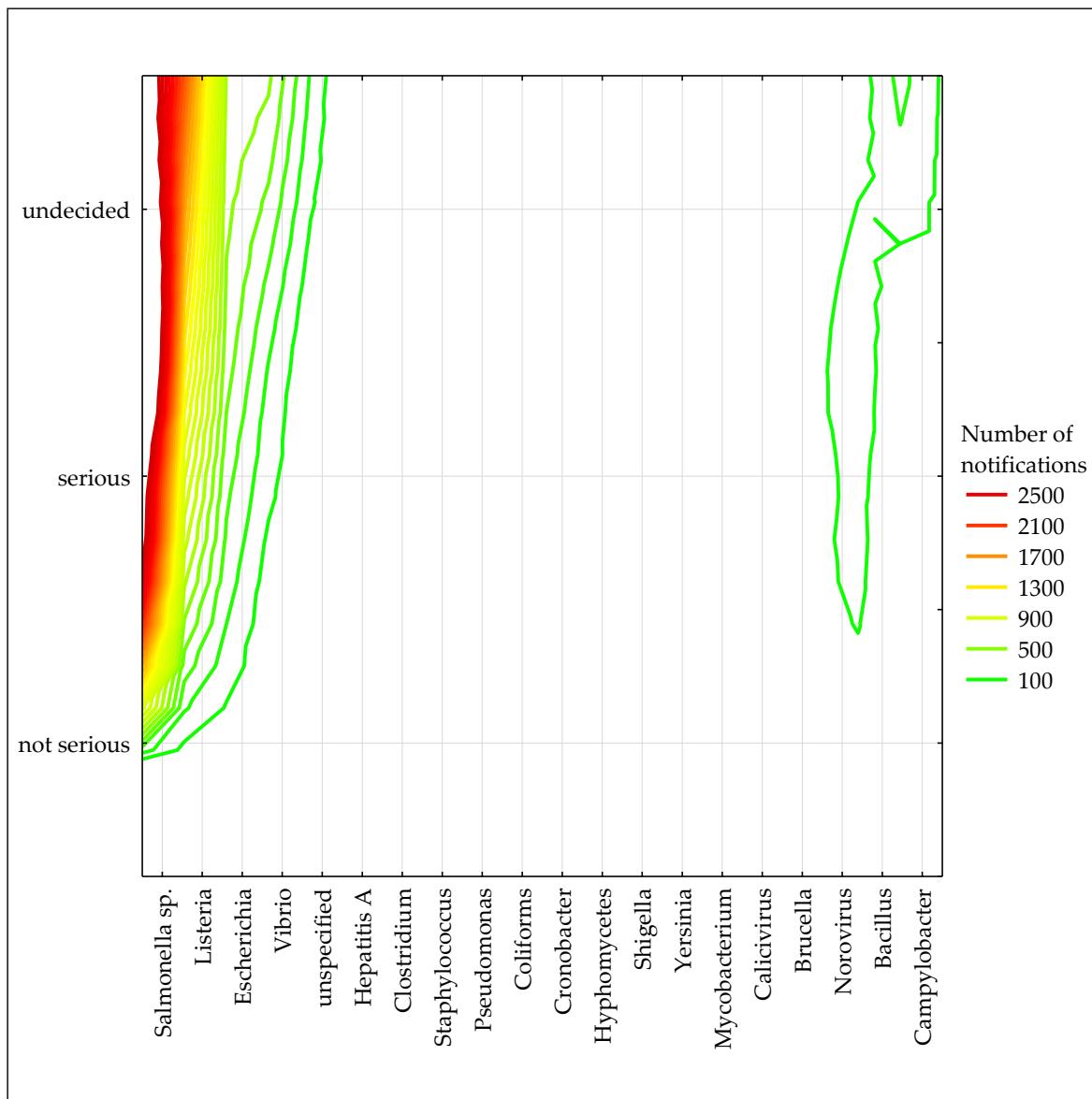
inform. for attention – information for attention

inform. for follow-up – information for follow-up

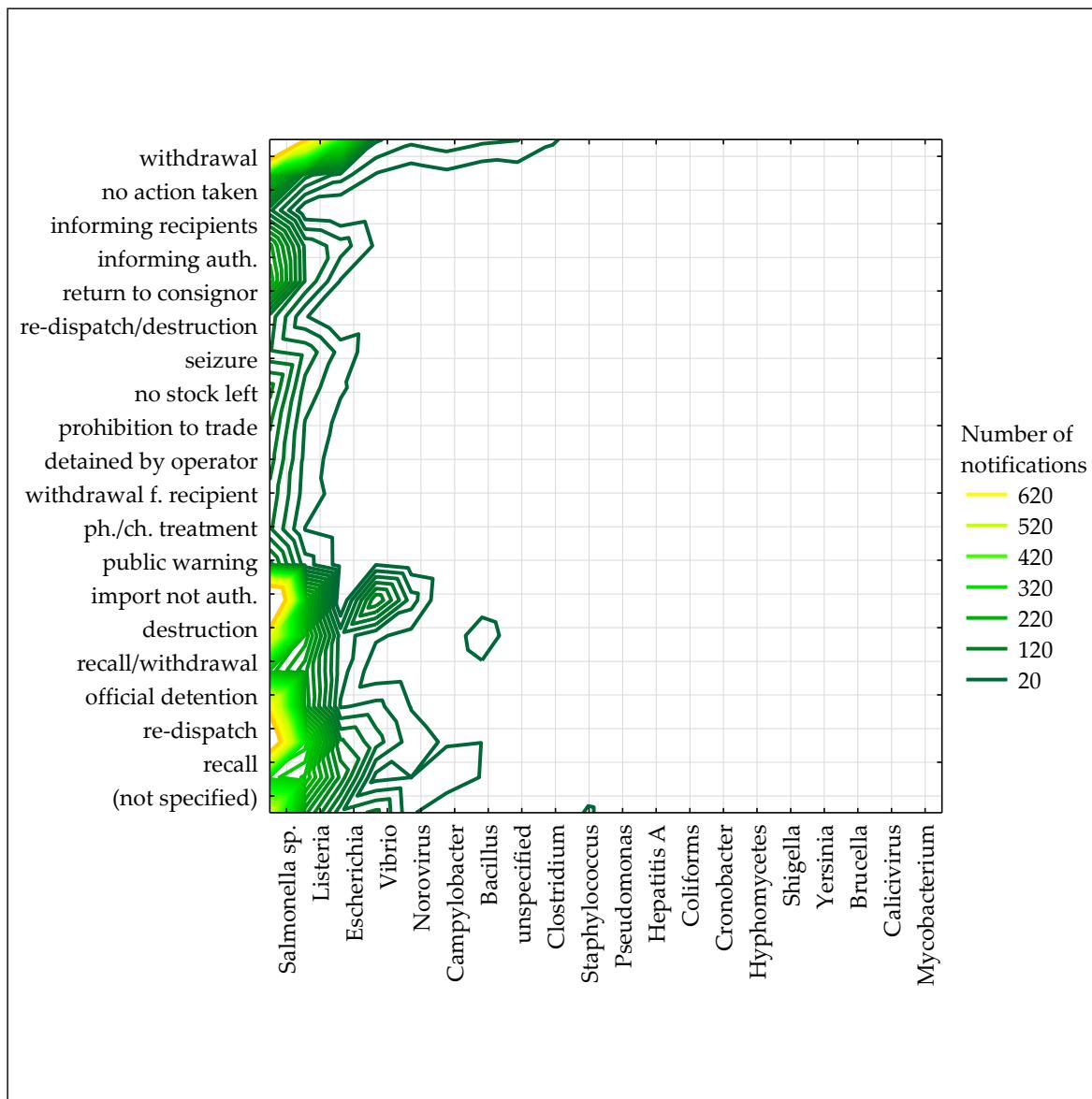


**Figure S25.** Similarities of RASFF notifications on pathogenic microorganisms and distribution status within food using two-way joining.

distr. to non-m. countries – distribution to non-member countries  
 distr. to countries – distribution to other member countries  
 distr. to third countries – distribution to third countries  
 distribution (possible) – distribution on the market (possible)  
 distribution restricted – distribution restricted to notifying country  
 information not available – information on distribution not (yet) available  
 no distr. from n. country – no distribution from notifying country  
 no longer on market – product (presumably) no longer on the market  
 not placed on market – product not (yet) placed on the market  
 product - customs control – product under customs control  
 product - customs seals – product allowed to travel to destination under customs seals  
 product consumed – product already consumed  
 product past best date – product past best before date

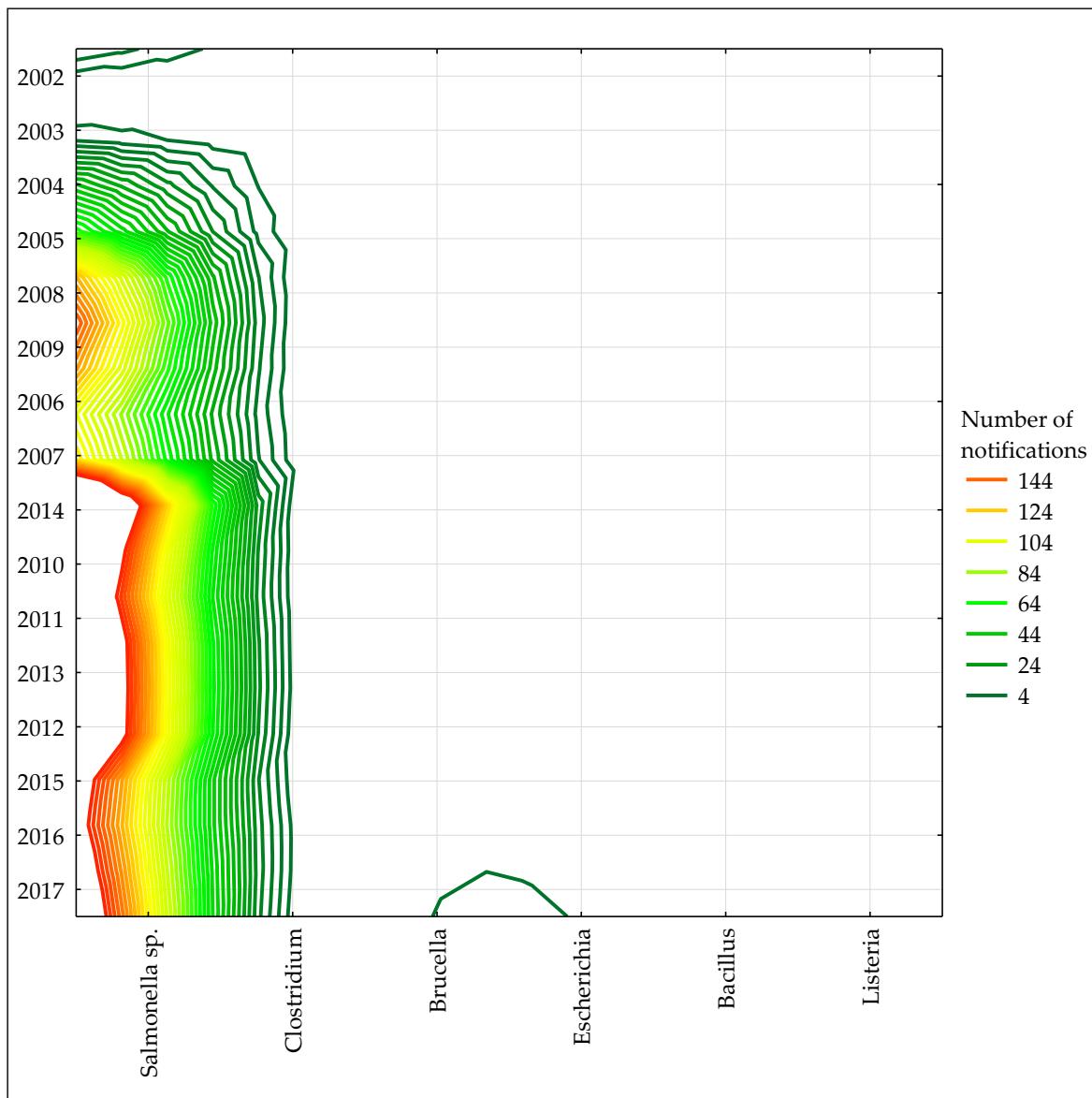


**Figure S26.** Similarities of RASFF notifications on pathogenic microorganisms and risk decision within food using two-way joining.

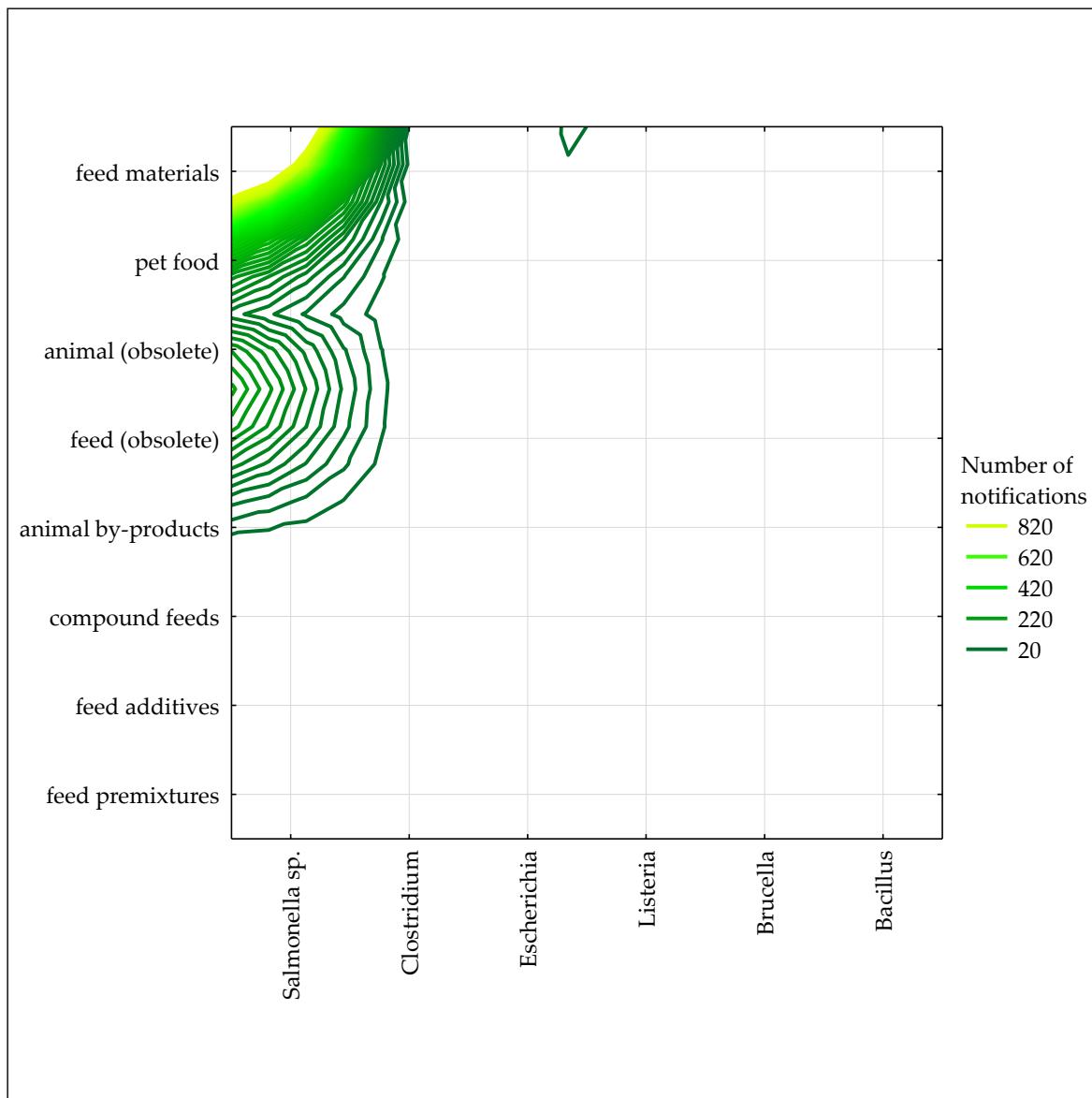


**Figure S27.** Similarities of RASFF notifications on pathogenic microorganisms and action taken within food using two-way joining.

import not auth. – import not authorised  
 informing auth. – informing authorities  
 ph./ch. treatment – physical/chemical treatment  
 prohibition to trade – prohibition to trade - sales ban  
 public warning – public warning - press release  
 recall – recall from consumers  
 recall/withdrawal – product recall or withdrawal  
 re-dispatch/destruction – re-dispatch or destruction  
 withdrawal – withdrawal from the market  
 withdrawal f. recipient – withdrawal from recipient(s)

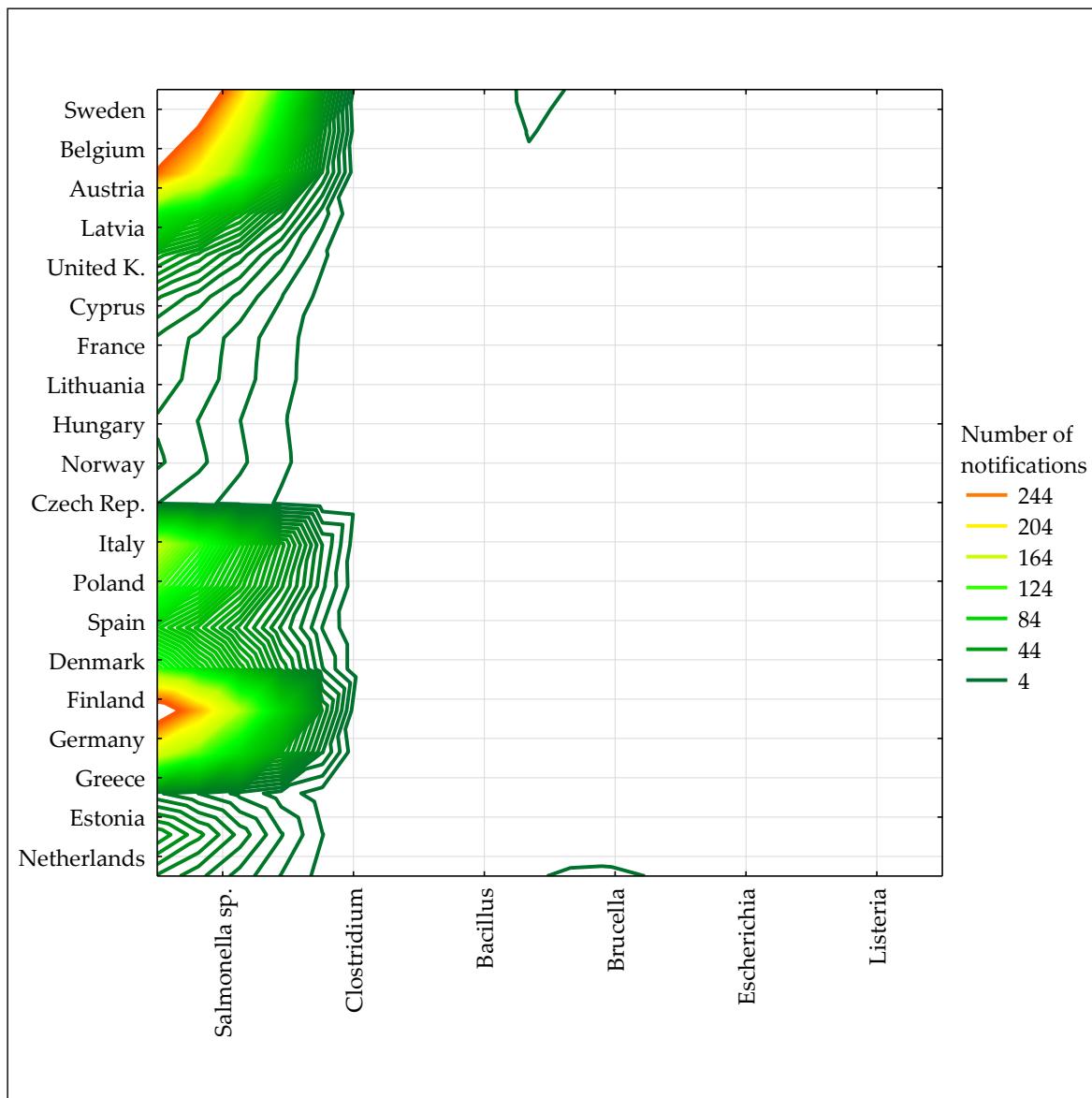


**Figure S28.** Similarities of RASFF notifications on pathogenic microorganisms and year within feed using two-way joining.

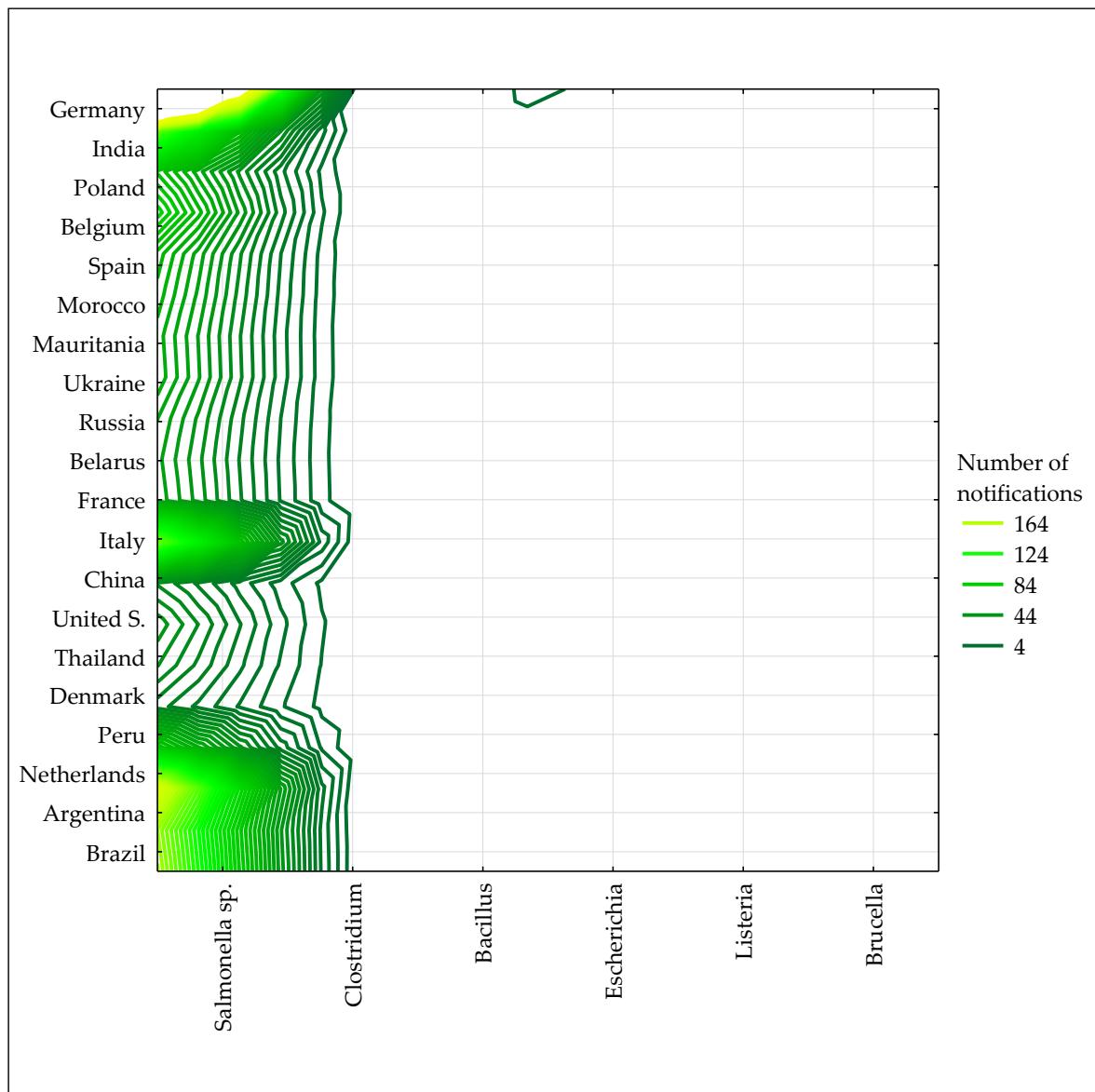


**Figure S29.** Similarities of RASFF notifications on pathogenic microorganisms and product category within feed using two-way joining.

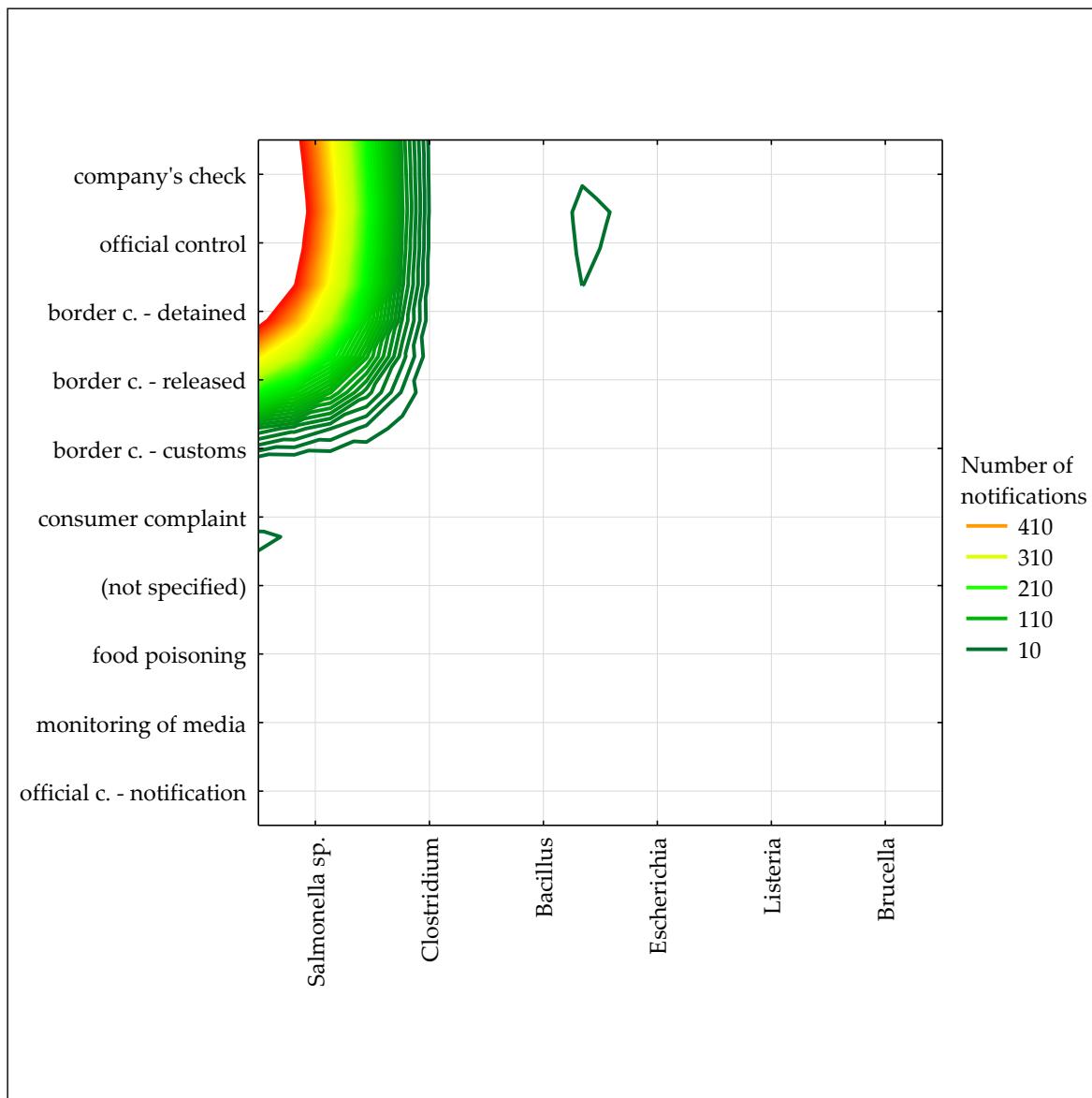
animal (obsolete) – animal nutrition - (obsolete)  
 feed (obsolete) – feed for food-producing animals - (obsolete)



**Figure S30.** Similarities of RASFF notifications on pathogenic microorganisms and notifying country within feed using two-way joining.

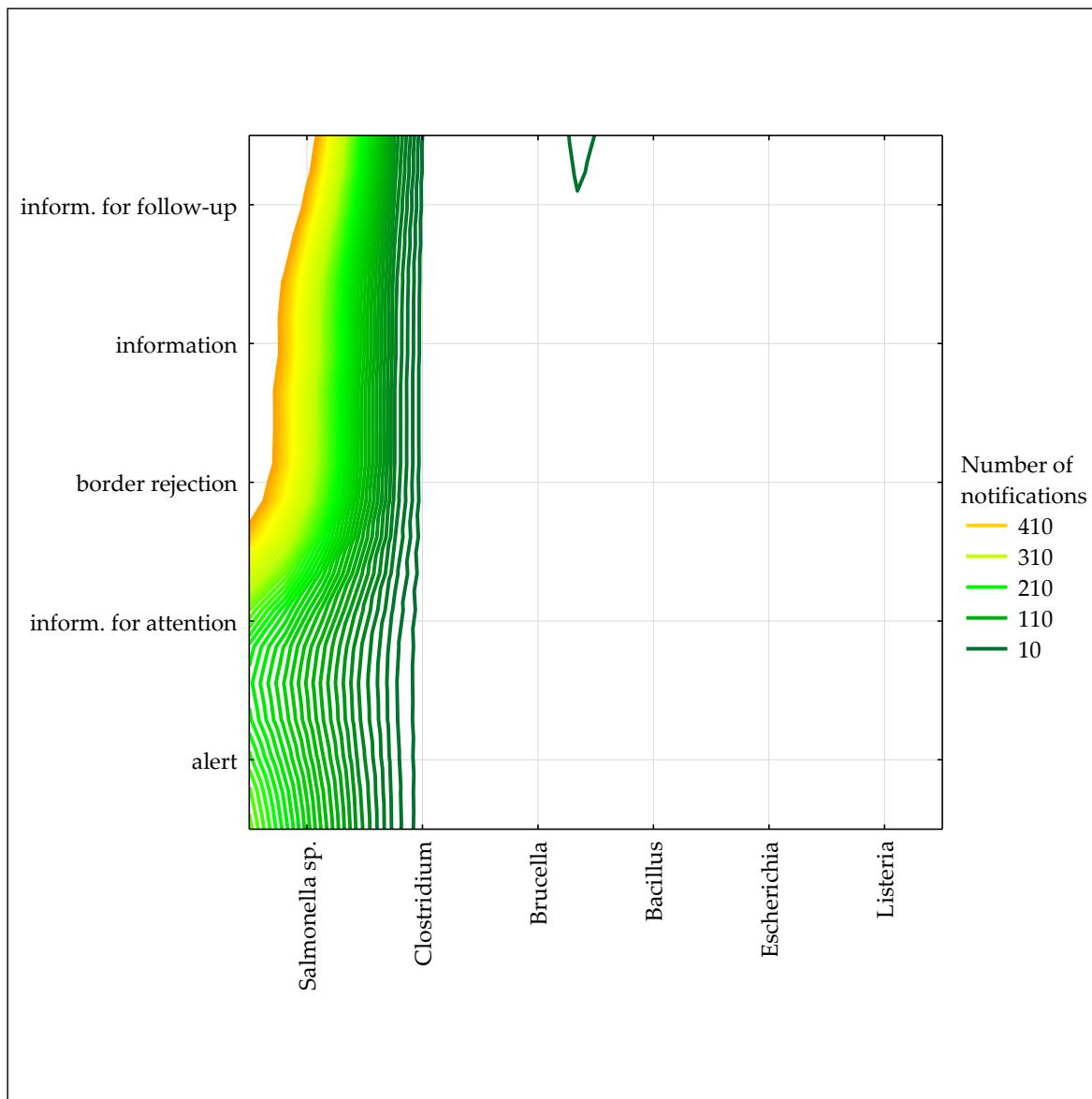


**Figure S31.** Similarities of RASFF notifications on pathogenic microorganisms and origin country within feed using two-way joining.



**Figure S32.** Similarities of RASFF notifications on pathogenic microorganisms and notification basis within feed using two-way joining.

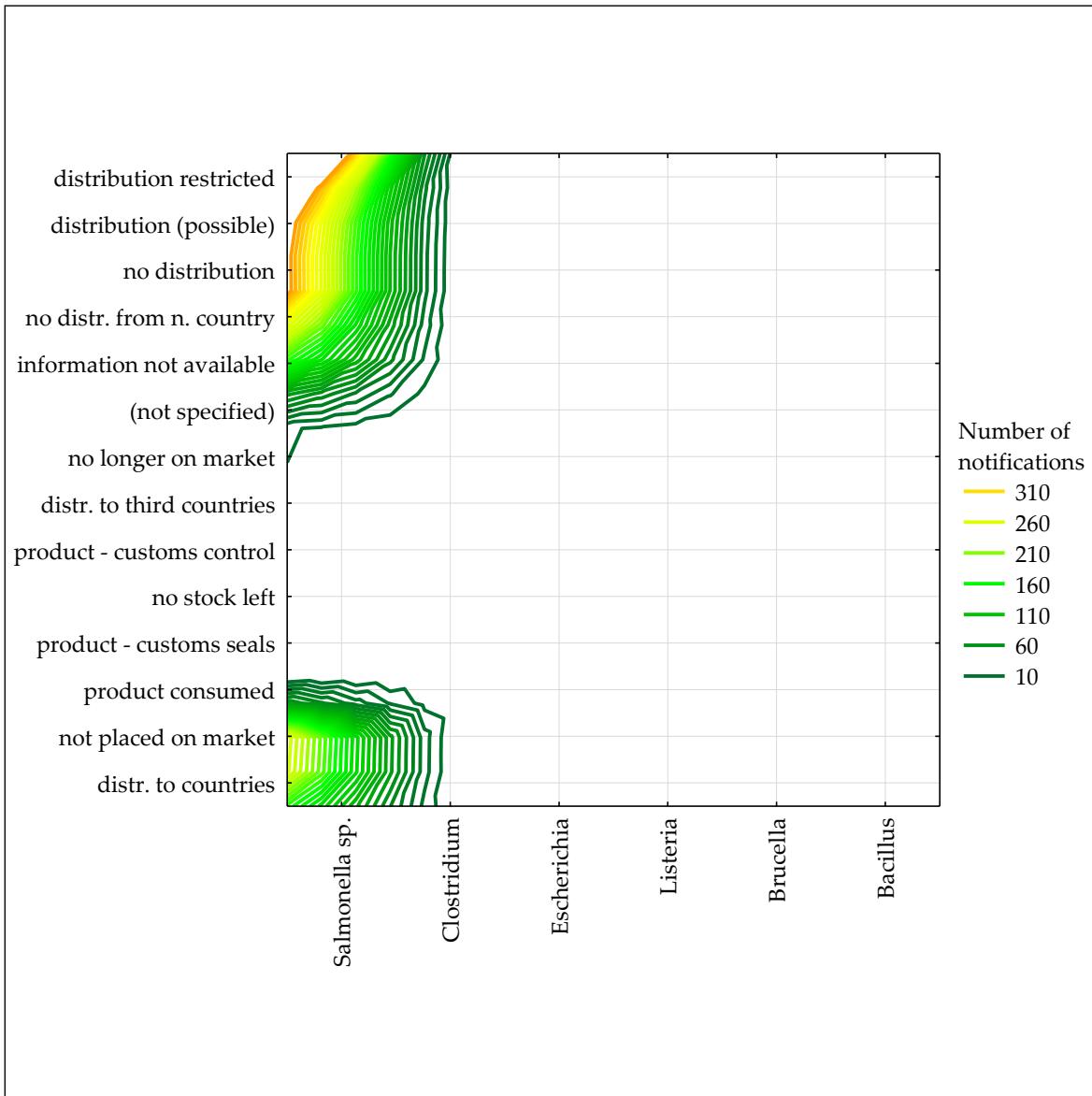
border c. - customs – border control - consignment under customs  
 border c. - detained – border control - consignment detained  
 border c. - released – border control - consignment released  
 company's check – company's own check  
 official c. - notification – official control following RASFF notification  
 official control – official control on the market



**Figure S33.** Similarities of RASFF notifications on pathogenic microorganisms and notification type within feed using two-way joining.

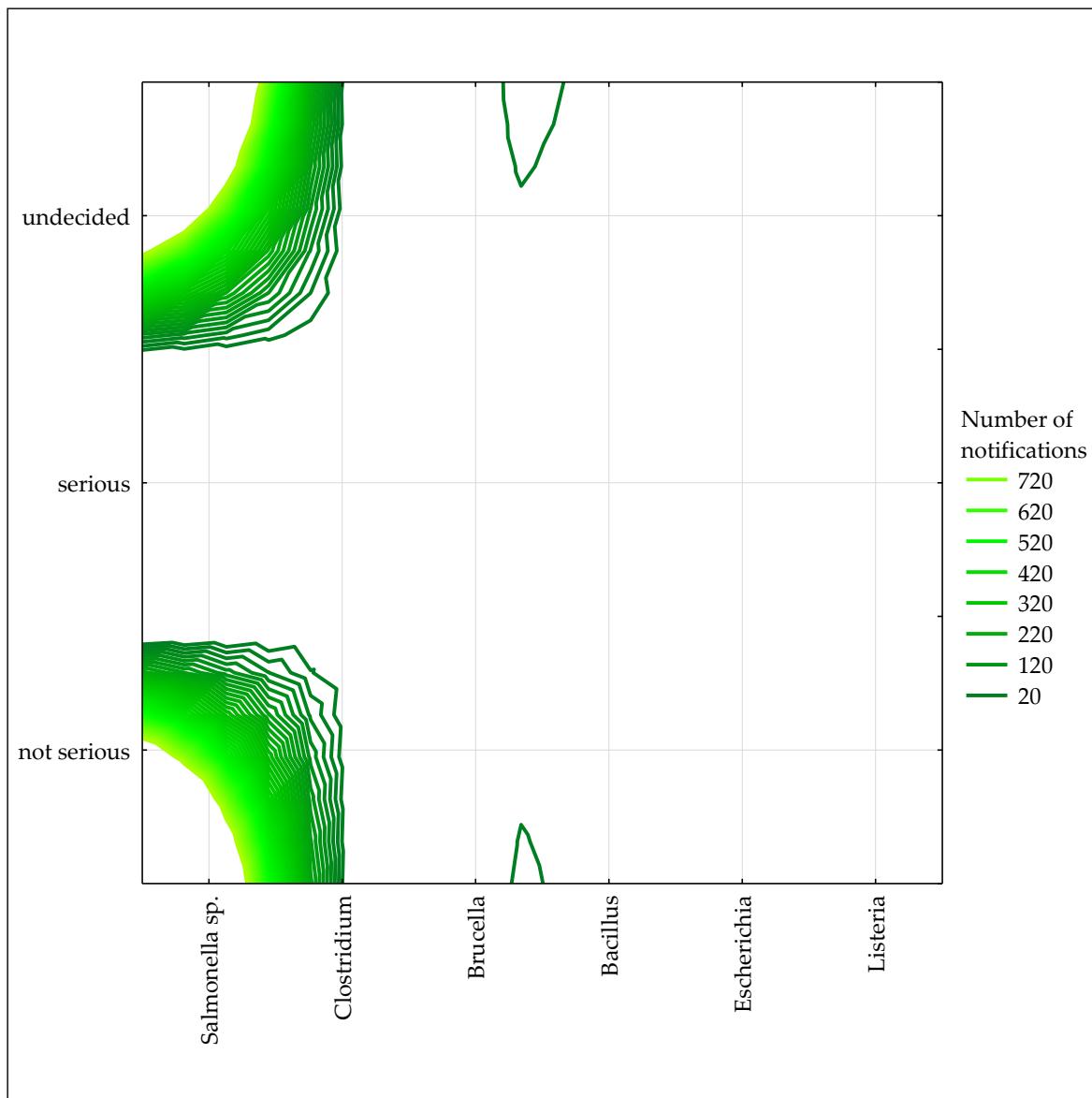
inform. for attention – information for attention

inform. for follow-up – information for follow-up

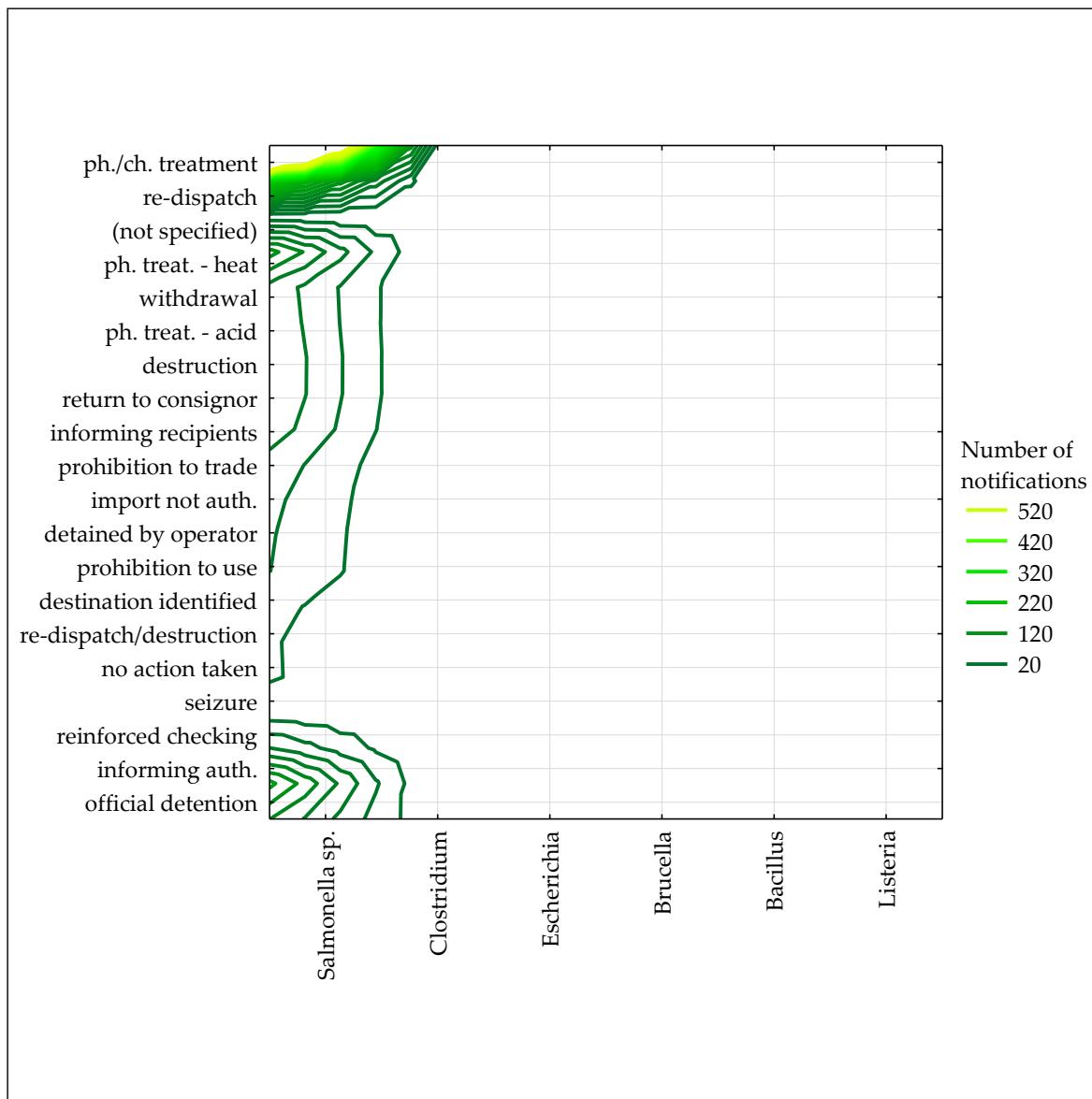


**Figure S34.** Similarities of RASFF notifications on pathogenic microorganisms and distribution status within feed using two-way joining.

distr. to countries – distribution to other member countries  
 distr. to third countries – distribution to third countries  
 distribution (possible) – distribution on the market (possible)  
 distribution restricted – distribution restricted to notifying country  
 information not available – information on distribution not (yet) available  
 no distr. from n. country – no distribution from notifying country  
 no longer on market – product (presumably) no longer on the market  
 not placed on market – product not (yet) placed on the market  
 product - customs control – product under customs control  
 product - customs seals – product allowed to travel to destination under customs seals  
 product consumed – product already consumed



**Figure S35.** Similarities of RASFF notifications on pathogenic microorganisms and risk decision within feed using two-way joining.



**Figure S36.** Similarities of RASFF notifications on pathogenic microorganisms and action taken within feed using two-way joining.

destination identified – destination of the product identified

import not auth. – import not authorised

informing auth. – informing authorities

ph. treat. - acid – physical treatment - acid treatment

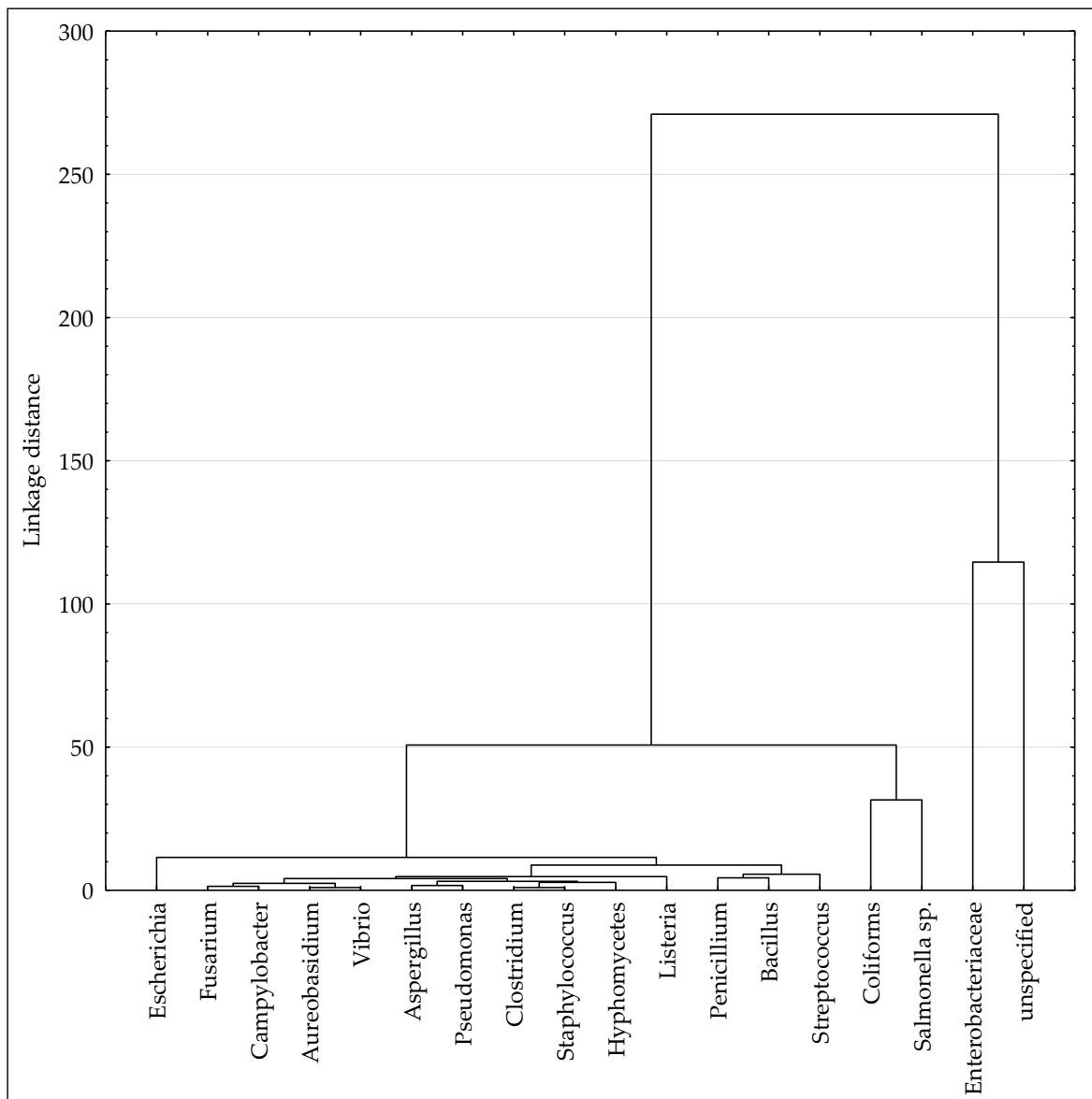
ph. treat. - heat – physical treatment - heat treatment

ph./ch. treatment – physical/chemical treatment

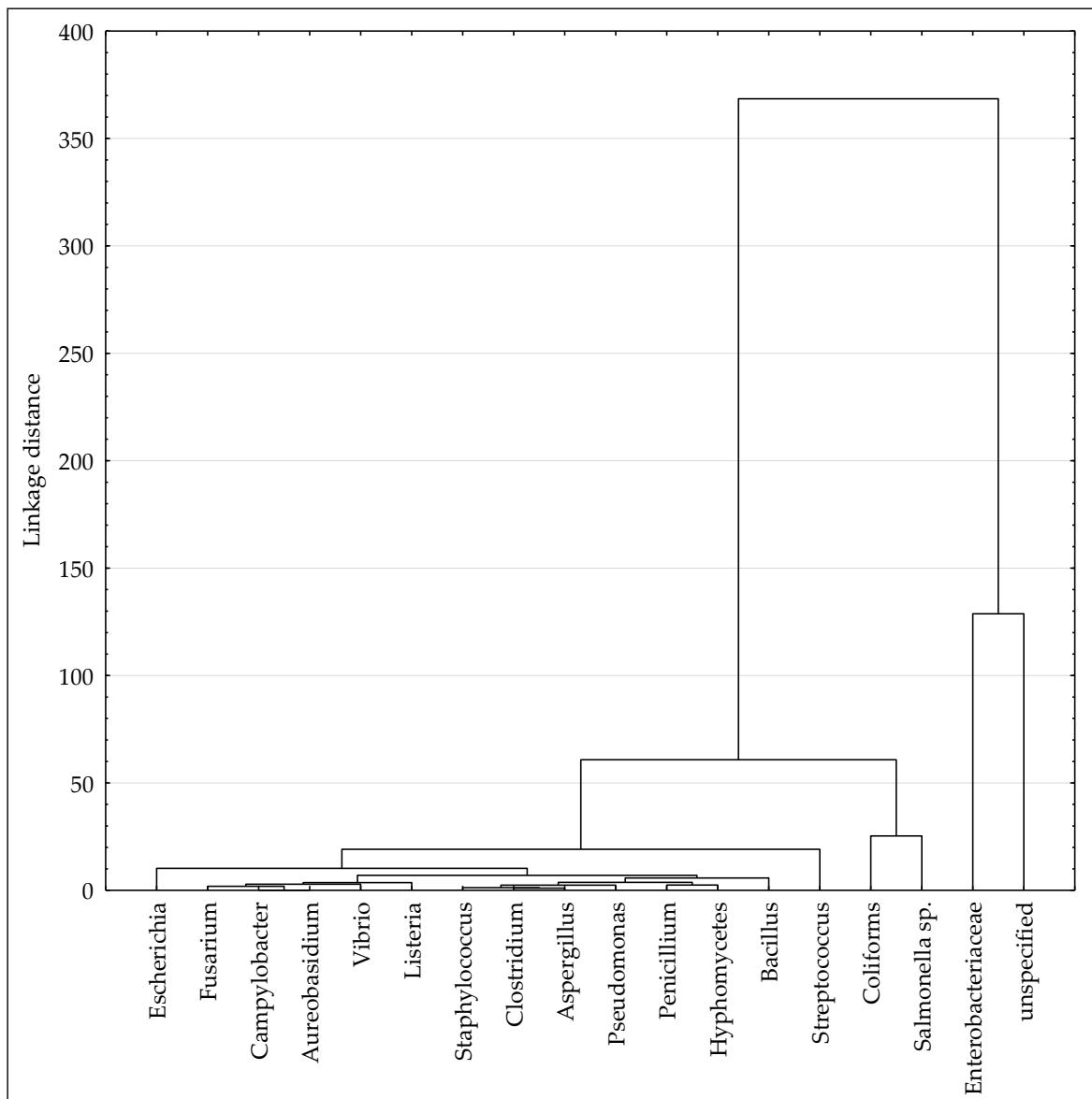
prohibition to trade – prohibition to trade - sales ban

re-dispatch/destruction – re-dispatch or destruction

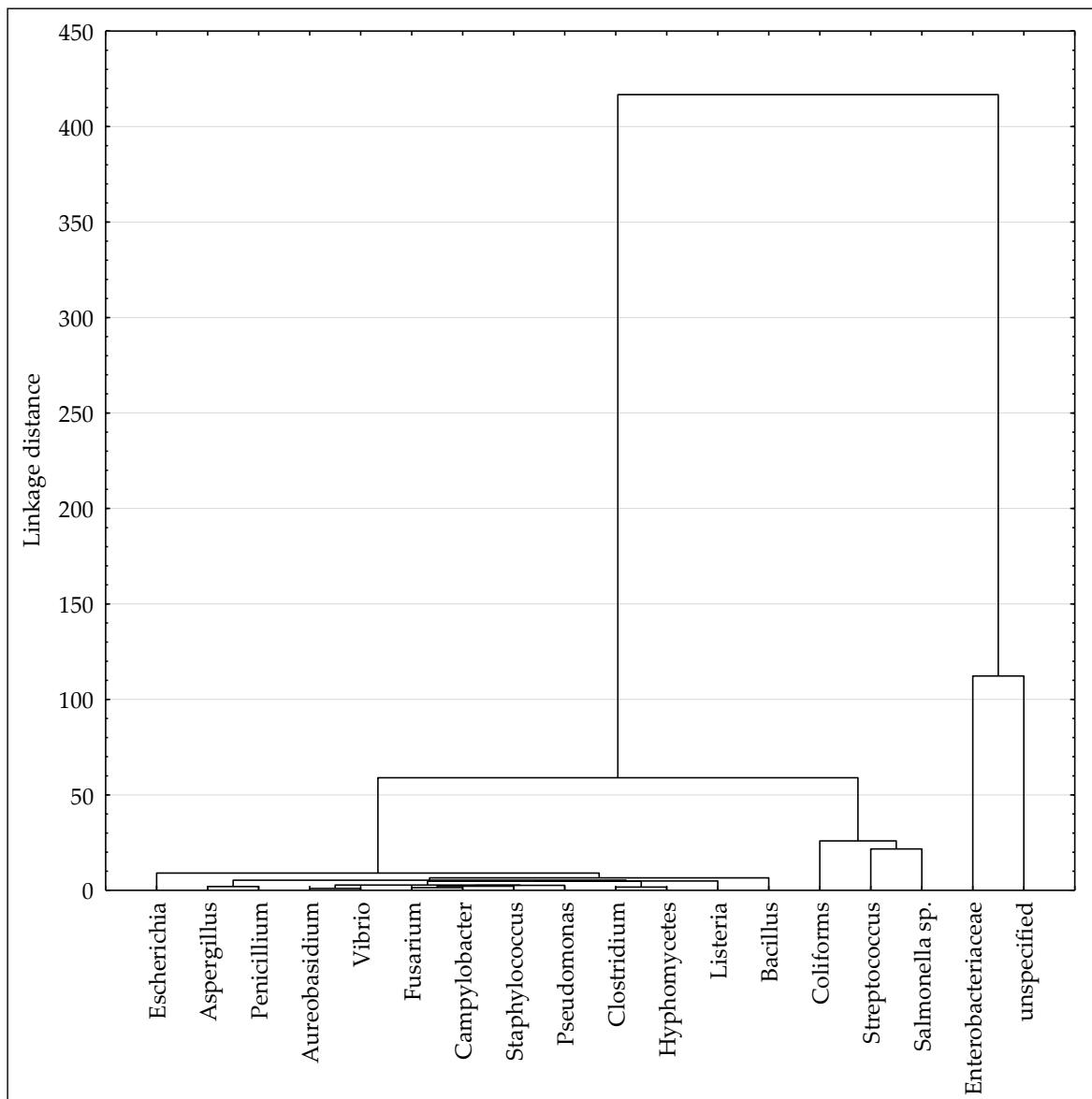
withdrawal – withdrawal from the market



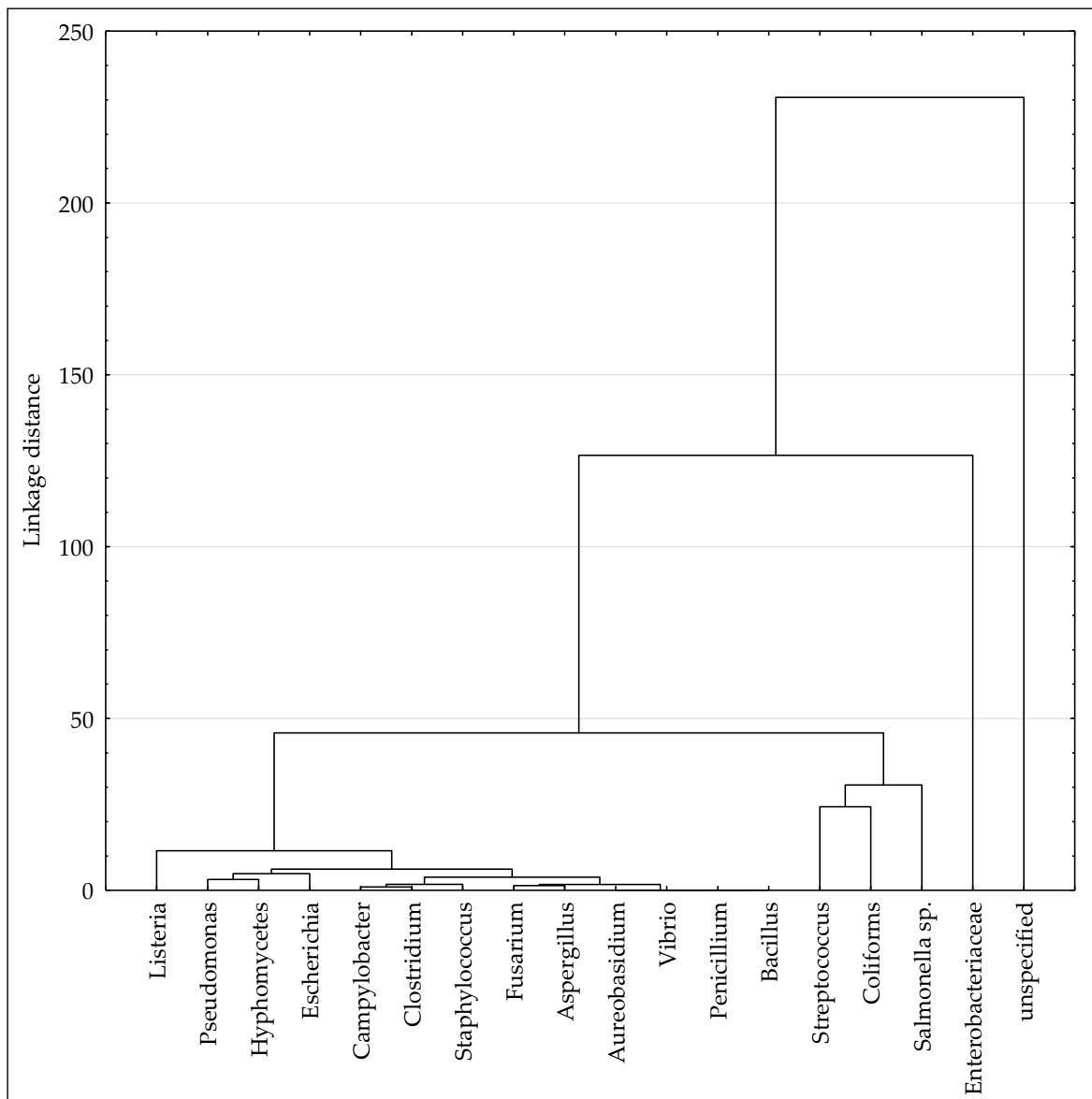
**Figure S37.** Similarities of RASFF notifications on non-pathogenic microorganisms and year within food using joining.



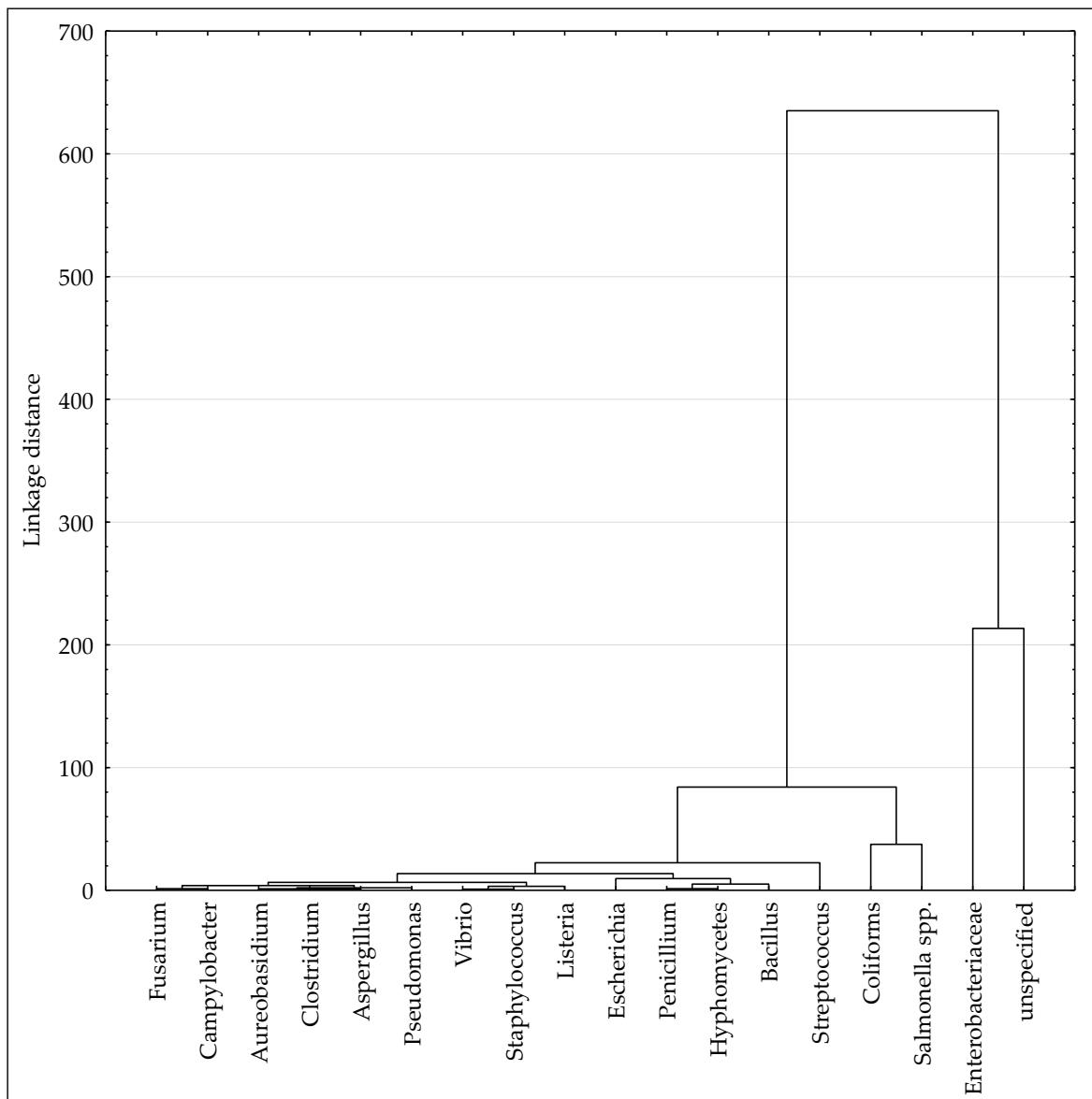
**Figure S38.** Similarities of RASFF notifications on non-pathogenic microorganisms and product category within food using joining.



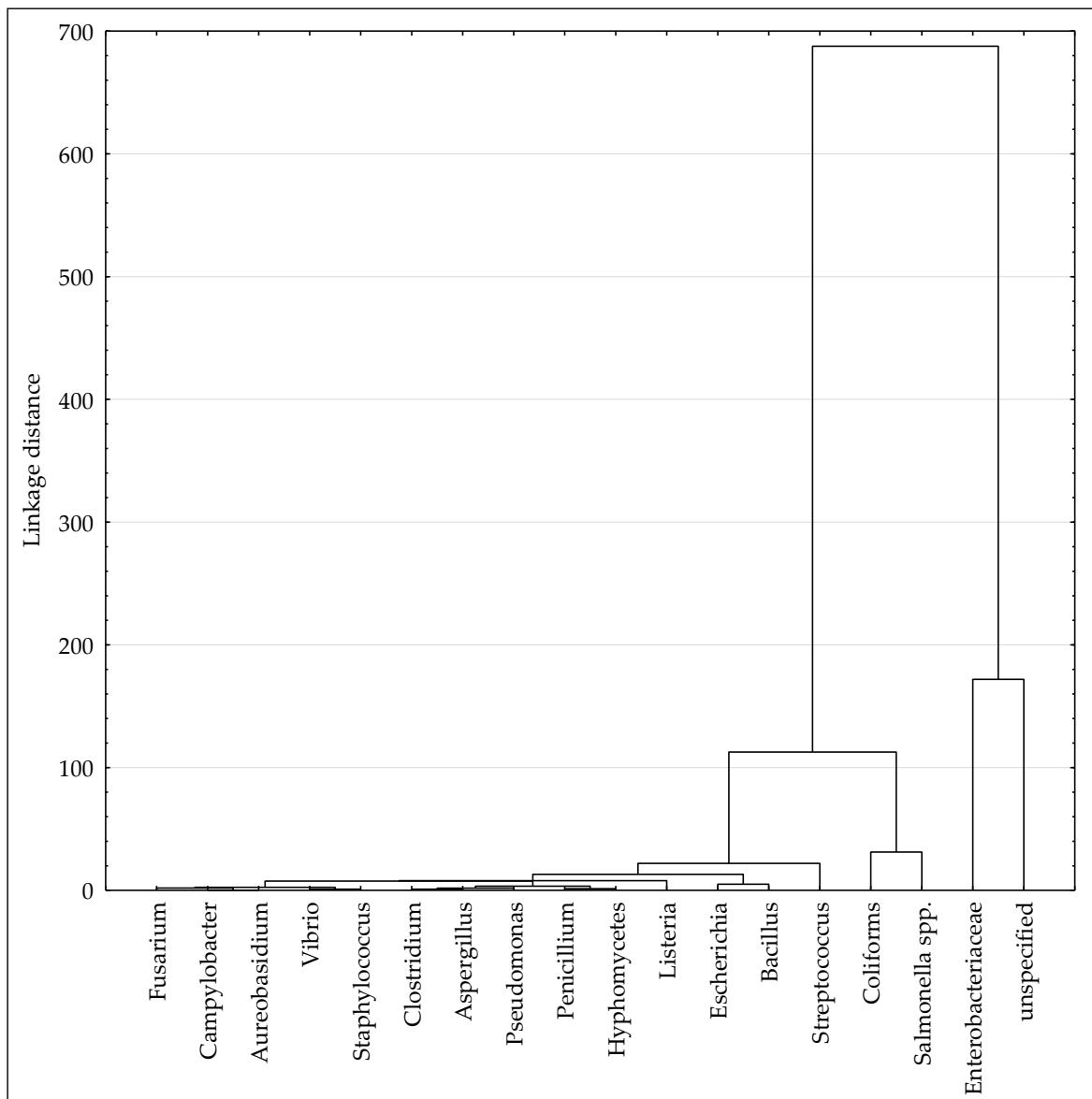
**Figure S39.** Similarities of RASFF notifications on non-pathogenic microorganisms and notifying country within food using joining.



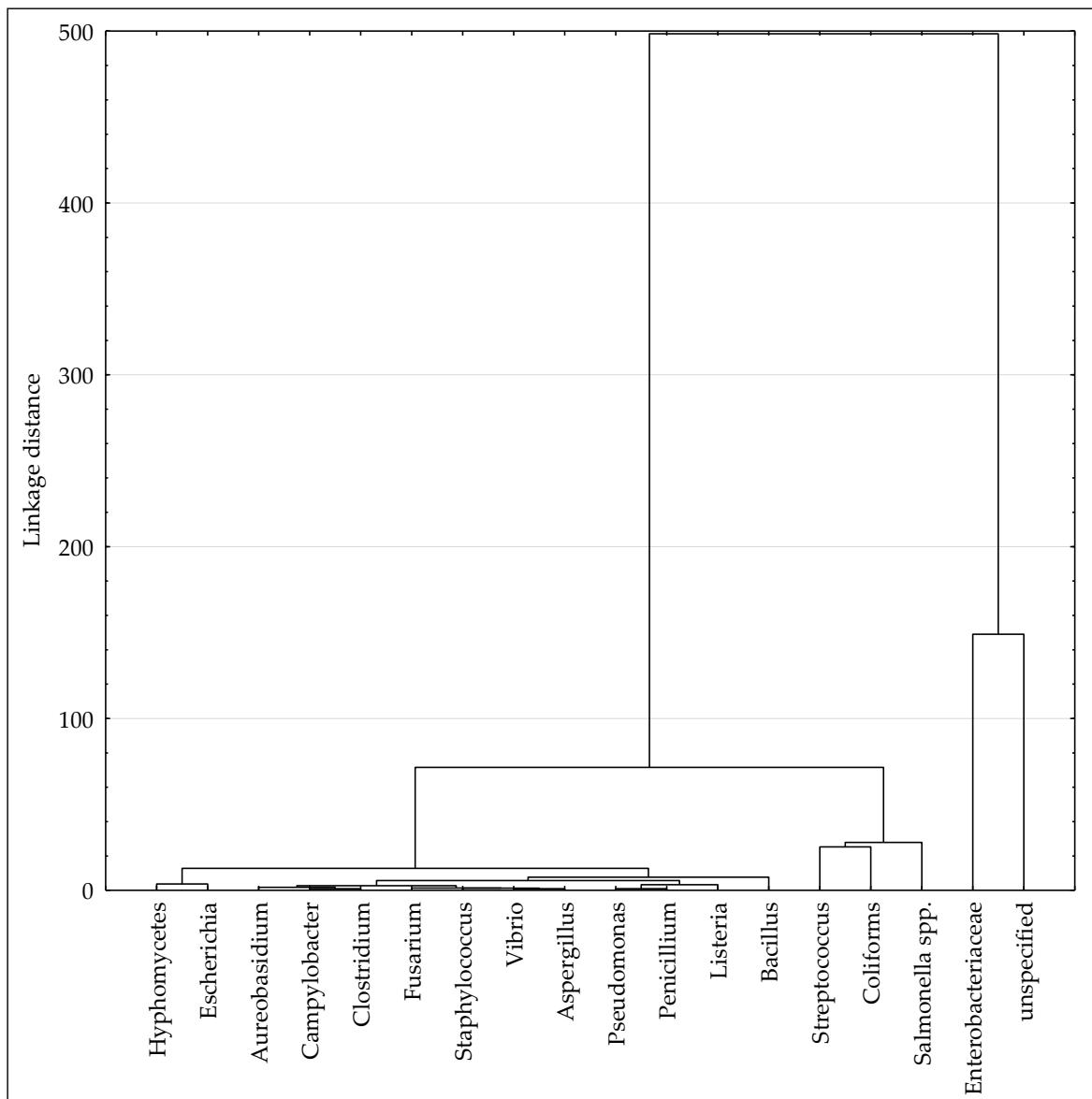
**Figure S40.** Similarities of RASFF notifications on non-pathogenic microorganisms and origin country within food using joining.



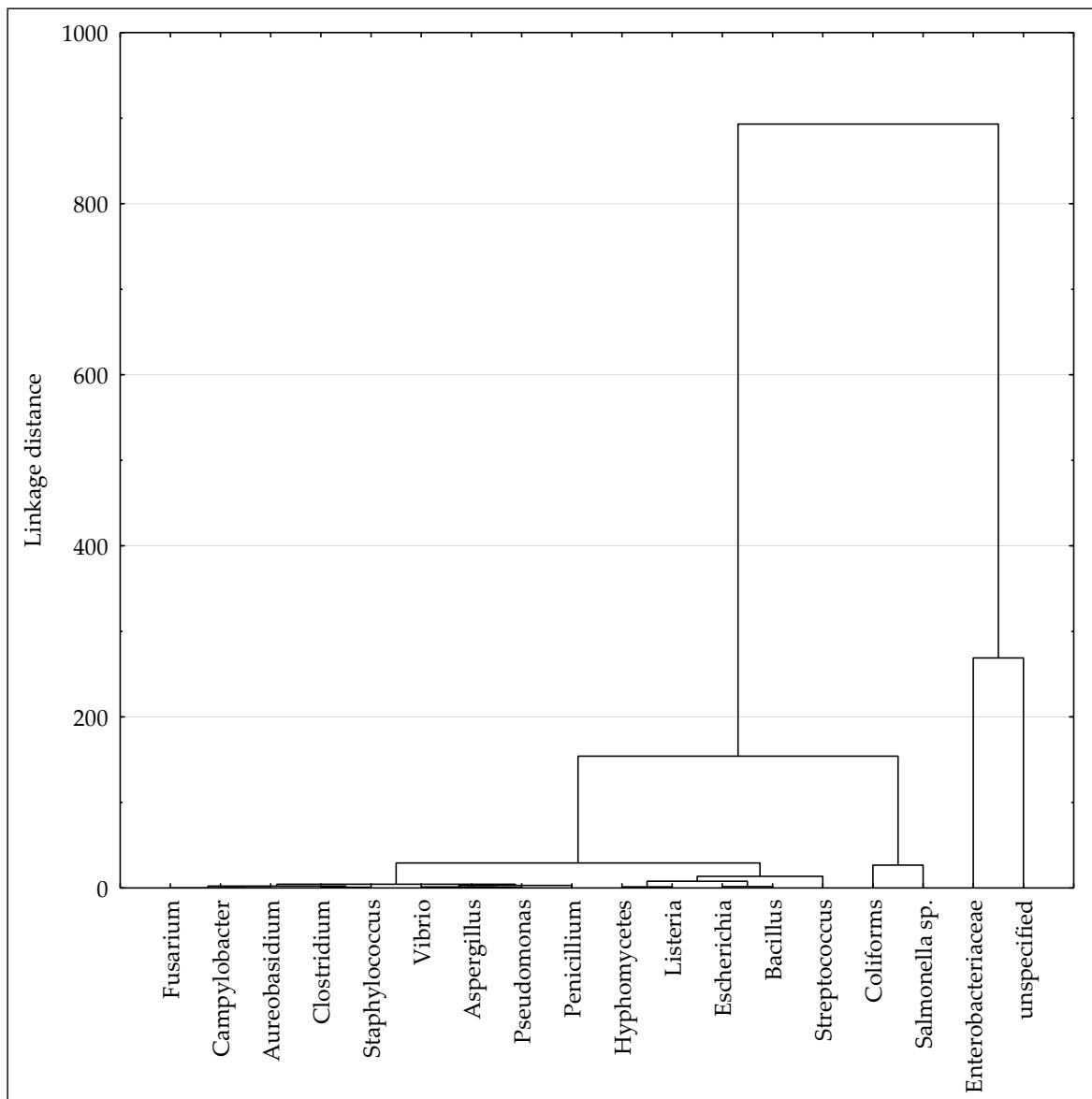
**Figure S41.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification basis within food using joining.



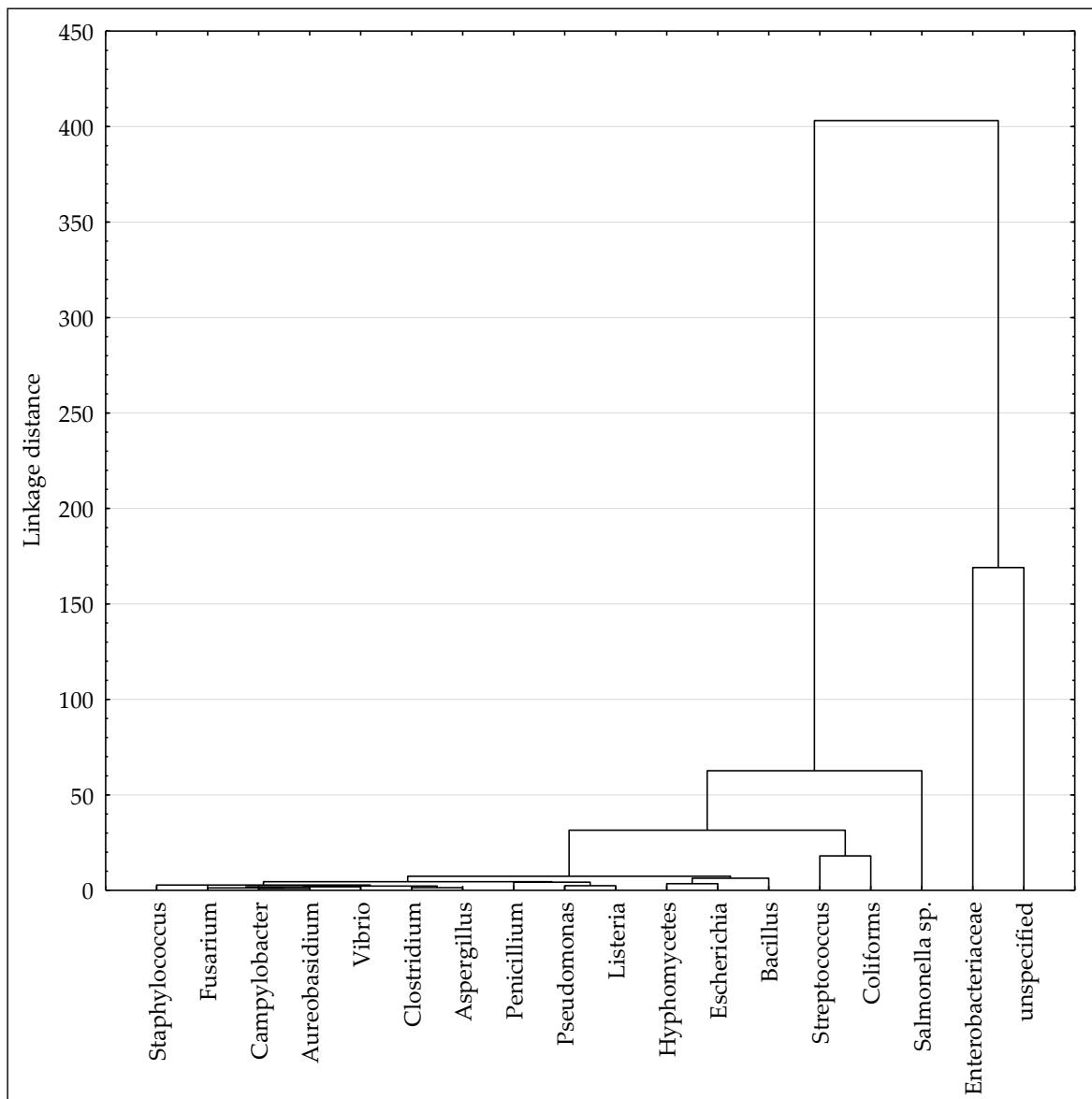
**Figure S42.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification type within food using joining.



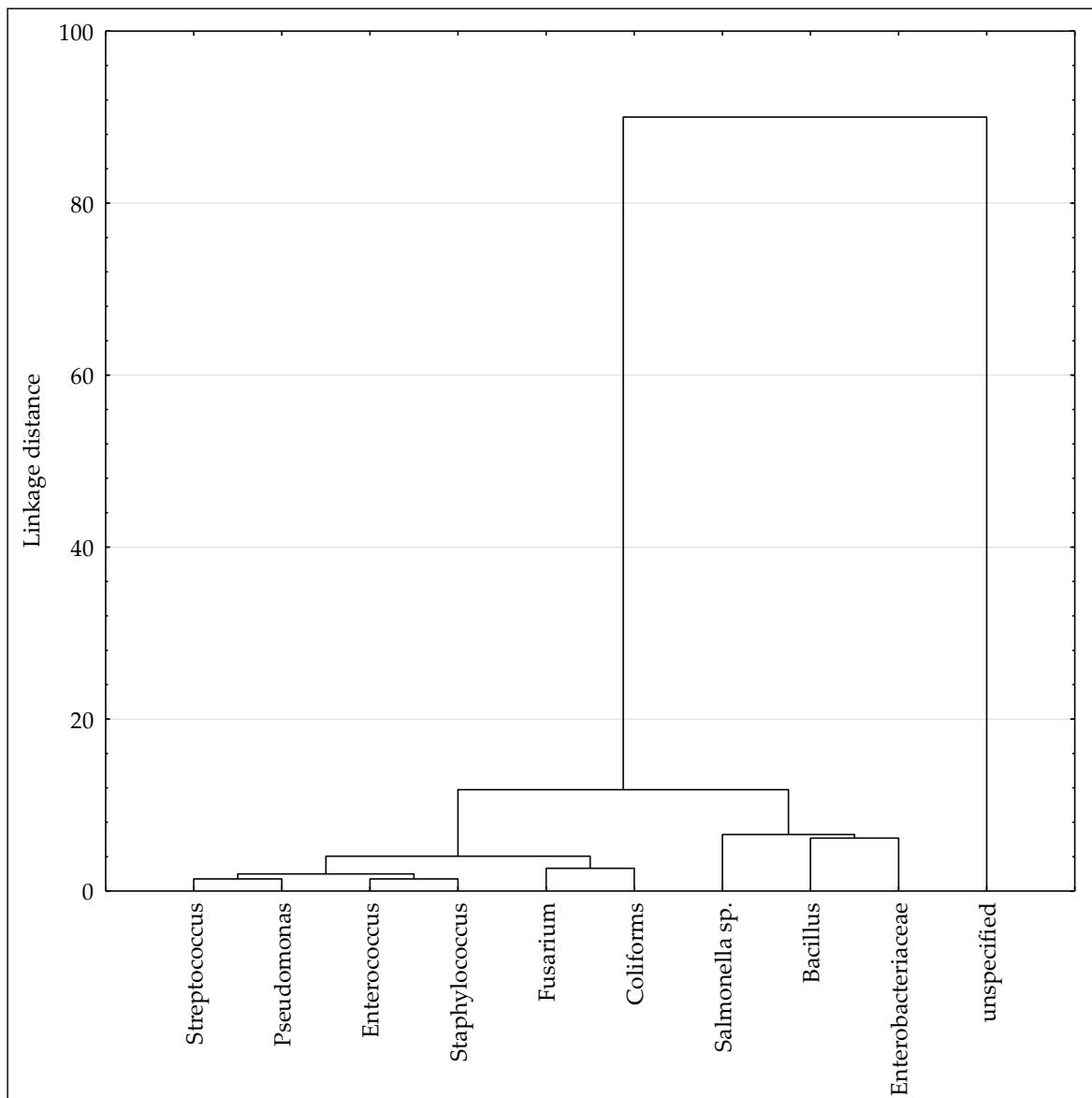
**Figure S43.** Similarities of RASFF notifications on non-pathogenic microorganisms and distribution status within food using joining.



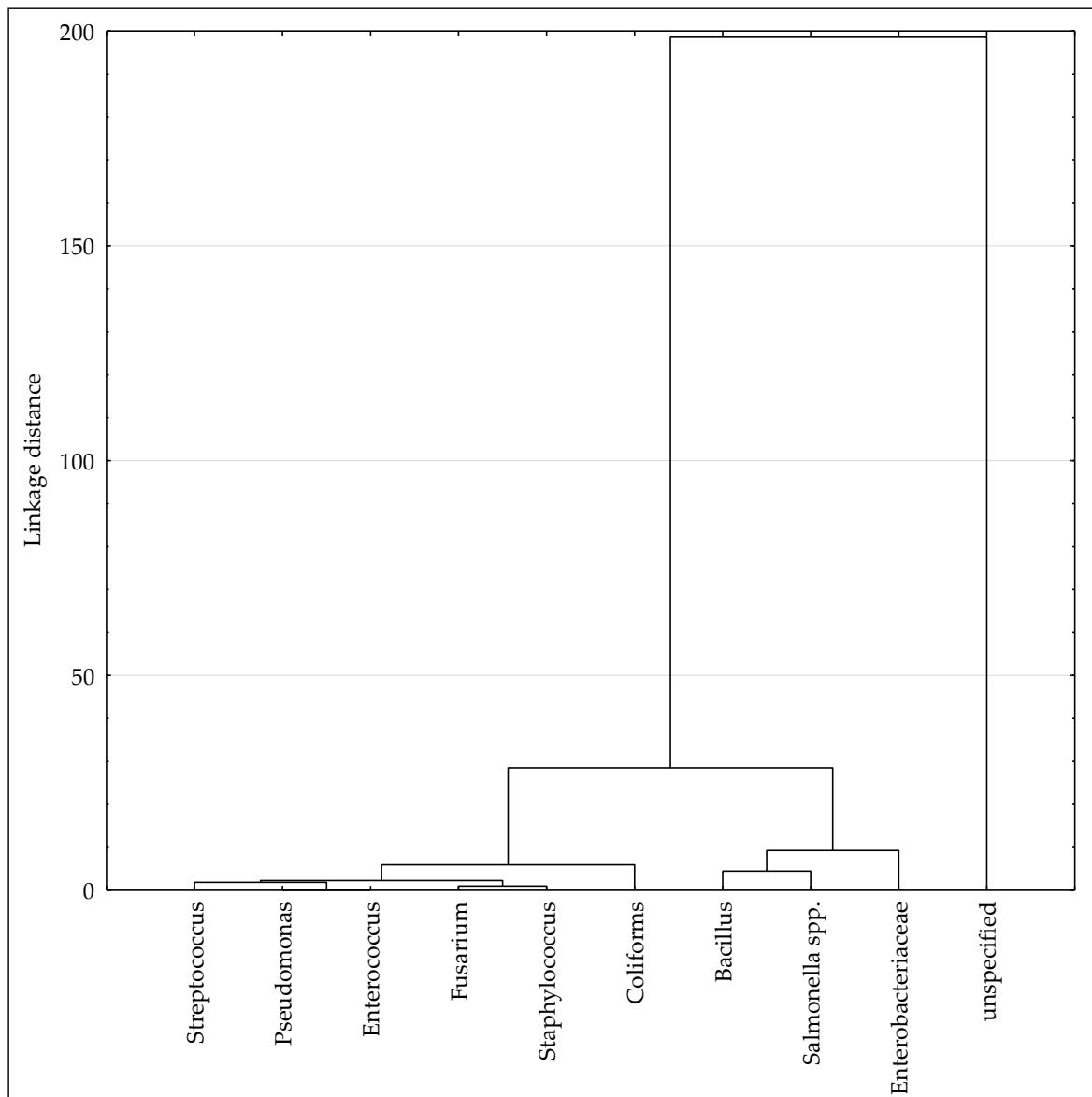
**Figure S44.** Similarities of RASFF notifications on non-pathogenic microorganisms and risk decision within food using joining.



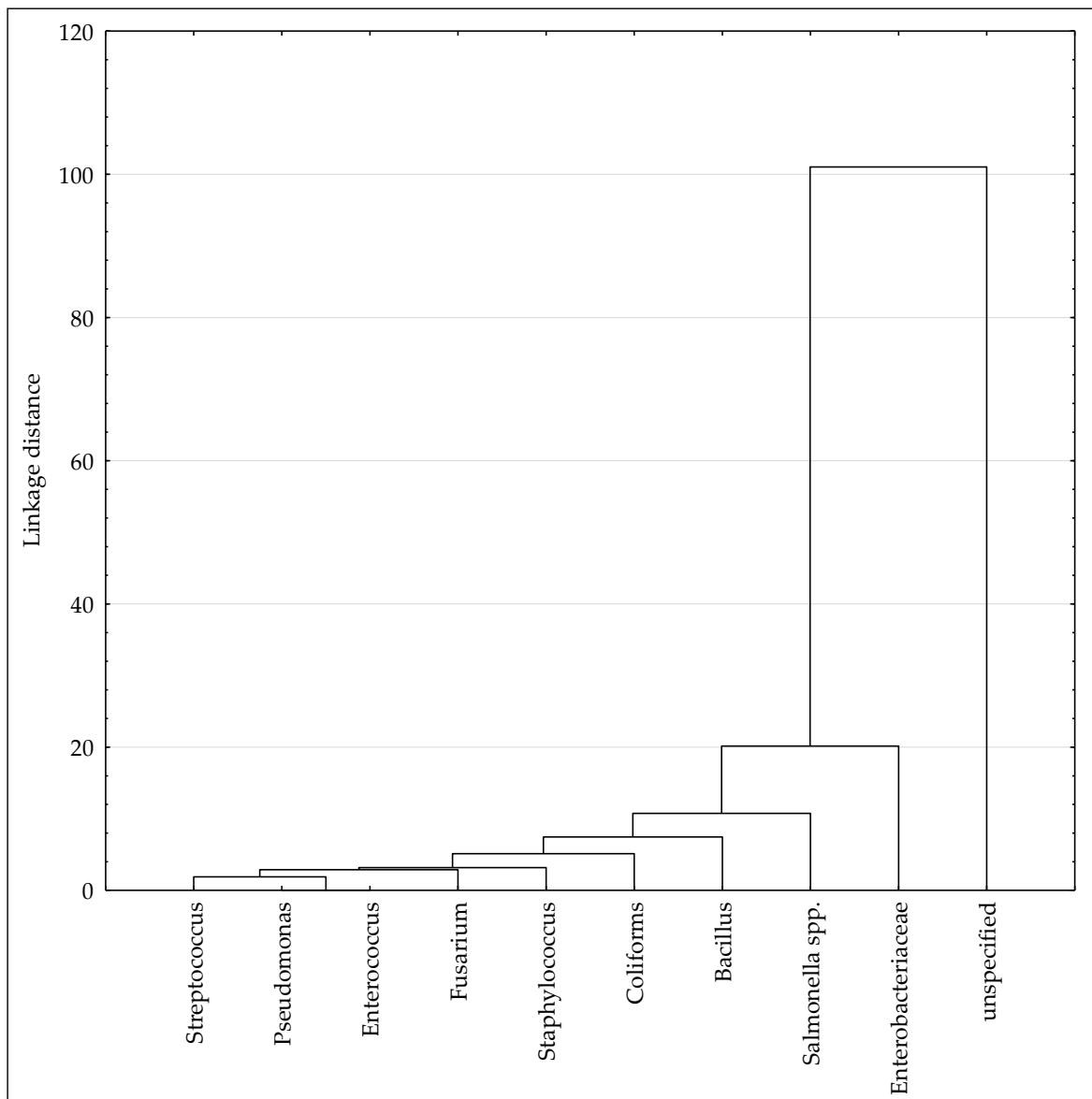
**Figure S45.** Similarities of RASFF notifications on non-pathogenic microorganisms and action taken within food using joining.



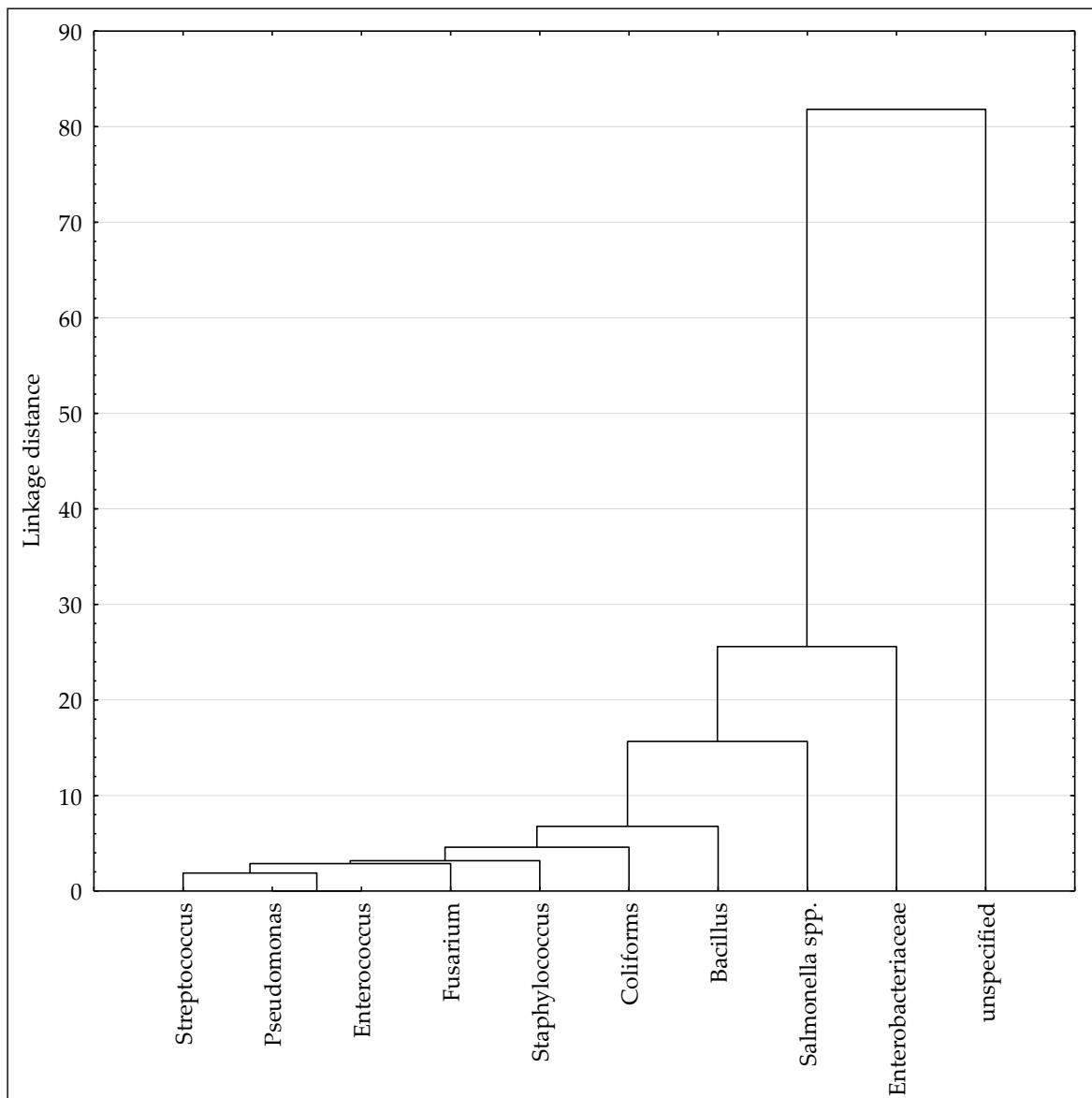
**Figure S46.** Similarities of RASFF notifications on non-pathogenic microorganisms and year within feed using joining.



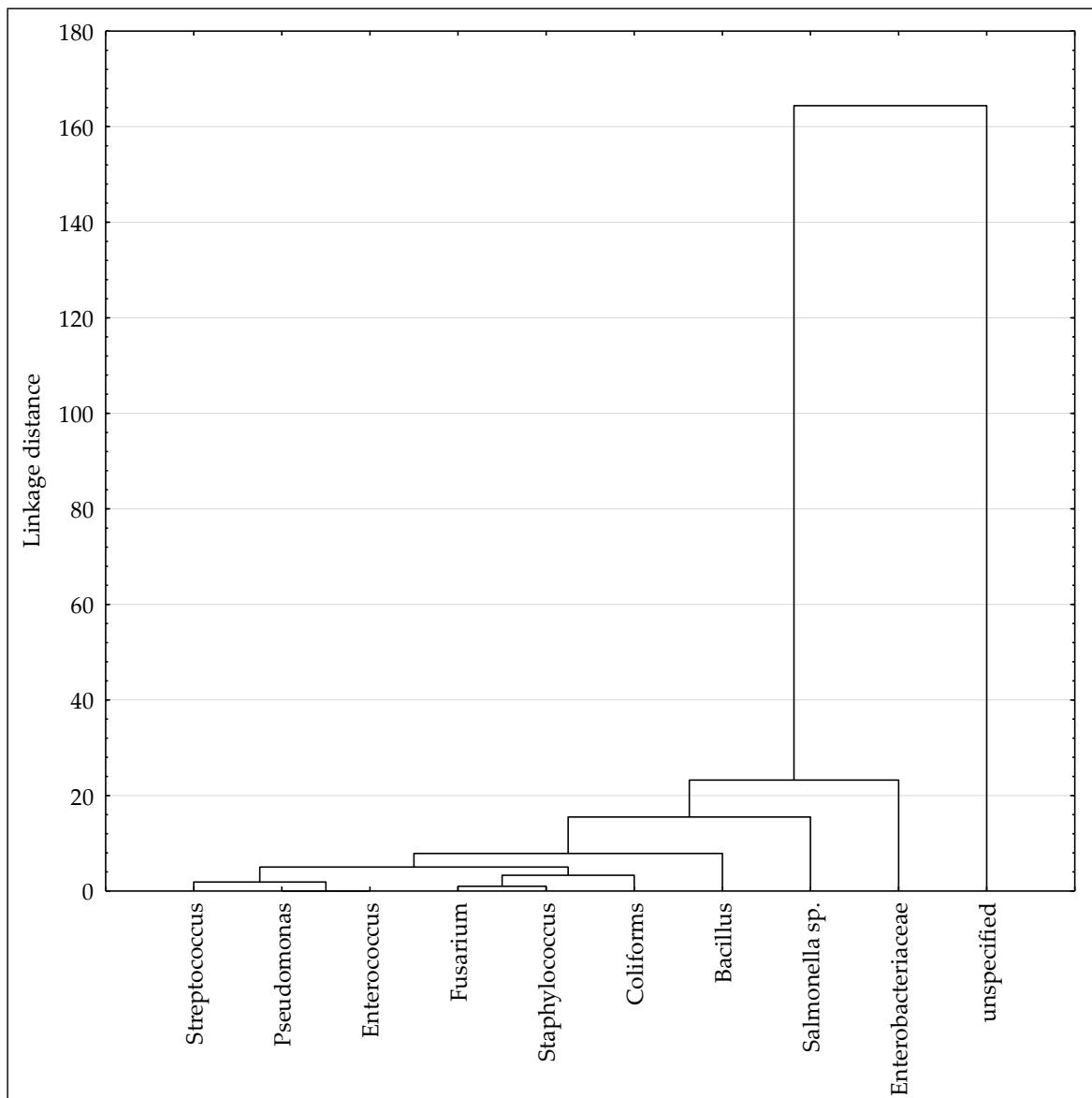
**Figure S47.** Similarities of RASFF notifications on non-pathogenic microorganisms and product category within feed using joining.



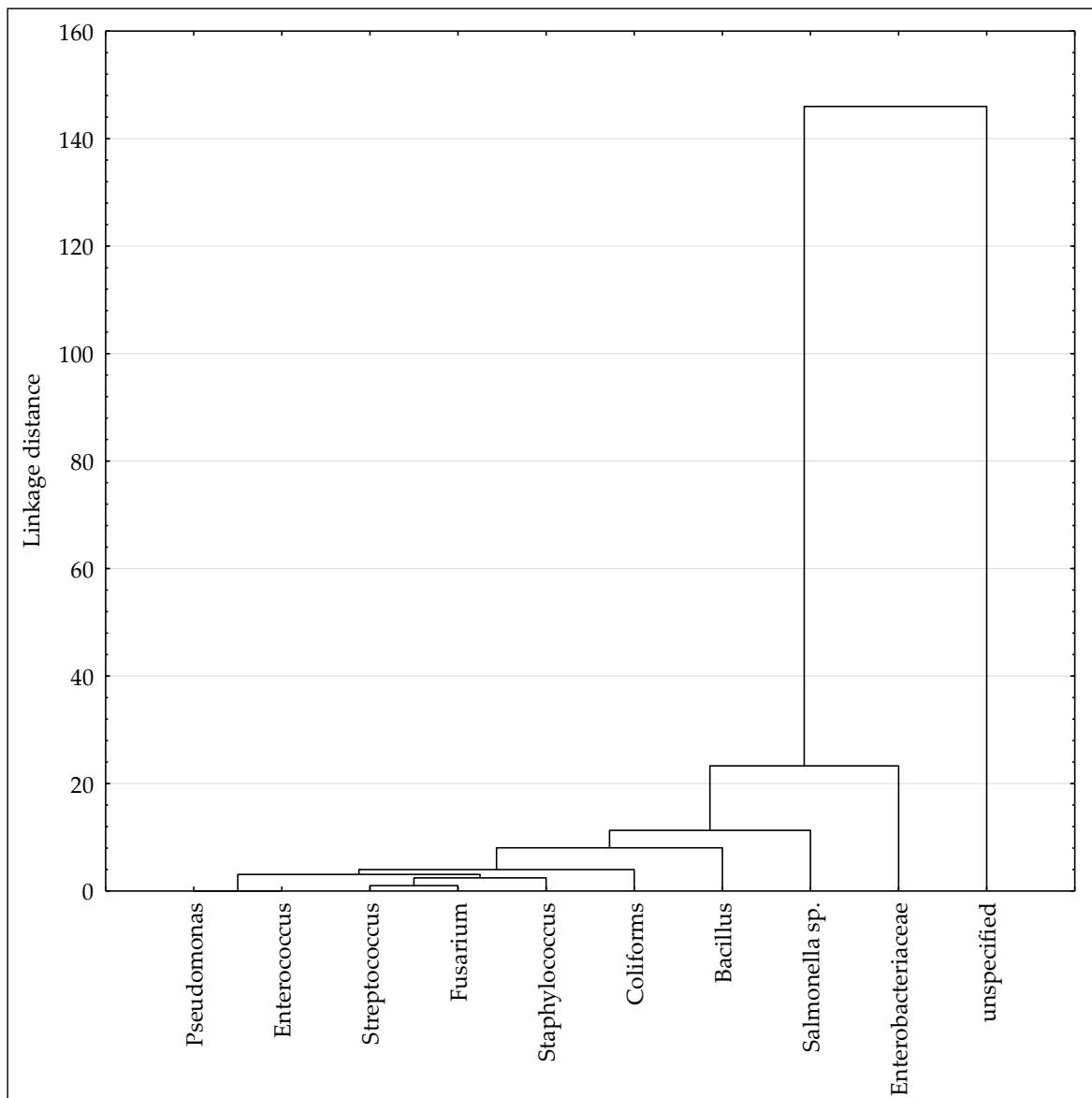
**Figure S48.** Similarities of RASFF notifications on non-pathogenic microorganisms and notifying country within feed using joining.



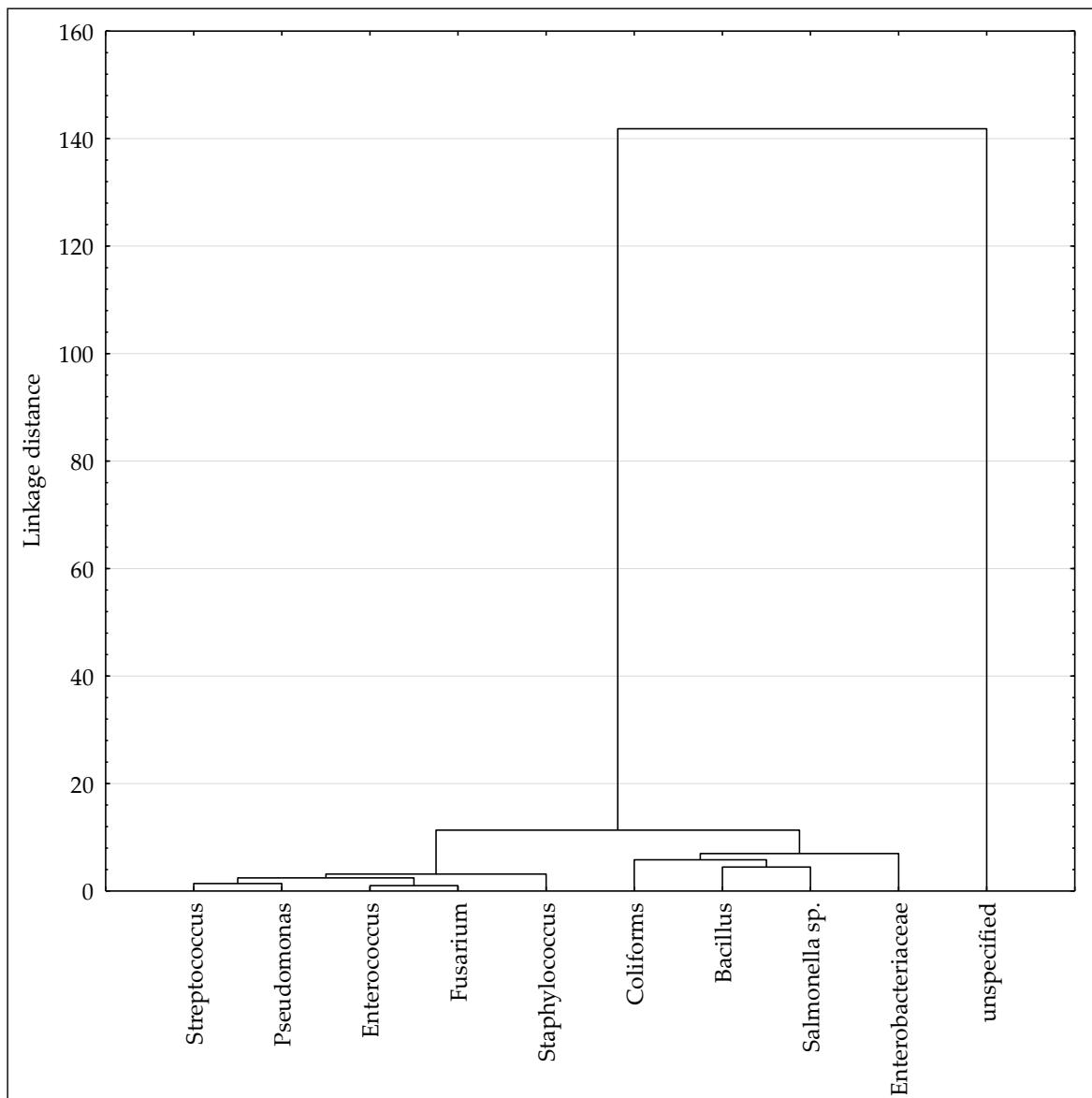
**Figure S49.** Similarities of RASFF notifications on non-pathogenic microorganisms and origin country within feed using joining.



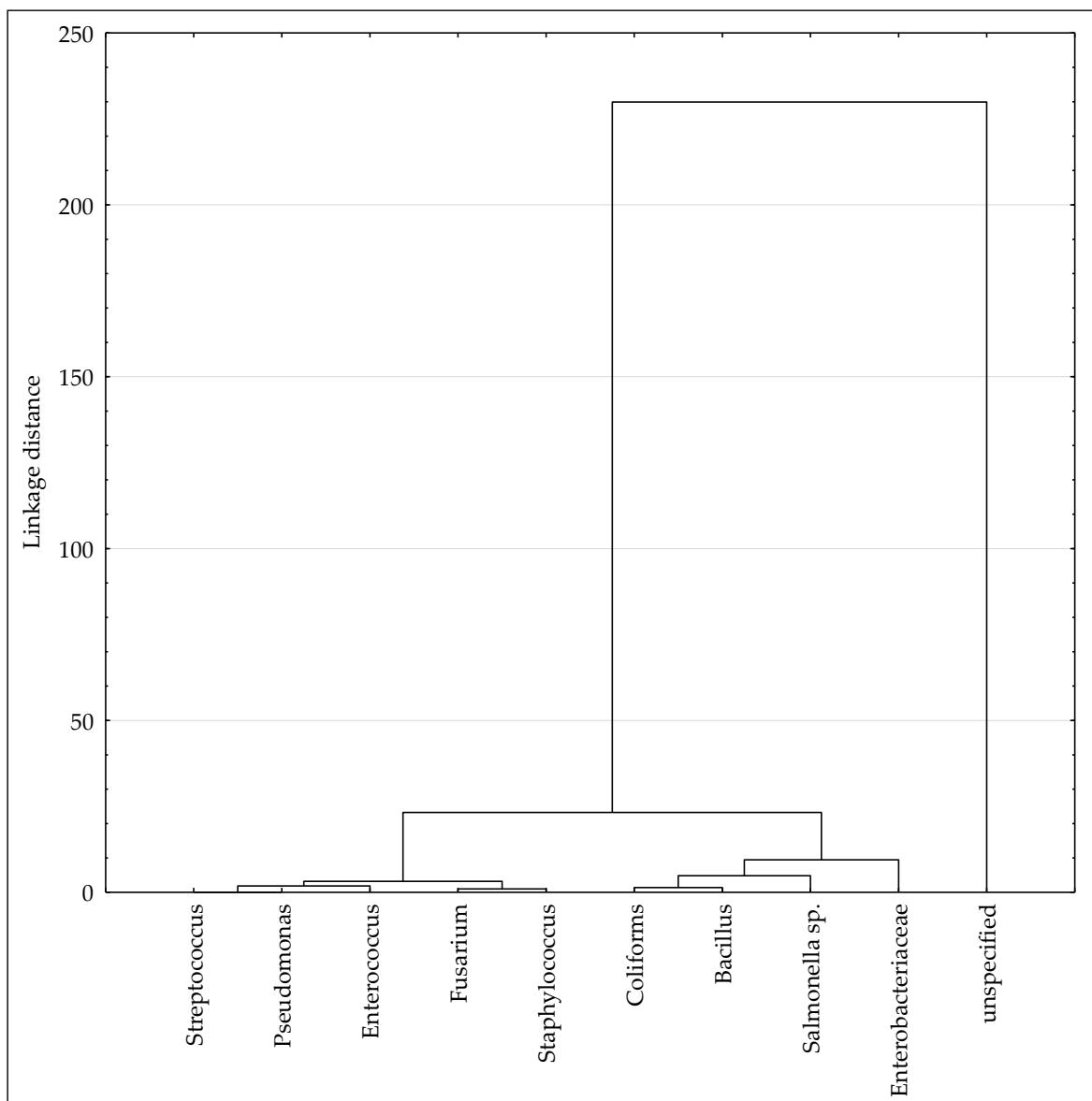
**Figure S50.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification basis within feed using joining.



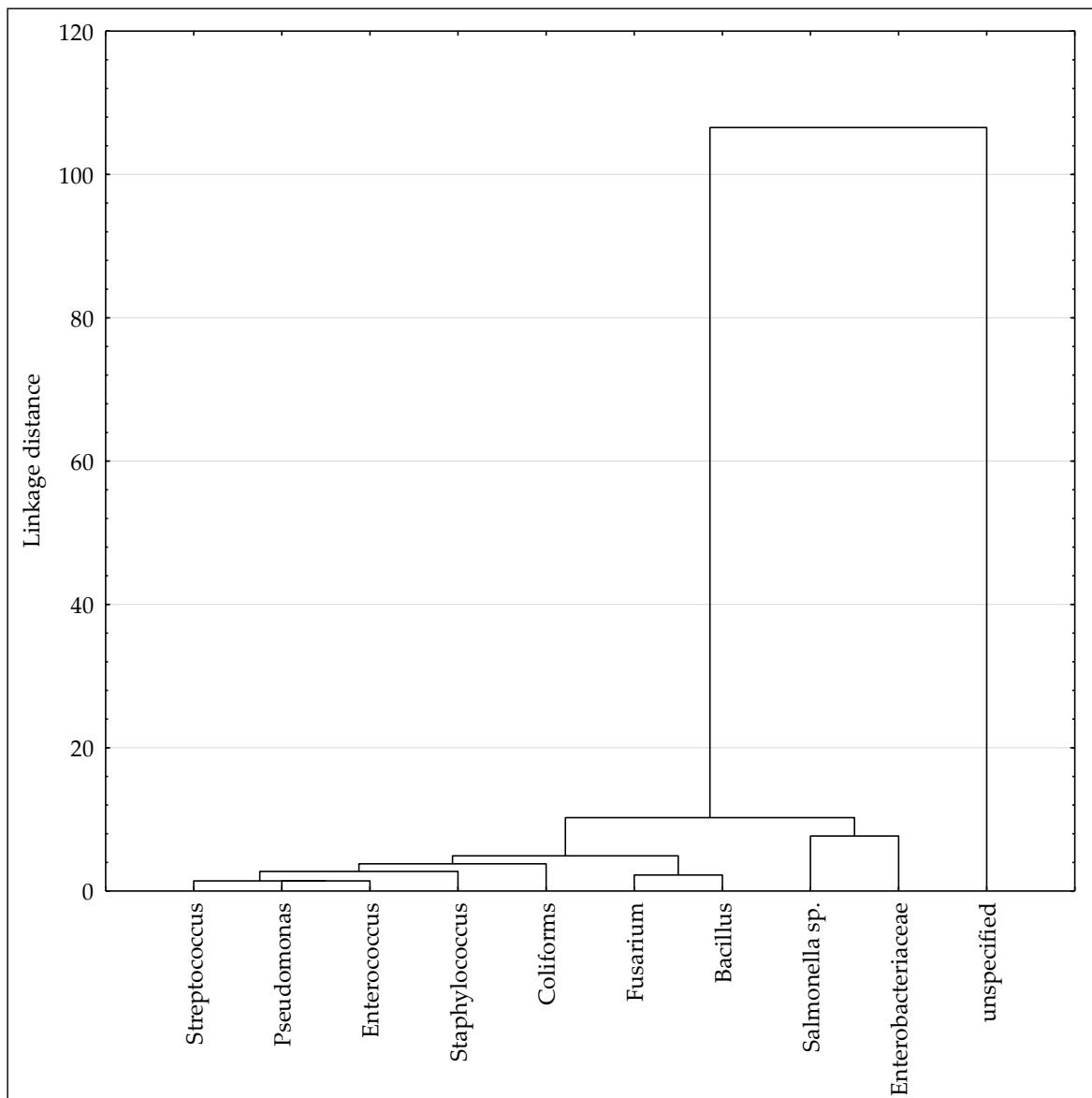
**Figure S51.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification type within feed using joining.



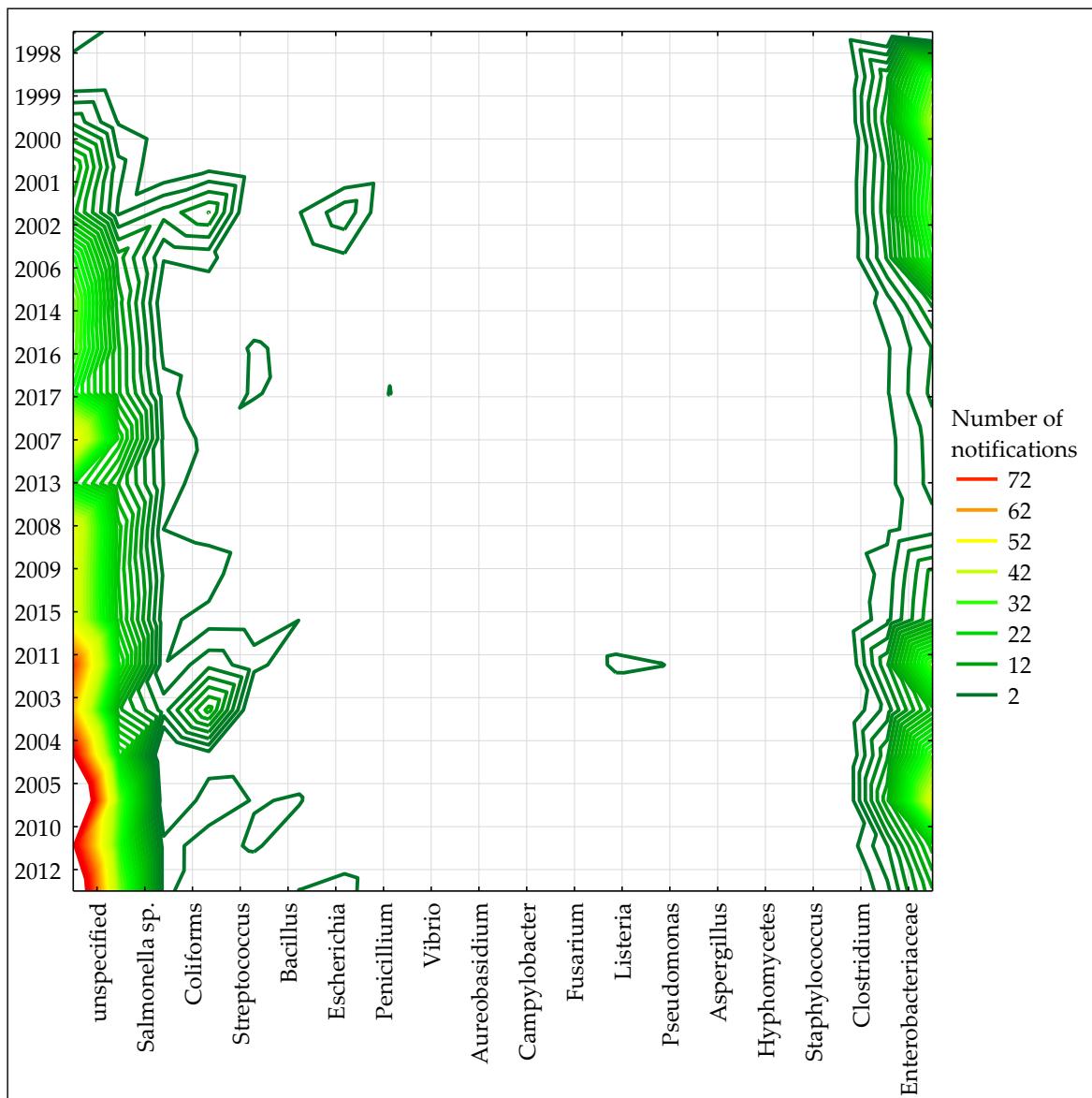
**Figure S52.** Similarities of RASFF notifications on non-pathogenic microorganisms and distribution status within feed using joining.



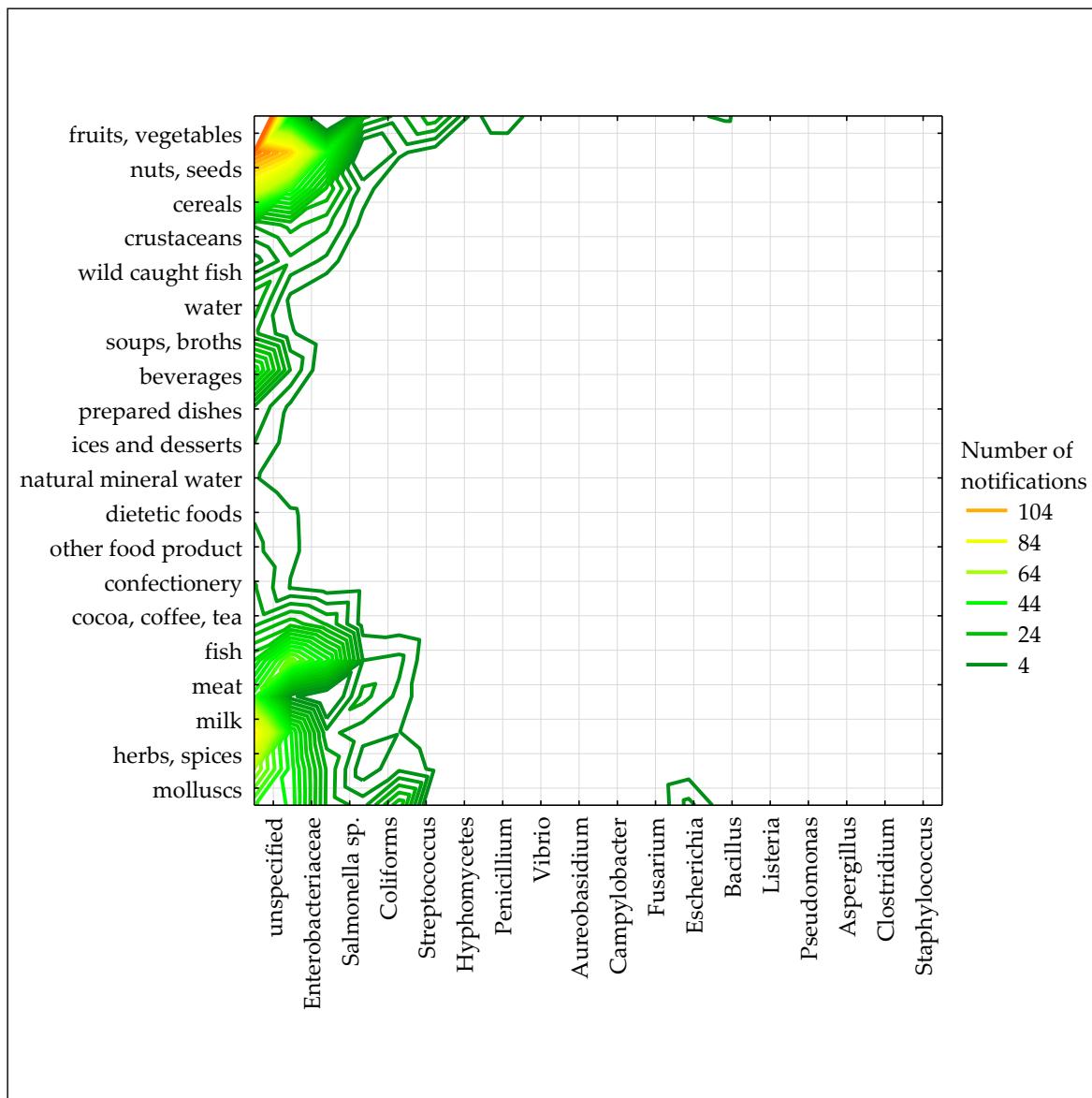
**Figure S53.** Similarities of RASFF notifications on non-pathogenic microorganisms and risk decision within feed using joining.



**Figure S54.** Similarities of RASFF notifications on non-pathogenic microorganisms and action taken within feed using joining.



**Figure S55.** Similarities of RASFF notifications on non-pathogenic microorganisms and year within food using two-way joining.



**Figure S56.** Similarities of RASFF notifications on non-pathogenic microorganisms and product category within food using two-way joining.

beverages – non-alcoholic beverages

cereals – cereals and bakery products

cocoa, coffee, tea – cocoa and cocoa preparations, coffee and tea

crustaceans – crustaceans and products thereof

dietetic foods – dietetic foods, food supplements, fortified foods

fish – fish and fish products

herbs, spices – herbs and spices

meat – meat and meat products (other than poultry)

milk – milk and milk products

molluscs – molluscs and products thereof - (obsolete)

nuts, seeds – nuts, nut products and seeds

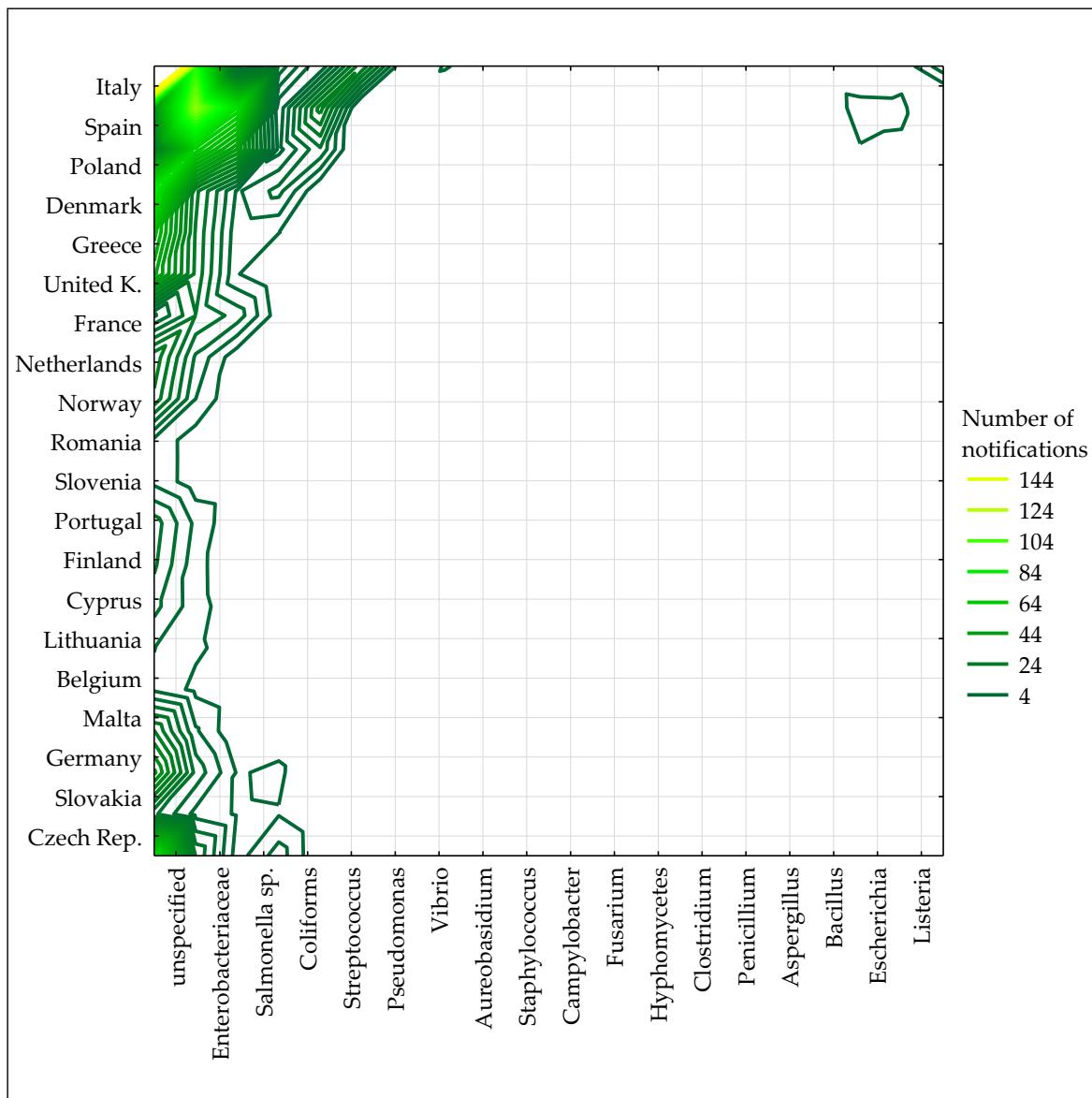
other food product – other food product / mixed

prepared dishes – prepared dishes and snacks

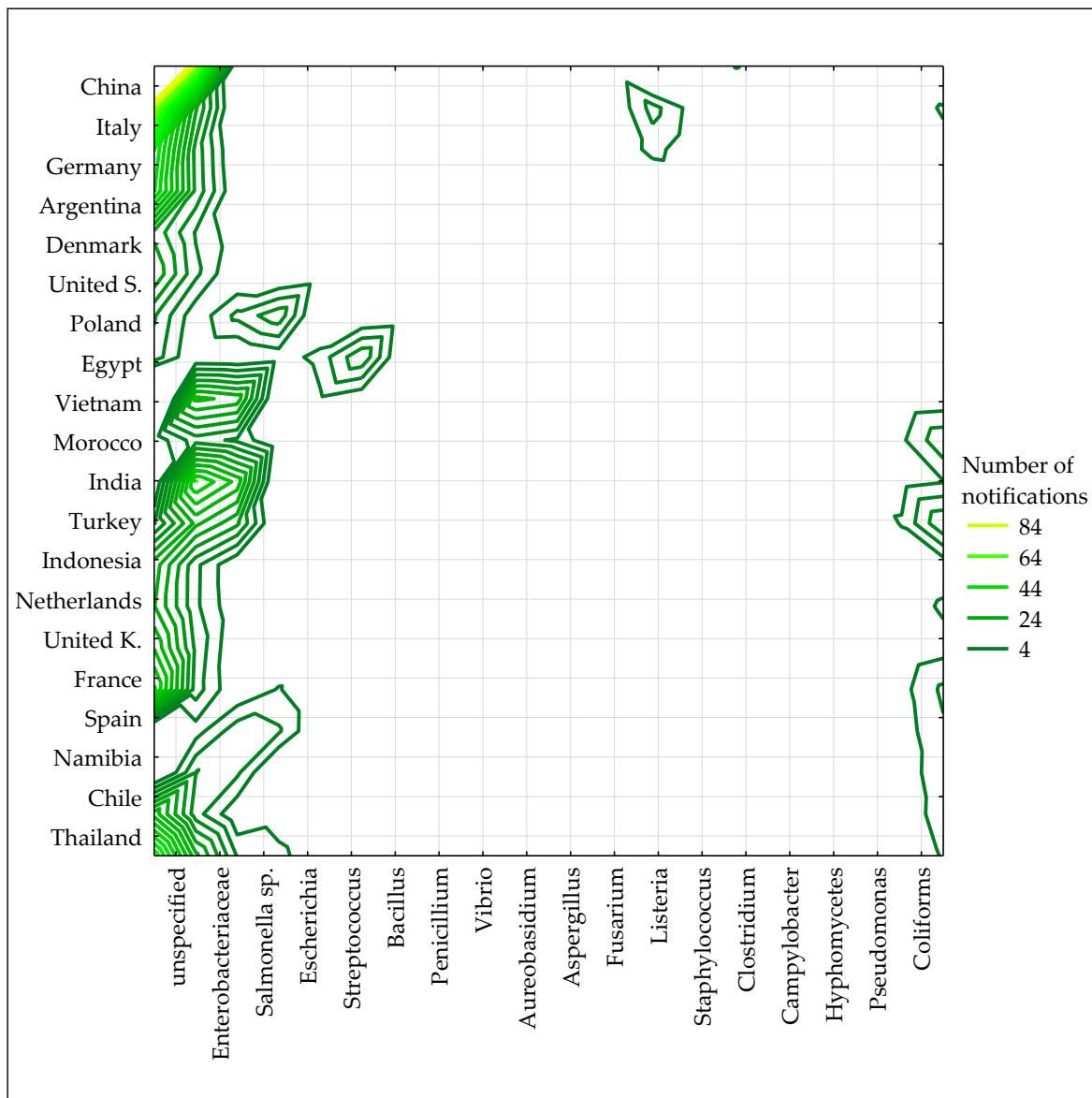
soups, broths – soups, broths, sauces and condiments

water – water for human consumption (other)

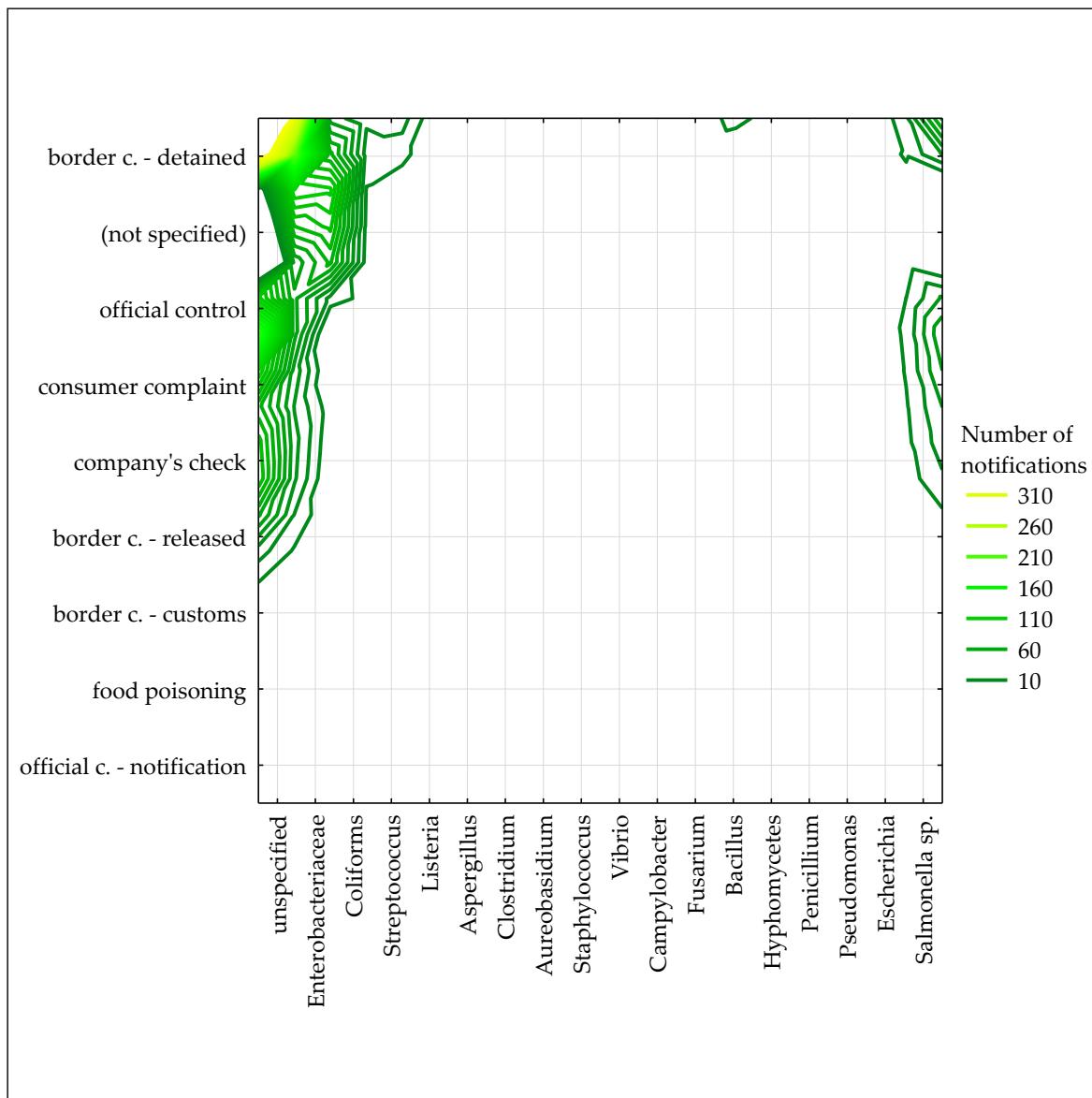
wild caught fish – wild caught fish and products thereof (other than crustaceans and molluscs) - (obsolete)



**Figure S57.** Similarities of RASFF notifications on non-pathogenic microorganisms and notifying country within food using two-way joining.

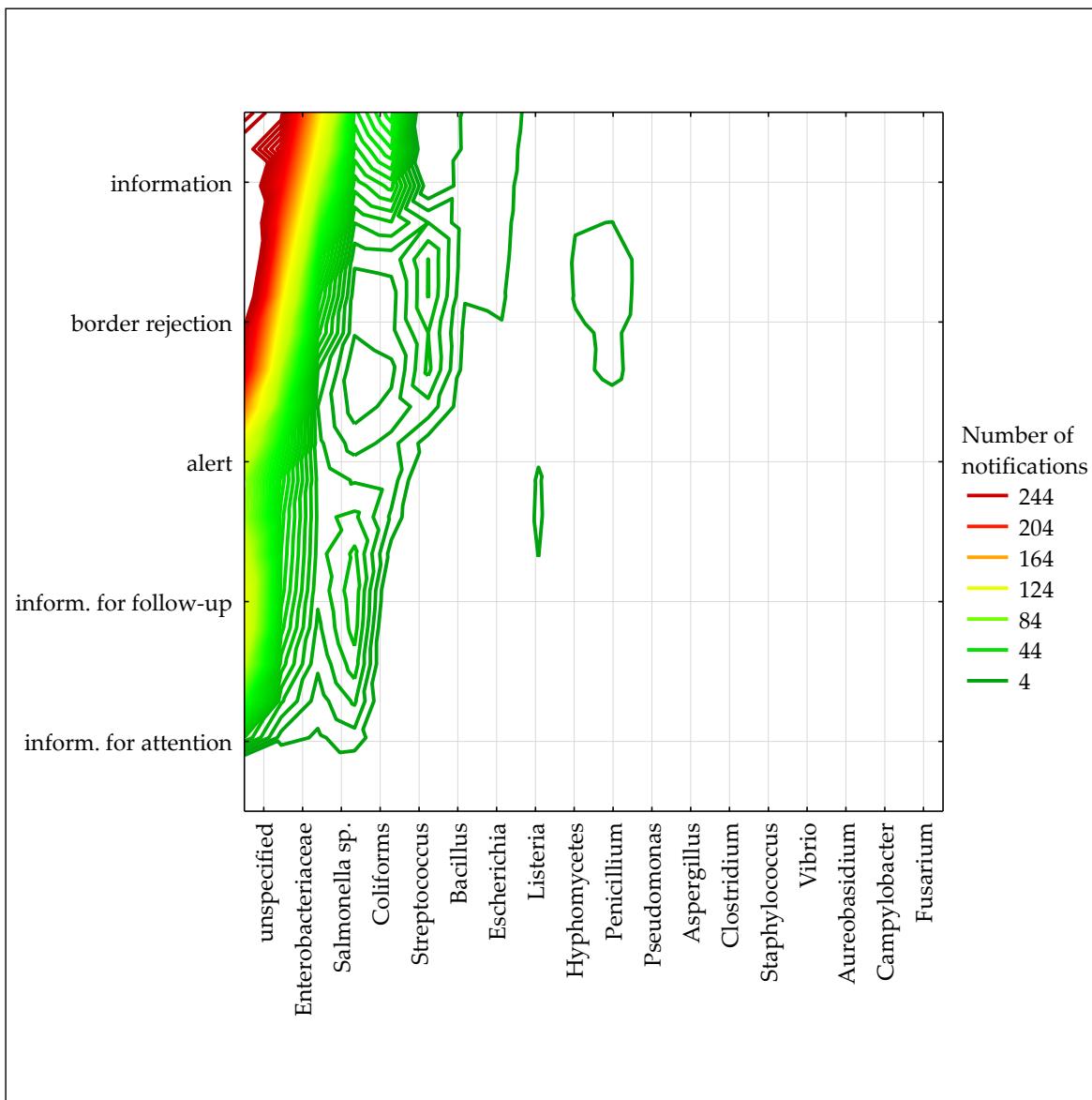


**Figure S58.** Similarities of RASFF notifications on non-pathogenic microorganisms and origin country within food using two-way joining.



**Figure S59.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification basis within food using two-way joining.

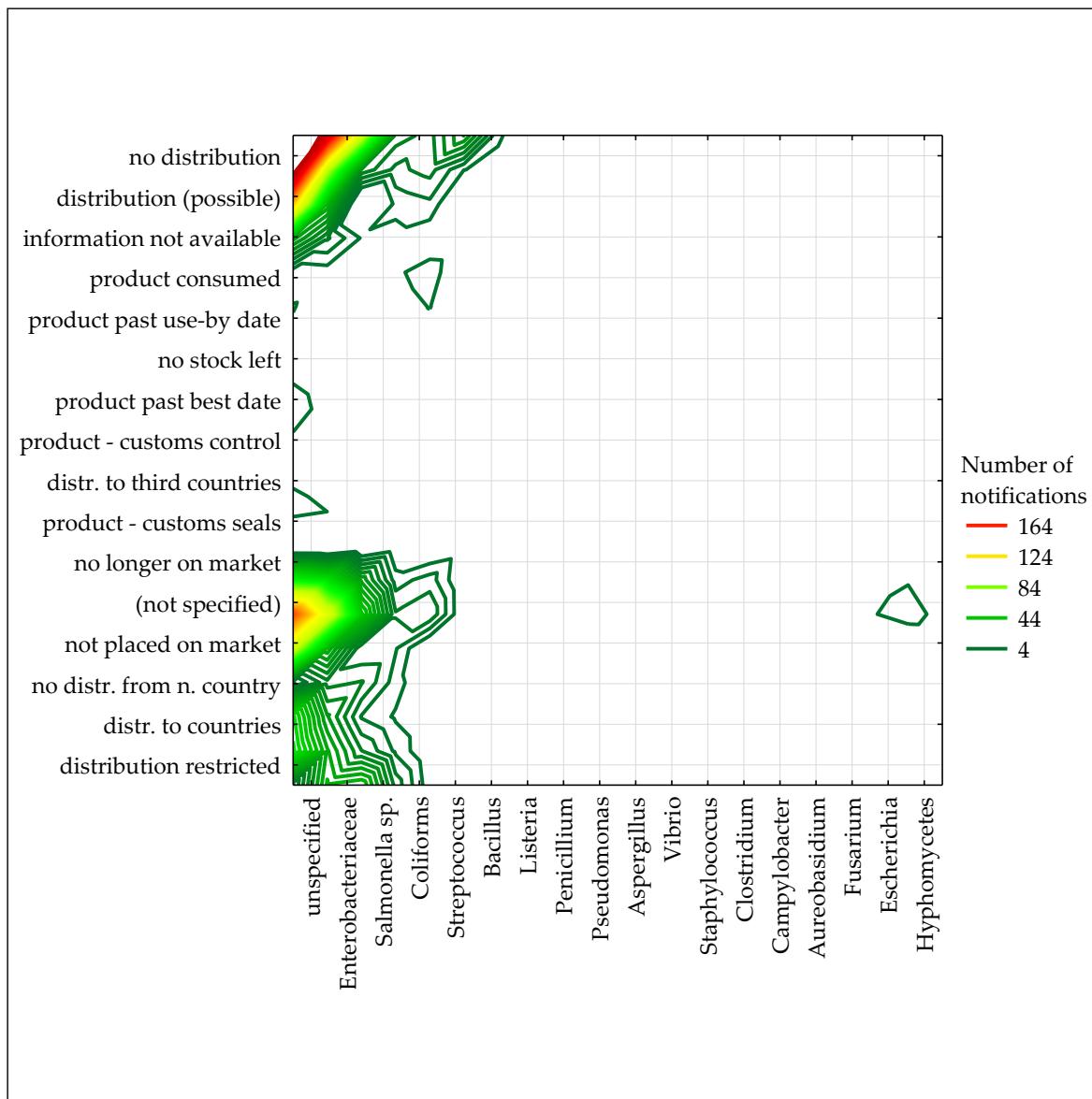
border c. - customs – border control - consignment under customs  
 border c. - detained – border control - consignment detained  
 border c. - released – border control - consignment released  
 company's check – company's own check  
 official c. - notification – official control following RASFF notification  
 official control – official control on the market



**Figure S60.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification type within food using two-way joining.

inform. for attention – information for attention

inform. for follow-up – information for follow-up



**Figure S61.** Similarities of RASFF notifications on non-pathogenic microorganisms and distribution status within food using two-way joining.

distr. to countries – distribution to other member countries

distr. to third countries – distribution to third countries

distribution (possible) – distribution on the market (possible)

distribution restricted – distribution restricted to notifying country

information not available – information on distribution not (yet) available

no distr. from n. country – no distribution from notifying country

no longer on market – product (presumably) no longer on the market

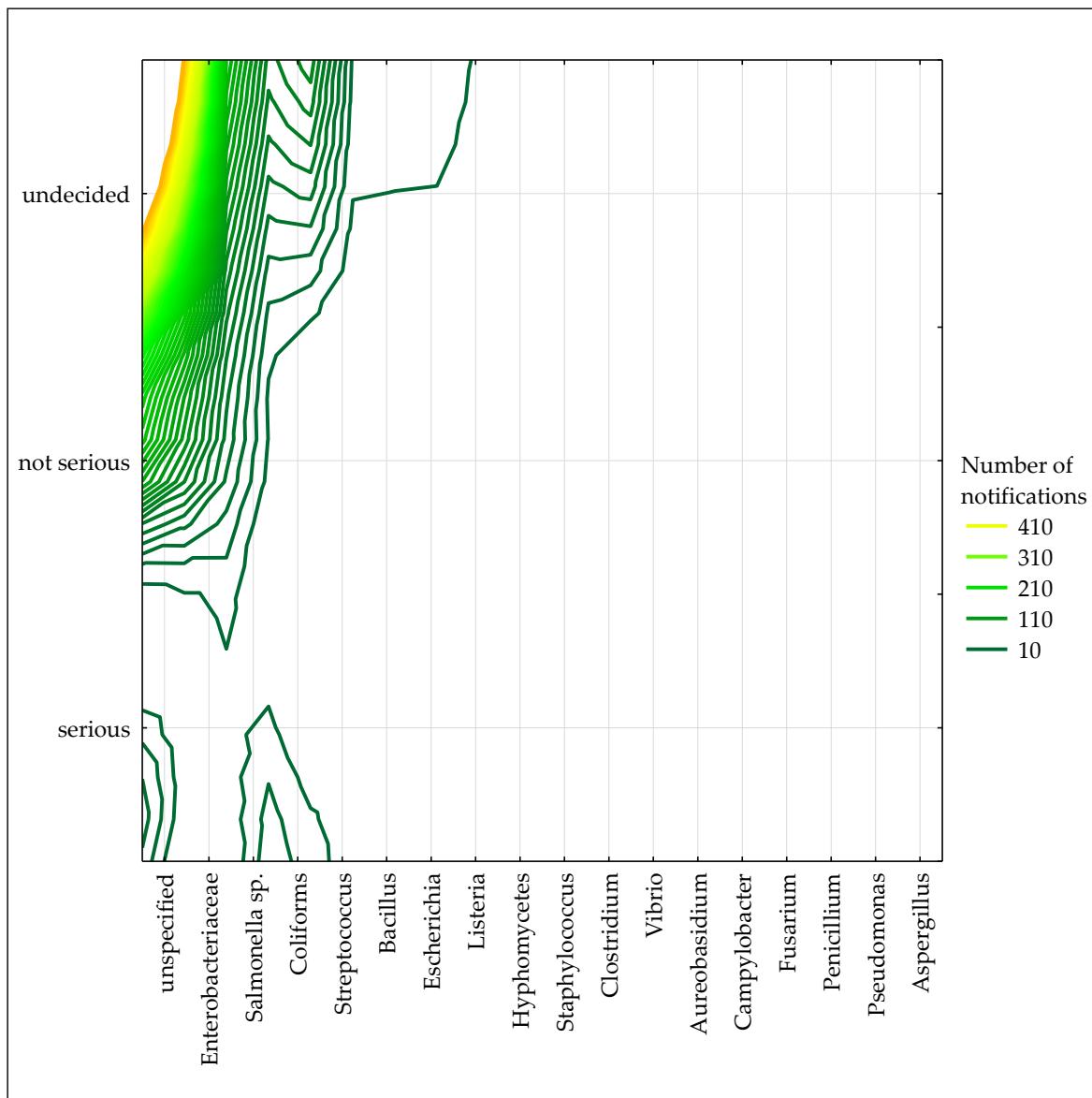
not placed on market – product not (yet) placed on the market

product - customs control – product under customs control

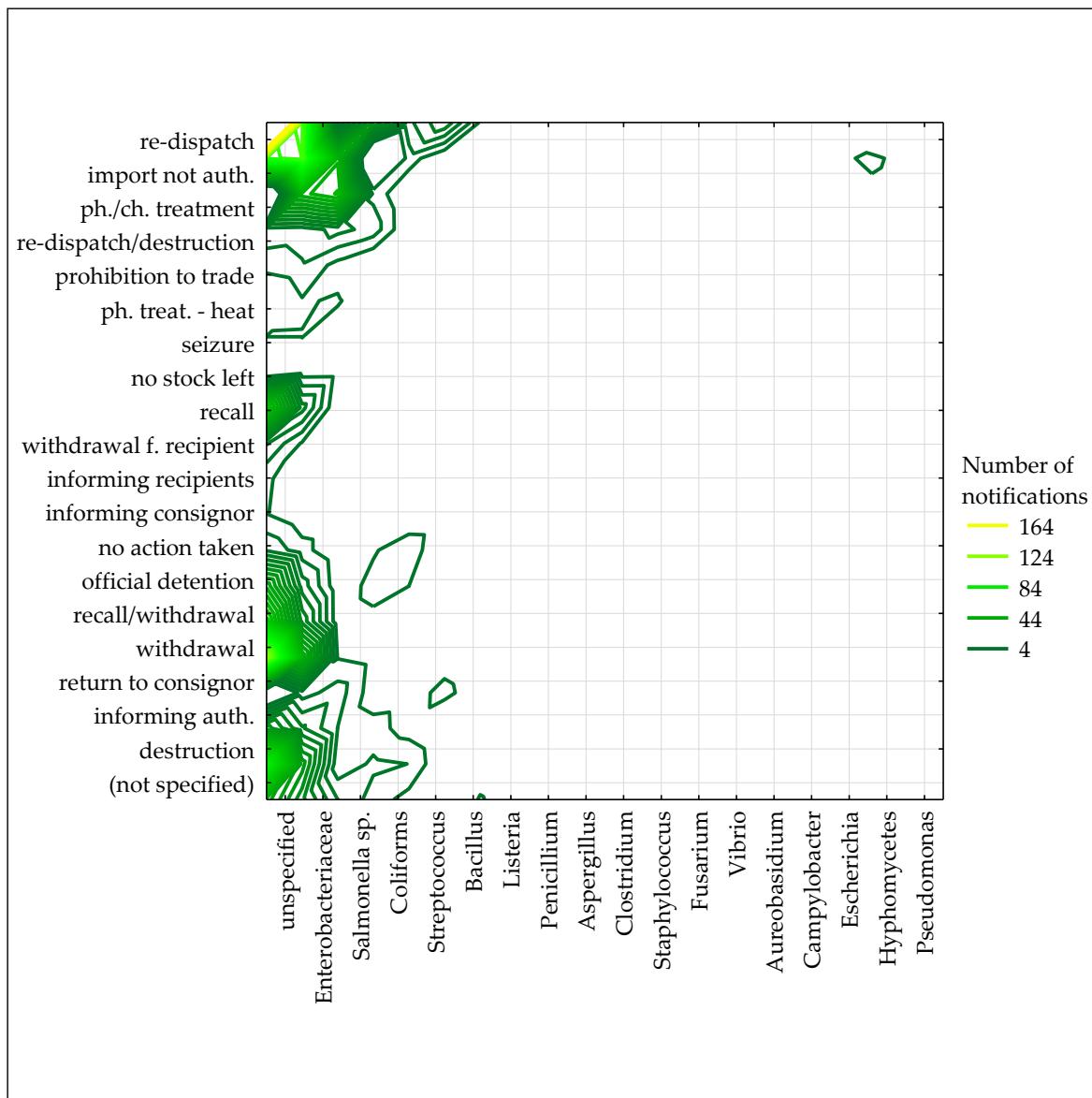
product - customs seals – product allowed to travel to destination under customs seals

product consumed – product already consumed

product past best date – product past best before date

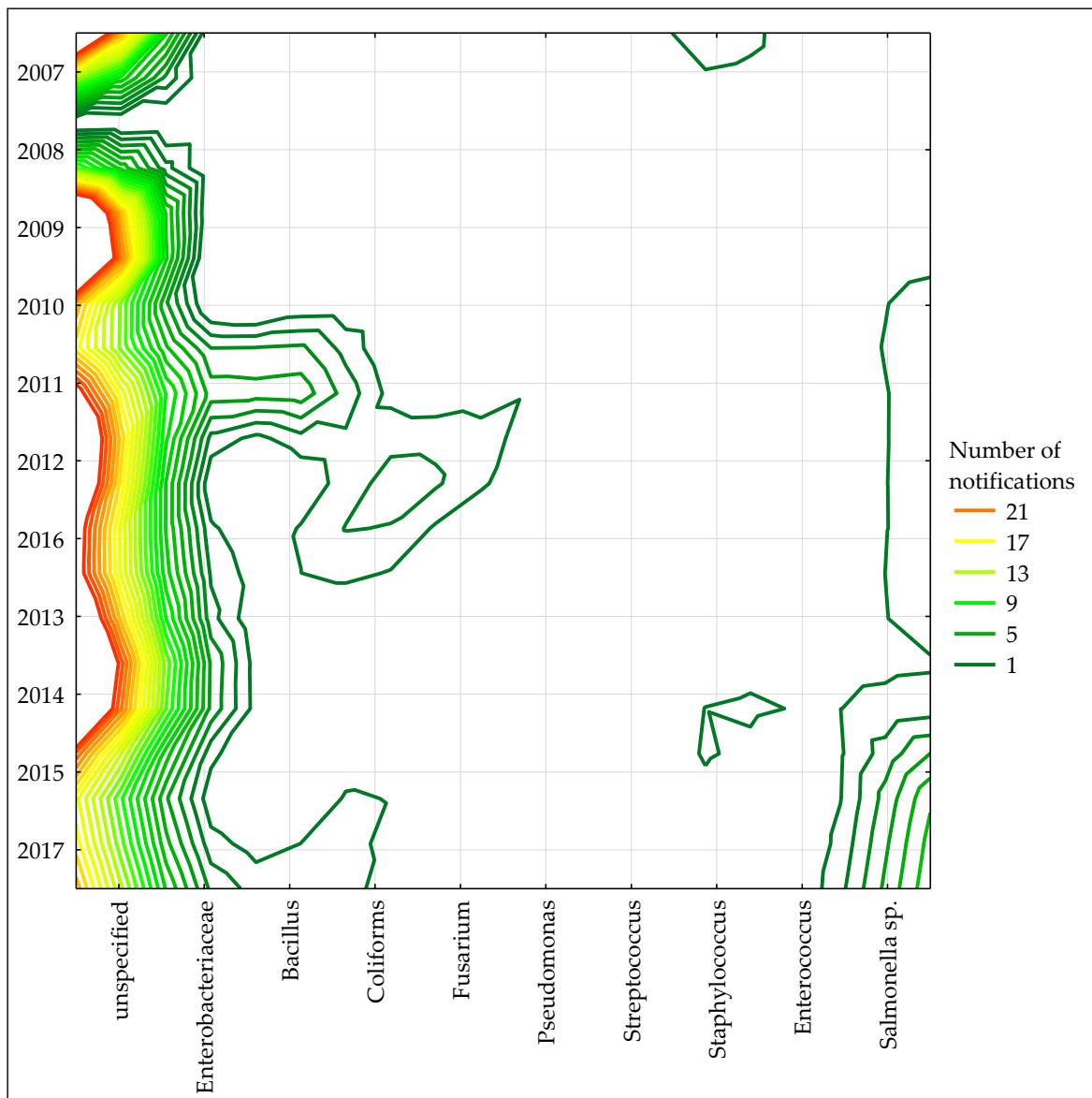


**Figure S62.** Similarities of RASFF notifications on non-pathogenic microorganisms and risk decision within food using two-way joining.

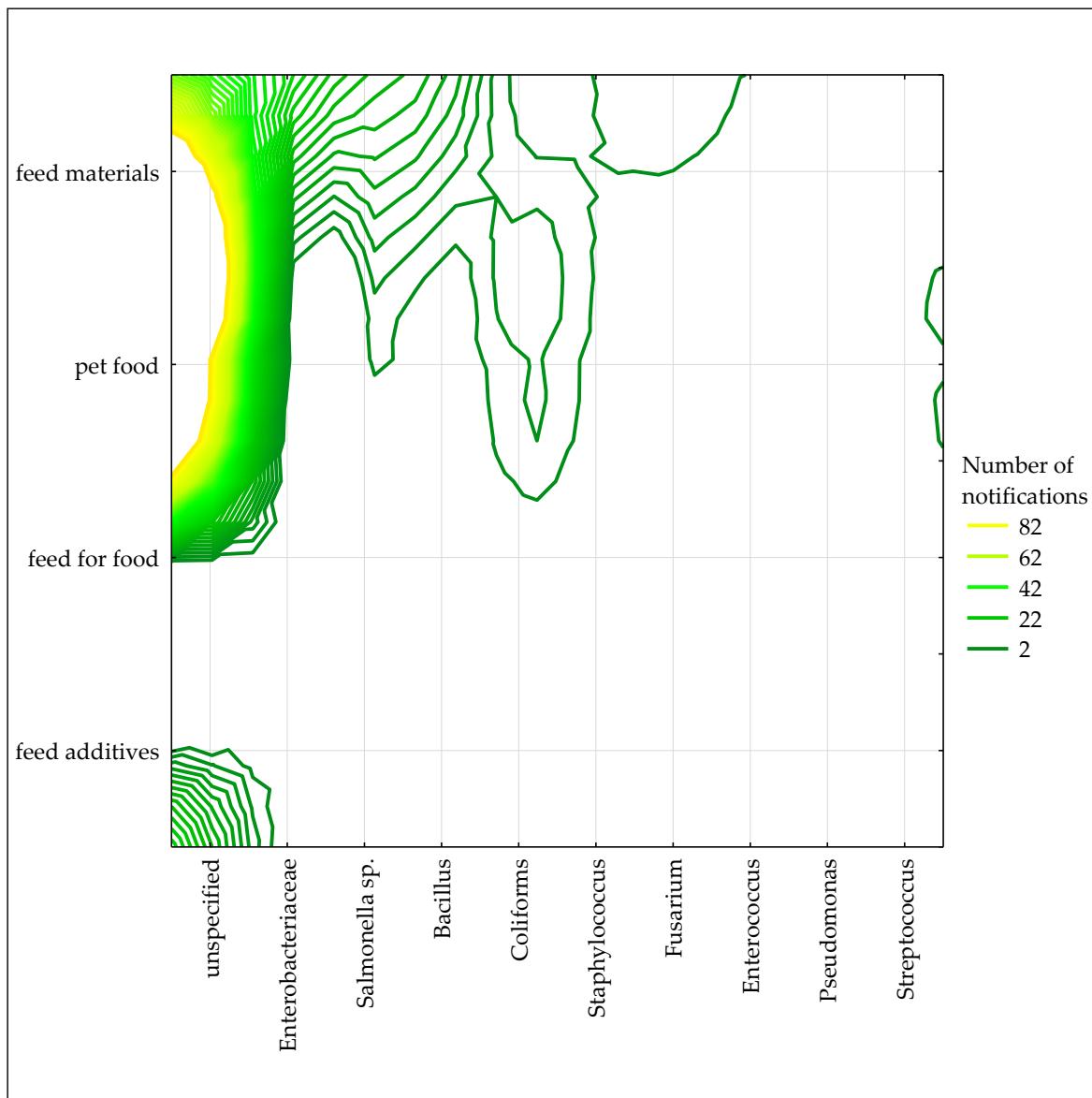


**Figure S63.** Similarities of RASFF notifications on non-pathogenic microorganisms and action taken within food using two-way joining.

import not auth. – import not authorised  
 informing auth. – informing authorities  
 ph. treat. - heat – physical treatment - heat treatment  
 ph./ch. treatment – physical/chemical treatment  
 prohibition to trade – prohibition to trade - sales ban  
 recall – recall from consumers  
 recall/withdrawal – product recall or withdrawal  
 re-dispatch/destruction – re-dispatch or destruction  
 withdrawal f. recipient – withdrawal from recipient(s)  
 withdrawal – withdrawal from the market

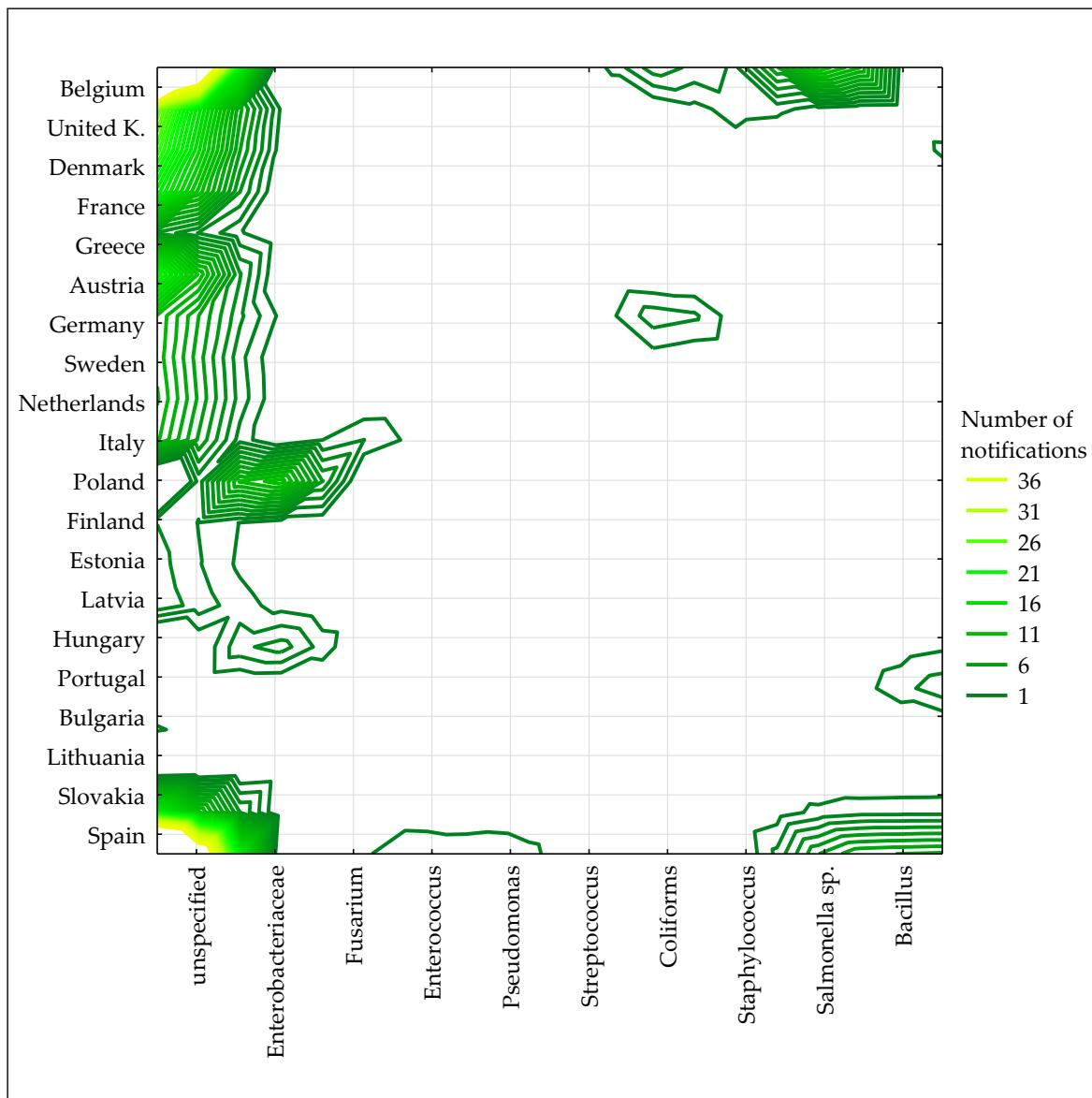


**Figure S64.** Similarities of RASFF notifications on non-pathogenic microorganisms and year within feed using two-way joining.

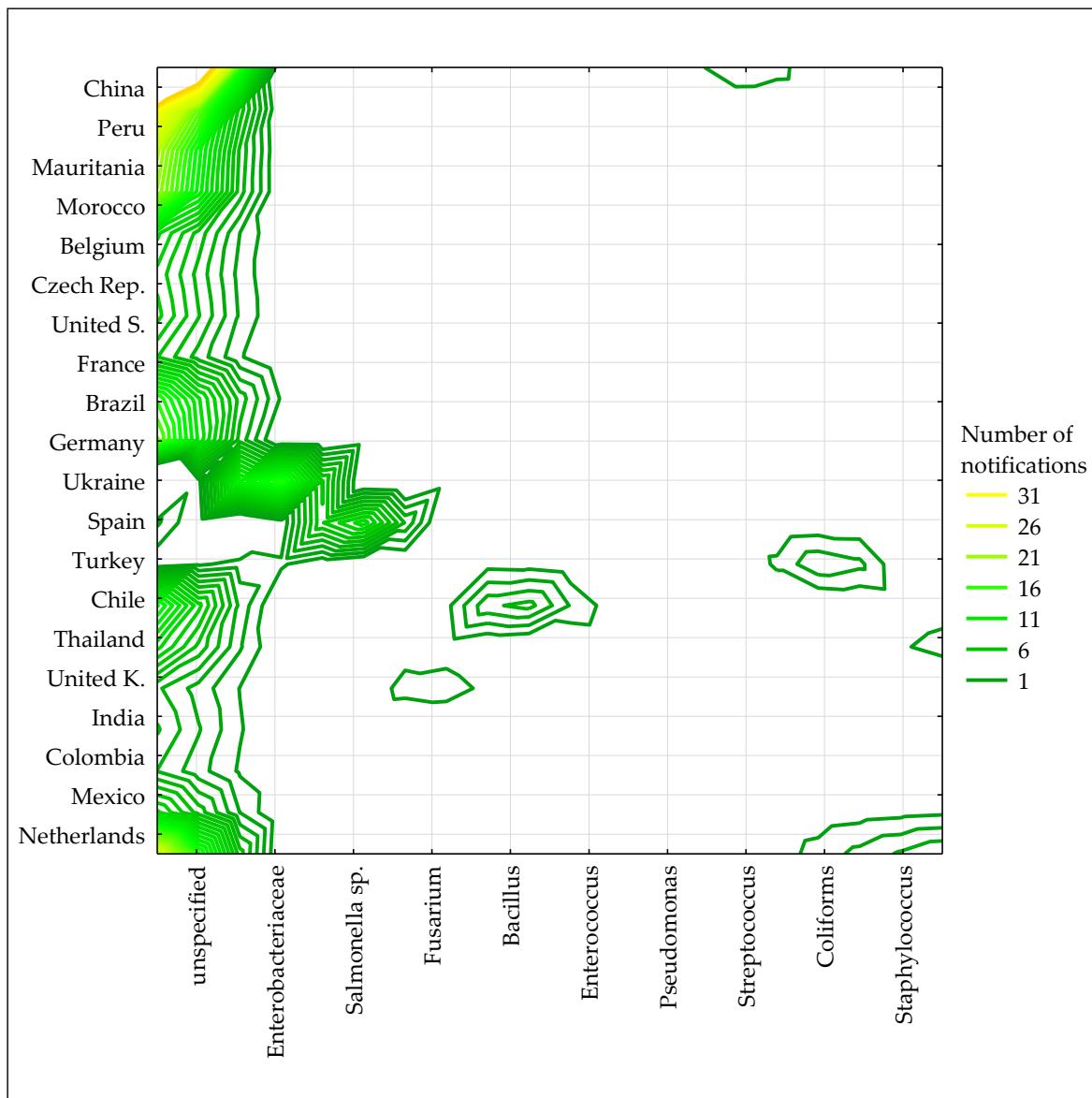


**Figure S65.** Similarities of RASFF notifications on non-pathogenic microorganisms and product category within feed using two-way joining.

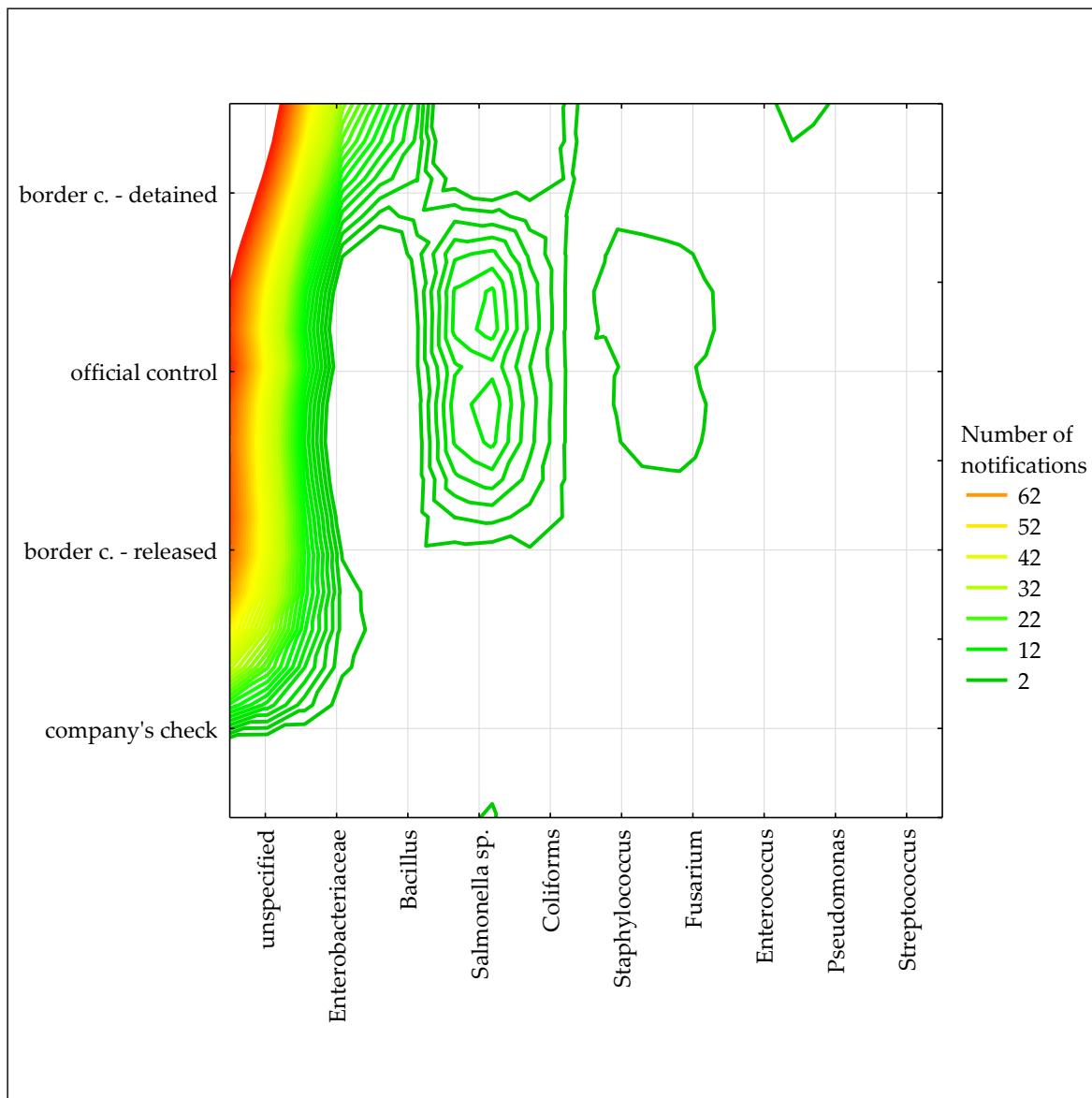
feed for food – feed for food-producing animals - (obsolete)



**Figure S66.** Similarities of RASFF notifications on non-pathogenic microorganisms and notifying country within feed using two-way joining.



**Figure S67.** Similarities of RASFF notifications on non-pathogenic microorganisms and origin country within feed using two-way joining.



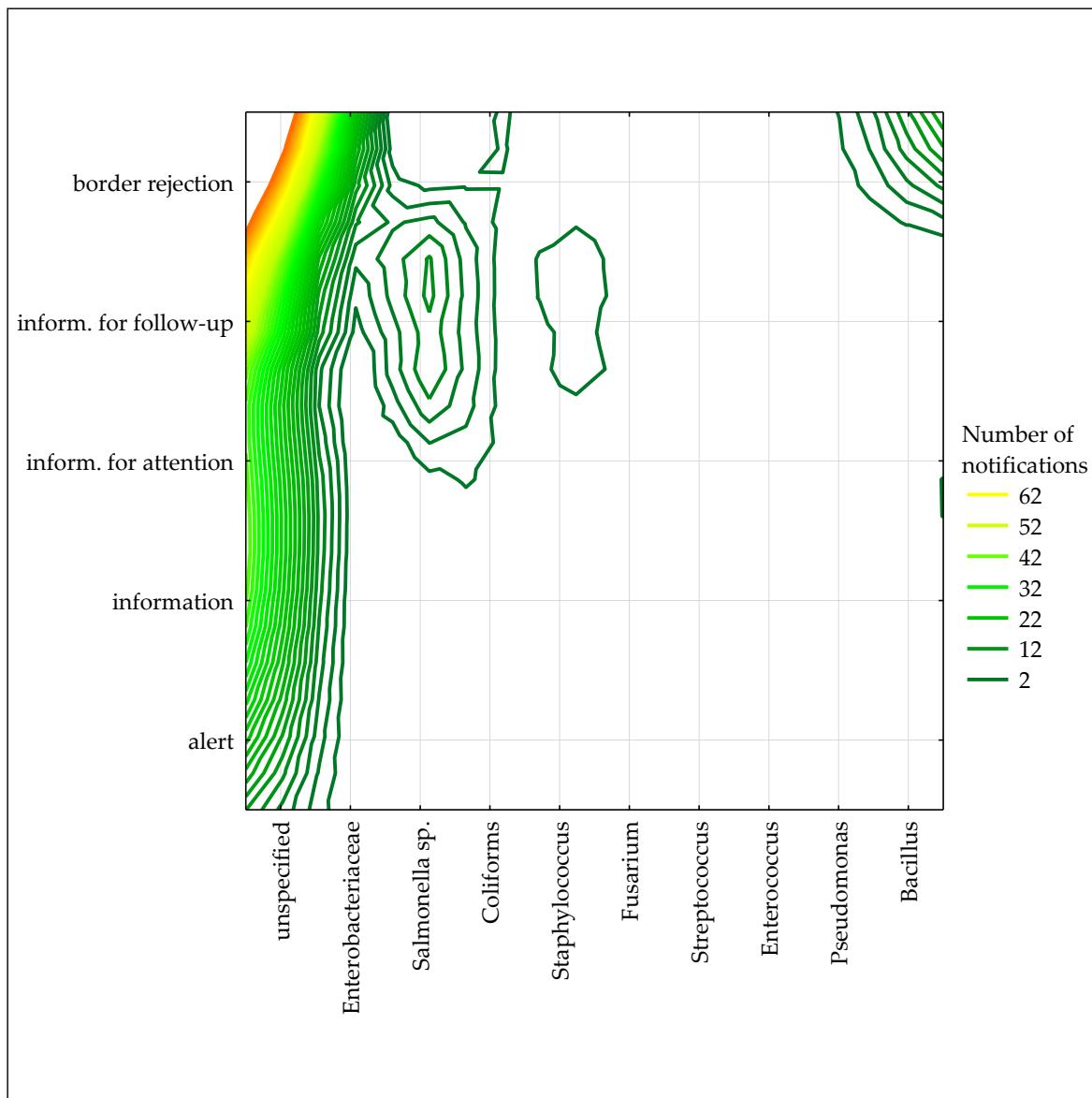
**Figure S68.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification basis within feed using two-way joining.

border c. - detained – border control - consignment detained

border c. - released – border control - consignment released

company's check – company's own check

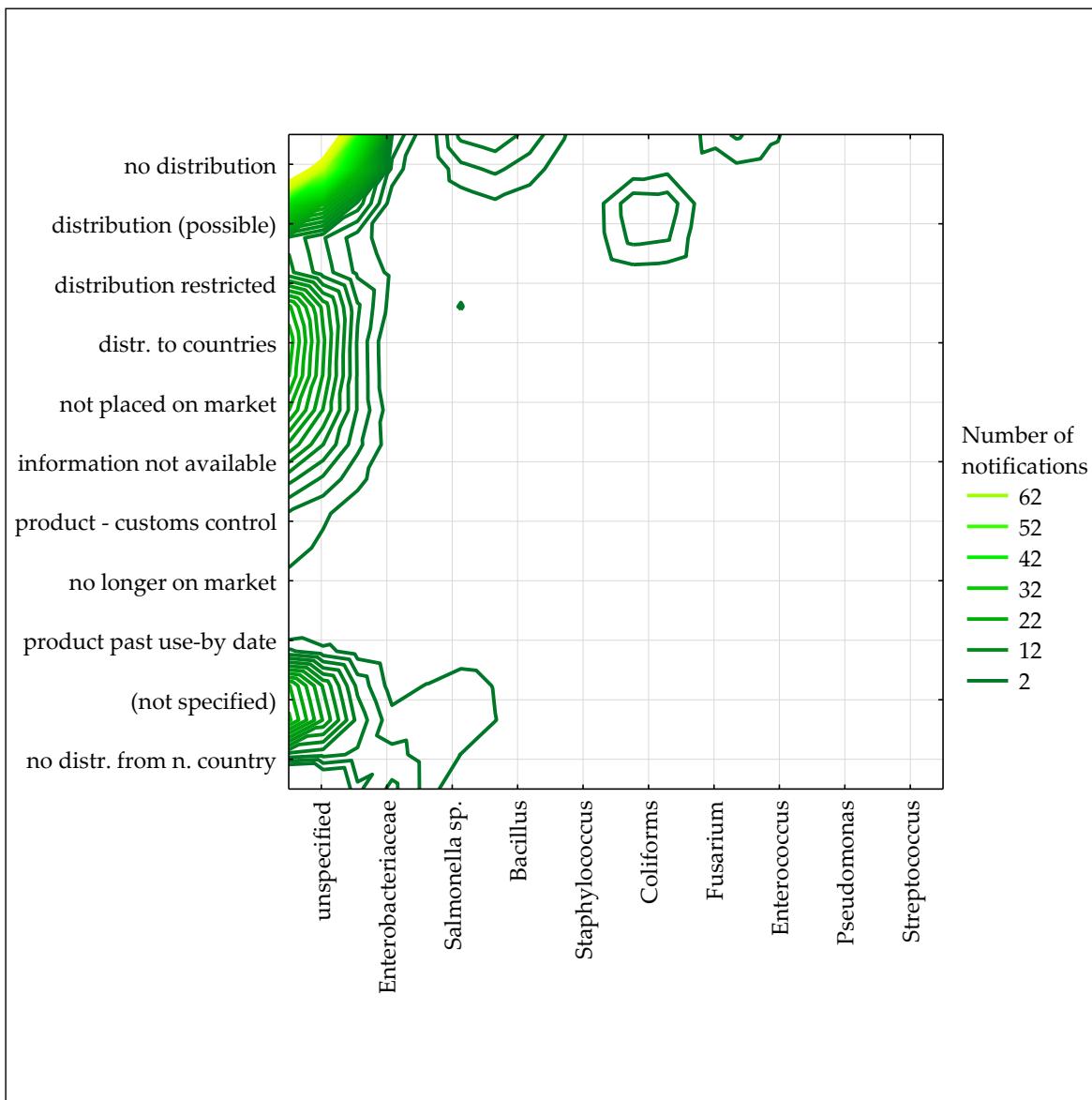
official control – official control on the market



**Figure S69.** Similarities of RASFF notifications on non-pathogenic microorganisms and notification type within feed using two-way joining.

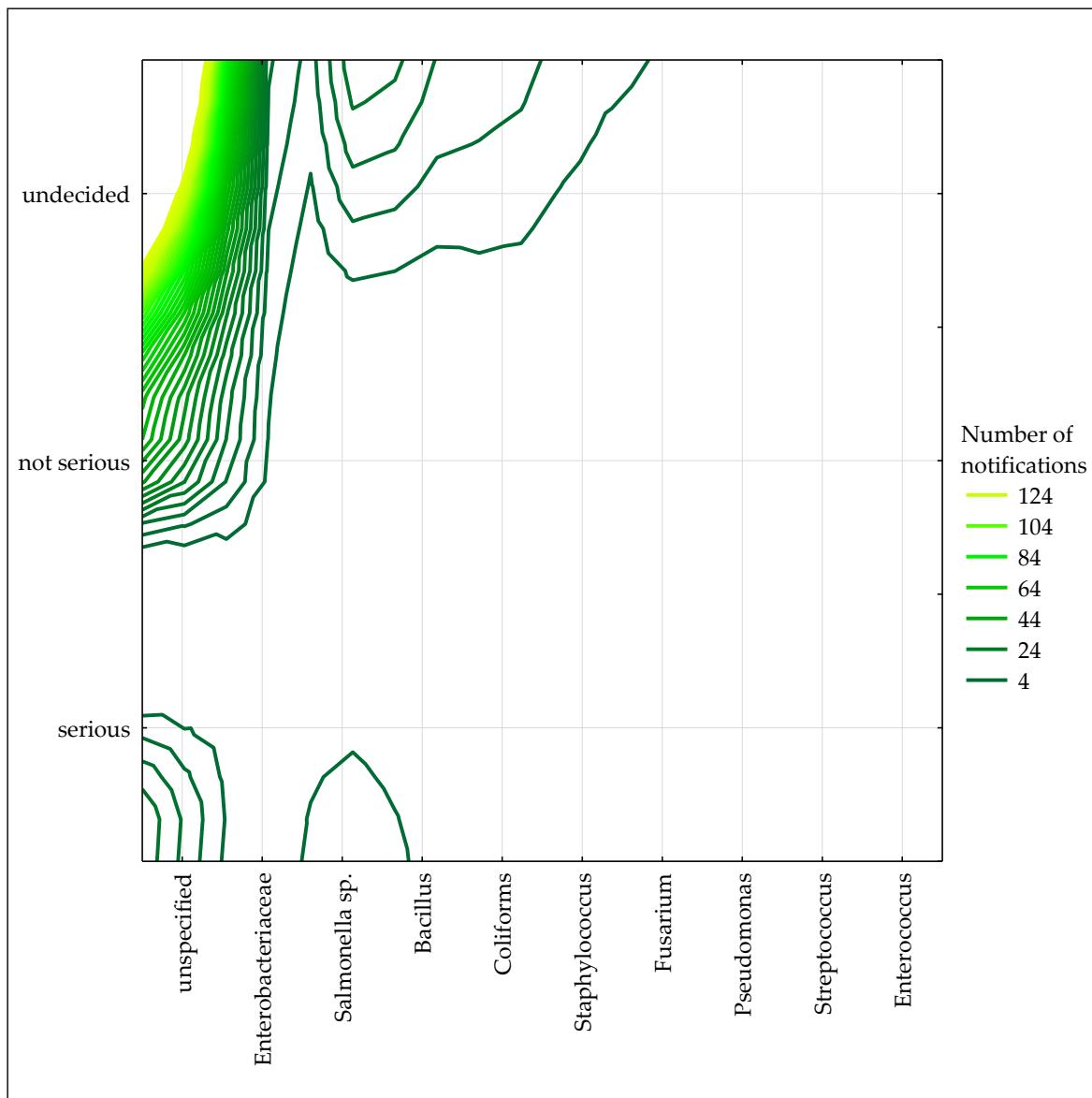
inform. for attention – information for attention

inform. for follow-up – information for follow-up

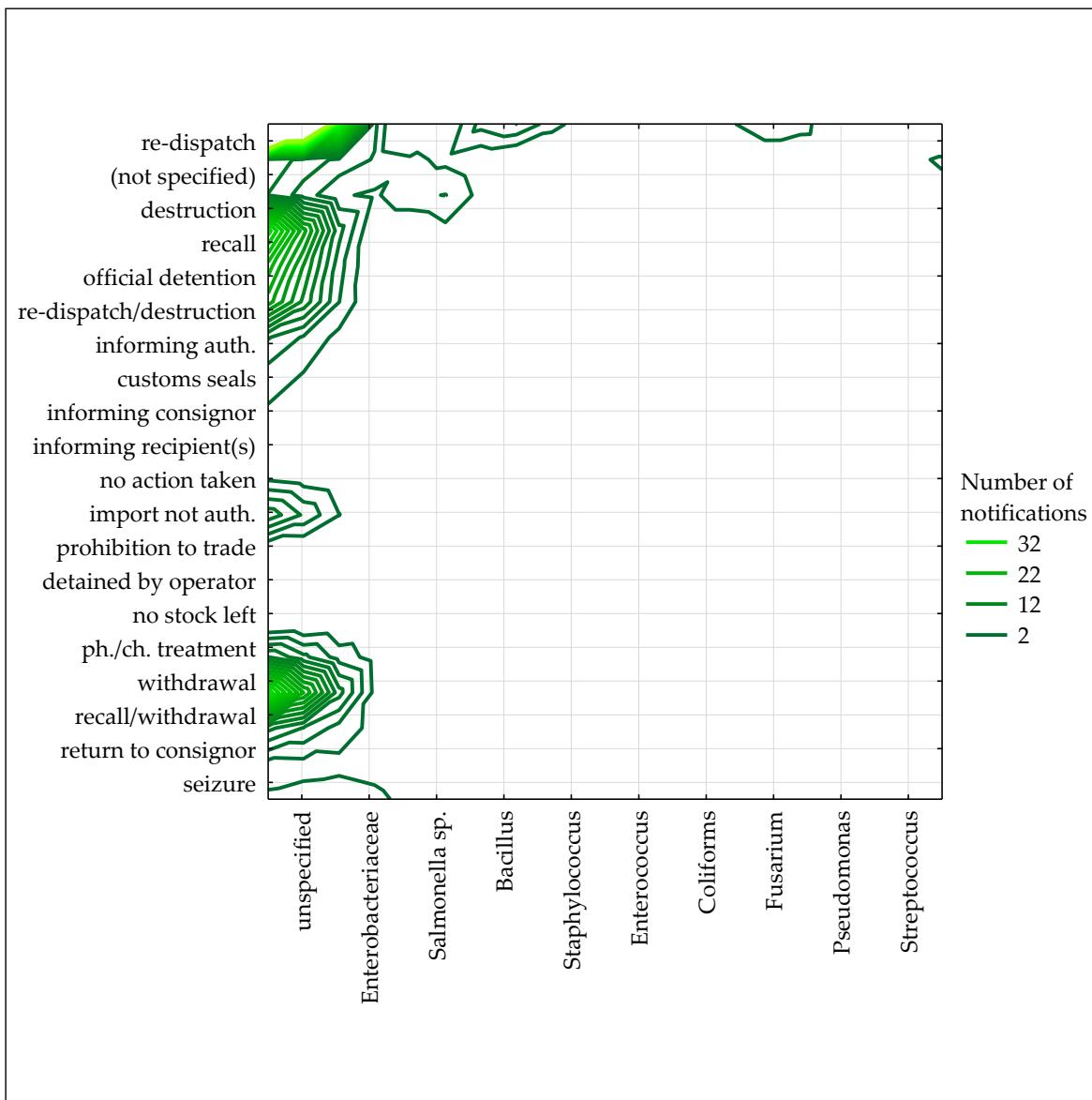


**Figure S70.** Similarities of RASFF notifications on non-pathogenic microorganisms and distribution status within feed using two-way joining.

distr. to countries – distribution to other member countries  
 distribution (possible) – distribution on the market (possible)  
 distribution restricted – distribution restricted to notifying country  
 information not available – information on distribution not (yet) available  
 no distr. from n. country – no distribution from notifying country  
 no longer on market – product (presumably) no longer on the market  
 not placed on market – product not (yet) placed on the market  
 product - customs control – product under customs control



**Figure S71.** Similarities of RASFF notifications on non-pathogenic microorganisms and risk decision within feed using two-way joining.



**Figure S72.** Similarities of RASFF notifications on non-pathogenic microorganisms and action taken within feed using two-way joining.

customs seals – placed under customs seals  
 import not auth. – import not authorised  
 informing auth. – informing authorities  
 ph./ch. treatment – physical/chemical treatment  
 prohibition to trade – prohibition to trade - sales ban  
 recall – recall from consumers  
 recall/withdrawal – product recall or withdrawal  
 re-dispatch/destruction – re-dispatch or destruction  
 withdrawal – withdrawal from the market