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2020

International Conference on
**AGRICULTURE,
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AND FOOD RESEARCH**
(AEFR-2020)

Sept 08-09, 2020

www.irdcp.org

ISBN: 978-81-947261-6-6

International Conference on Agriculture, Environmental, and Food Research Sept 08-09, 2020

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DOI: [10.22161/conf.aerf.2020](https://doi.org/10.22161/conf.aerf.2020)

Publisher

IRDCP

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About Conference

International Conference on Agriculture, Environmental, and Food Research (AEFR-2020)

During the worldwide lockdown due to COVID 19 pandemic, a lot of important activities have come to a halt. However, when we look at the brighter side, all of us have more time for adding to our knowledge and insights.

With this aim, to keep contributing to learning and motivation International research and development Center for publication is going to organize a two-day International Conference with the title "**International Conference on Agriculture, Environmental, and Food Research (AEFR-2020)**" on Sept 08-09, 2020 through online mode.

We hope, this online mode of the conference in COVID-19 pandemic will be an appreciable step in promoting the research activities and new information between researchers, developers, students, academicians and practitioners working in and around the world by keeping the social distance in view to stop the spread of COVID-19 disease. This conference aims is to present the current researches being carried out in the field of social science and education development around the globe.

Prospective authors from academia as well as industry are invited to submit their abstracts that illustrate original/unpublished works and industrial applications describing advances and significant innovations in the field.

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Message

I am extremely pleased to share that International Research and Development Center for Publication (IRDCP) is organizing a two days International Conference on **Agriculture, Environmental, and Food Research (AEFR-2020)** on Sept 08-09, 2020.

I am sure the state of art lectures from the invited experts and the research findings of researchers, academicians, utility engineers will enrich the knowledge of all the participants. It will provide an excellent opportunity for students to learn new ideas.

I offer my best wishes to the whole team of the organizing committee, the participants, and volunteers for the grand success of the conference.

Dr. Kiran
Convenor AEFR-2020

Message

I am happy to know that International Research and Development Center for Publication (IRDCP) is organizing a two days International Conference on **Agriculture, Environmental, and Food Research (AEFR-2020)** on Sept 08-09, 2020. I am sure that, this conference would provide an ideal platform for the academicians, scholars and experts to present and exchange their research findings and Ideas.

I wish the conference a great success.

Praveen Kumar Rajpurohit
Fonterra Future Dairy Private
Limited, Mumbai, India

INDEX

Susceptibility of environmental *Aspergillus* isolates to azole compounds isolated from fungicide exposed and non-exposed soils from plantations

Francine de Sales Dorneles, Rogério Antonio de Oliveira, Carlos Alberto Passinho Campos, Gabriel Manzi Oliboni, Miriam Randó Araujo, Nayara Moreno Martins, Marilene Rodrigues Chang, Cibebe Tararam, Akira Watanabe, Maria Luiza Moretti, Marcia S.C. Melhem

2

Food from By Product: Development and Quality Evaluation of Cooked Meat Rolls from Combination of Goat Rumen (Tripe) and Goat Skeletal Meat

M. Anna Anandh

4

Quality and Acceptability of Cooked Sausages from Turkey Meat

M. Anna Anandh

6

Development and Quality Evaluation of Extruded Meat Snack Food Incorporated with Different Extenders and Turkey Meat

M. Anna Anandh

8

Section, species and susceptibility profile to azoles in *Aspergillus* spp. isolated from atmospheric air in urban and rural areas in southeastern Brazil

Carlos Alberto Passinho Campos; Rogério Antônio de Oliveira; Gabriel Manzi Oliboni; Larissa Ortolan Levy; Cibebe Aparecida Tararam; Juliana Possato Fernandes Takahashi; Milena Bronze Macioni; Lucas Xavier Bonfietti; Akira Watanabe; Maria Luiza Moretti; Marcia de Souza Carvalho Melhem

10

Effect of some plant extracts alone and in combination on multidrug resistant sewage bacteria from Kolkata, India

Ripan Chandra Das, Shyamapada Mandal

12

Diagnostic application of ultrasonogram of heart and associated structures in prognosis of TRP in cows

M.Venkatesan, M. Saravanan, P.Selvaraj, S.Yogeshpriya, K.Jayalakshmi, M.Veeraselvam and N.Premalatha

14

Management of whitefly (*Bemisia tabaci* Genn.) on tomato crop (*Solanum lycopersicum* L.) using bio-pesticides for food safety and environmental sustainability

Sunil Kr. Ghosh

16

Clinical, Parasitological and Ultrasonographic Findings in a Jersey Crossbred Cow with Concurrent Infection of Paramphistomes and *Fasciolagigantica*

M. Venkatesan, A. Latchumikanthan, M. Saravanan, A. Meenakshisundaram, M.K.Vijayasarathi, K.Jayalakshmi, M.Veeraselvam and N.Premalatha

18

Publics Perceptions of the Effects of Forest and Land Fire Smoke on Health in Central Kalimantan: A Case Study

Lilis Suriani, Ferdinand, Salampak, Masliani

20

Abstract of AEFR-2020

Susceptibility of environmental *Aspergillus* isolates to azole compounds isolated from fungicide exposed and non-exposed soils from plantations

Francine de Sales Dorneles,¹ Rogério Antonio de Oliveira,² Carlos Alberto Passinho Campos³, Gabriel Manzi Oliboni², Miriam Randó Araujo², Nayara Moreno Martins¹, Marilene Rodrigues Chang¹, Cibele Tararam³, Akira Watanabe⁴, Maria Luiza Moretti³, Marcia S.C. Melhem^{1,2}

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Abstract— Aspergillosis is an air-borne disease transmitted the inhalation of *Aspergillus* conidia. The fungi habits in great abundance in the soil and spreads over vegetation that is in the stage of decomposition, thus making people agricultural workers subjected to volumes of conidia capable of cause infection. Aspergillosis treatment occurs with triazoles, being itraconazole, voriconazole, and posaconazole the most used. Non-pharmaceutical triazole compounds of the same chemical class and mechanism of action of the drugs are also employed in agricultural plantations to control phytopathogenic fungi and for wood conservation. *Aspergillus* present in soils is accidentally exposed to these compounds, resulting in selective pressure of environmental resistant strains. Such strains if infective could led to resistance to azole drugs therapy resulting in clinical failure. The objective of the study is to characterize the fungicide susceptibility of *Aspergillus* to fungicidal compounds in exposed and non-exposed soils. About 100g of soil was aseptically collected, at a soil depth of 15 cm in 3 different points of the same plantation, and 5 grams of each sample were analyzed for *Aspergillus* colonies by suspending in saline solution and plated onto Dicloran Rose Bengala agar incubated at 35°C for up to 7 days. MICs of the isolates were evaluated against voriconazole, itraconazole and posaconazole according to reference broth microdilution method for antifungal susceptibility testing of mold (CLSI, 2008), complemented with agricultural fungicides difenoconazole, tebuconazole, and metconazole. A total of 35 isolates were identified phenotypically as *Aspergillus*. The interpretation of the results of the azole MICs against each strain of *Aspergillus* was made based on the epidemiological cutoff values proposed by Espinel-Ingroff and coworkers (2010). Statistical analysis of results suggests that the distribution of itraconazole-MIC, posaconazole-MIC, and voriconazole MIC ($p < 0,05$) in the Sections Fumigati and Nigri were higher in plantation exposed to fungicides. For the remain Sections Flavi and Terrei no differences were

verified. The relevance of this study shows that azole fungicidal usage could play a role in cross resistance to azole drugs among environmental *Aspergillus* isolates. More data is needed to better assess the occurrence of azole resistance and correlated molecular mechanisms related to soil management.

Keywords— Concentration, Minimum Inhibitory, Exposure, Environment, Fungus Drug Sensitivity Tests.

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Food from By Product: Development and Quality Evaluation of Cooked Meat Rolls from Combination of Goat Rumen (Tripe) and Goat Skeletal Meat

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Abstract— Rumen musculature otherwise known as ‘tripe’ and colloquially called as ‘*potti*’, is one of the important edible offal of goats and its accounts for 1.3 % of slaughter weight. The yield of goat tripe ranges from 0.77 to 1.0 kg with a mean value of 0.53 kg in goats. Tripe is one of the protein rich by product obtained from slaughter house. Development of value added products from goat tripe is very limited because its inherent toughness due to high collagen content, off odors, poor functional properties and shelf life. The material offers good scope for processing in to products, subject to successfully overcoming these limitations. In this perspective, a study was conducted for the preparation of ready to eat cooked meat rolls from combination of goat rumen (50%) and goat skeletal meat (50%). Two types of cooked goat tripe meat rolls were prepared viz. ground batter based goat tripe meat rolls and emulsion based goat tripe meat rolls. The meat rolls prepared from 100% goat skeletal meat was used as control. pH, product yield and moisture retention values were significantly ($P<0.05$) higher in emulsion based goat tripe meat rolls as compared to ground batter based goat tripe meat rolls. However, diameter shrinkage, shear force and drip loss values were significantly ($P<0.05$) lower in emulsion based goat tripe meat rolls as compared to ground batter based goat tripe meat rolls. Moisture, protein and fat content values between ground batter based goat tripe meat roll and emulsion based goat tripe meat rolls did not differ significantly between them but differ significantly ($P<0.05$) from control. All physico-chemical parameters and sensory evaluation scores of emulsion based goat tripe meat rolls were comparable with control. Goat tripe meat rolls prepared by using emulsion had better physico - chemical characteristics and were rated “very palatable”. Goat tripe meat rolls prepared by using ground batter were rated “moderately palatable”. Thus, goat tripe (rumen) can be successfully used for value addition into preparation of value added *comminuted* meat products by using emulsion or ground batter and emulsion based goat tripe meat rolls more acceptable than ground batter based goat tripe meat rolls.

Keywords— Batter, Emulsion, Goat, Ground, Meat, Rolls, Rumen, Tripe, Quality

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Quality and Acceptability of Cooked Sausages from Turkey Meat

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Abstract— Commercial turkey (*Meleagris gallopavo*) farming is becoming popular in India and farmers started to show interest in rearing turkey birds. Popularization of turkey meat and meat products through efficient processes is necessary to upgrade this back yard activity to a commercial business. Heavier size of turkey carcass make its effective utilization in retail sale is a difficult task under Indian condition. Development of further processed value added meat products from the turkey meat would be the most profitable way of utilization turkey meat from heavier size turkey carcasses. In this perspective, a study was conducted to develop and assess the quality and acceptability of cooked meat sausages from turkey meat. Cooked meat sausages prepared from broiler chicken meat were used as control. Significantly ($P<0.05$) higher pH, product yield (%), moisture retention (%), moisture (%), protein (%) and fat (%) were observed in turkey meat cooked sausages. The product shrinkage (%) was significantly ($P<0.05$) higher in broiler chicken meat sausages as compared to turkey meat sausages. No significant differences were observed in microbial counts between the broiler chicken meat and turkey meat cooked sausages. Sensory evaluation scores results indicated that cooked meat sausages prepared from turkey meat were rated “moderately to very palatable” and were comparable with cooked meat sausages prepared from broiler chicken meat. Therefore, it can be concluded that, turkey meat can also be successfully used for preparation of cooked meat sausages of acceptable quality.

Keywords— Acceptability, Broiler, Cooking, Meat, Sausages, Turkey, Quality, Acceptability.

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Development and Quality Evaluation of Extruded Meat Snack Food Incorporated with Different Extenders and Turkey Meat

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Abstract— Extrusion has been used in the cereal industry for several years to produce many foods and food ingredients such as breakfast cereals, snack foods, baby foods, pasta products, extruded bread, modified starches, beverages powders, meat and cheese analogues, textured vegetable proteins and blended foods such as ground meats. Consumer acceptance of extruded foods is mainly due to convenience, value, attractive appearance and texture. The incorporation of meat in these snacks is a good alternative in its nutritional value particularly high value animal protein. In this perspective, a study was conducted for the preparation of extruded snack foods from turkey meat with three different extenders viz. corn flour, rice flour and wheat flour. Turkey meat snack food was prepared with incorporation of 50% rice flour, 50% corn flour and 50% wheat flour. The corresponding levels of turkey meat were 50%, 50% and 50% in the respective formulations. Control snack food contained 100% turkey meat and no extender. Other snack ingredients viz. added water (90% of the flour used (on weight basis), common salt (2.5%), baking powder (2.5%), condiments mix (5.0%) and spice mix (2.5%) were added over and above turkey meat and extenders combination. Significantly ($P<0.05$) lower pH values were observed in corn, rice and wheat flour incorporated extruded turkey meat snack foods as compared to control snack. Significantly ($P<0.05$) higher bulk density, moisture, protein and fat were observed in control as compared to extender added extruded turkey meat snack foods. However, significant ($P<0.05$) reverse values were observed for hydratability, water absorption index and water solubility index. The corn, rice and wheat flour incorporated extruded turkey meat snack foods were rated “moderately to very palatable”. However, the overall acceptability scores were significantly ($P<0.05$) higher for rice flour incorporated extruded turkey meat snack foods.

Keywords— Acceptability, Extenders, Extrusion, Meat, Snack, Food, Turkey, Quality

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Section, species and susceptibility profile to azoles in *Aspergillus* spp. isolated from atmospheric air in urban and rural areas in southeastern Brazil

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Abstract— The genus *Aspergillus* encompasses 27 sections and 446 species and presents global distribution living in several ecological niches such as air, water and soil. Many species are of medical relevance because they cause severe diseases in immunocompromised patients. The main gateway for this opportunistic pathogen is the airways. The species identification is fundamental to the choice of the best clinical treatment, since each species can present different profiles of antifungal susceptibility. The phenomenon of resistance in clinical and environmental isolates of *Aspergillus* has been increasing significantly in the last decades, some resistance mechanisms may have an environmental origin and link with the use of agricultural fungicides. This project aims to isolate *Aspergillus* spp. of air samples from urban and rural areas of Southeastern Brazil and to identify the section, species and susceptibility profile of the isolates against azole drugs and fungicides. Among 58 isolates 5 Sections were identified: Fumigati (40), Flavi (9), Nigri (6), Terrei (1), Candidi (1) and not identified (1). The sequencing of the β -tubulin gene was carried out in 20 isolates and 3 species were identified: *A. fumigati* (16), *A. flavus* (3), *A. welwitschiae* (1). The MIC values observed for the most relevant clinical species *A. fumigatus* were: itraconazole (0.03 – 0.5 μ g/mL), voriconazole (0.12 - 8 μ g/mL), posaconazole (0.03 - 1 μ g/mL), metconazole (0.015–0.5 μ g/mL), tebuconazole (1 - 8 μ g/mL) and

difenoconazole (0.5 - 4 µg/mL). Low susceptibility to voriconazole, the principal azole drug used for Aspergillosis cases, as well as for the new drug posaconazole was verified in some isolates. High azole fungicide-MICs were also observed. These data add inedited information about resistance profile of enviromental *Aspergillusto* azole and fungicide azolic compounds in Brazil.

Keywords— *Aspergillus*, antifungals, azoles, fungicides, resistance.

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Effect of some plant extracts alone and in combination on multidrug resistant sewage bacteria from Kolkata, India

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Abstract— Reports are available on multidrug resistant (MDR) potential pathogenic bacteria from industrial sewage from different parts of the globe. This study explores the antibacterial activity of phytochemicals/plant extracts against potential pathogenic bacteria from sewage within from Kolkata, India. Methanolic extracts of *Plumbago zeylanica*, *Costus speciosus* and *Clerodendrum* sp., using different concentrations, were tested against five sewage bacteria from Kolkata, India: DC-1, DC-4, DC-8, DC-9 and DB-11, by agar-well diffusion method. Plant extracts were tested in combination following checkerboard agar dilution method. The antibiogram for the test bacteria were determined by disc diffusion method using 5 antibiotics. All the test bacteria were resistant to chloramphenicol (30 µg/ml) and ampicillin (10 µg/ml). Among the three plants *Plumbago zeylanica* showed remarkable antibacterial efficiency even at 500 µg/ml against the test bacteria. In combination the plant extracts had better activity against DC-4 and DC-8 strains. Phytochemicals individually and in combinations showed antibacterial activity against sewage bacteria that are potential to cause human infection. Current findings help understand in developing non-antibiotic treatment protocol. However, this requires further studies (purification of active phytochemicals, detection of combinational products and their mode of action) to be used as therapeutics.

Keywords— MDR, phytochemicals, Plant extracts, *Plumbago zeylanica*, sewage bacteria

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Diagnostic application of ultrasonogram of heart and associated structures in prognosis of TRP in cows

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Abstract— Aim of this study is to evaluate the ultrasonographic findings of Heart, Reticulum, Spleen, liver, portal vein, hepatic vein, gall bladder and caudal vena cava for the diagnosis of traumatic pericarditis. Forty-one cows with signs of jowl / brisket edema, increased heart rate, respiration rate and with the blood picture of Leucocytosis, Neutrophilia and increased hematocrit values which were presented to the Cardiology Referral Clinic, VCC, Veterinary College and Research Institute, Orathanadu, Thanjavur from July 2019 to June 2020 were selected for the study. Trans-thoracic ultrasonography of heart, reticulum, spleen, Liver portal vein, hepatic vein, gall bladder and caudal vena cava was performed with Esaote Lab version. 1ultrasound machine. Ultrasonographic findings of the pericardial effusion of varying pathologic changes were recorded. Reticulum showed uneven Surface, Abscess, moderate to complete cessation of reticular contraction. Splenic vessels were enlarged. Liver (Homogenous, hyperechoic), Portal Vein (engorged with sediments), Hepatic Vein (hyperechoic wall thickening), Gall Bladder (distended with wall thickening) and Caudal Vena Cava distended (dilated oval / circular shape) of varying changes were identified when compared to control animals. In conclusion, thoracic and abdominal ultrasonography is a non-invasive and reliable diagnostic tool for confirming the diagnosis and prognosis of disease when radiographic finding is poor with thoracic details / ground glass appearance along with indistinguishable cardiac silhouette.

Keywords— Cattle, Heart, Liver, Traumatic Reticulo-Pericarditis (TRP), Ultrasound

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Management of whitefly (*Bemisia tabaci* Genn.) on tomato crop (*Solanum lycopersicum* L.) using bio-pesticides for food safety and environmental sustainability

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Abstract— Tomato (*Solanum lycopersicum* L.) crop is susceptible to various insect pests of which whitefly (*Bemisia tabaci* Genn.) is the most predominant. Damage caused by whitefly may be directly through phloem feeding, or indirectly by transmission of viruses such as *Tomato Yellow Leaf Curl Virus*(TYLCV). Besides the feeding damage, this insect also exudes honey dew which favours the development of sooty mould. In severe infestation, this black coating is so heavy that its interference with the photosynthetic activity of the plant resulting in stunted growth. The incidence and spread of the Tomato Leaf Curl Virus (TLCV) was directly correlated with whitefly population on tomato field. The incidence of whitefly (*Bemisia tabaci* Genn.) population always remained higher on upper crop canopy of the tomato plant recording 58.37 % population followed by middle canopy (28.07% population) and lower canopy (13.56% population). Whitefly was most densely populated in the new young leaves of tomato plant on upper canopy. So sprays should be carefully taken on the upper canopy. Eight treatments were taken including one untreated control. Extracts of plant parts were done in methanol following standard method. Highly toxic chemical insecticides should not be used in tomato pest control as tomato is consumed as raw or after little cooking. From overall observation Imidacloprid resulted the best suppression of whitefly population (81.48% suppression) followed by avermectin (73.33%) and mixed formulation of azadirachtin with *Spilanthes* (71.65%) extracts and another mixed formulation azadirachtin with garlic (60.83% suppression). Three days after spraying, Imidacloprid resulted best suppression of whitefly population (82.17 % suppression) followed by avermectin (81.07 %) and mixed formulation azadirachtin with extract *Spilanthes* extracts (73.42 %) against whitefly. Azadirachtin individually did not produce higher results but when mixed with botanical extracts gave higher results of whitefly control. This may be recommended for general farmers' use. The objective of this study is to determine the efficacy of microbial toxin, the plant extracts against whitefly and to formulate suitable control measure. Microbial toxin and botanicals are bio-pesticides having lower hazardous effects on human health and environment, and therefore, they can be incorporated in organic farming and Integrated Pest Management (IPM).

Keywords— Bio-pesticides neem, avermectin, *Spilanthes*, organic farming.

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Clinical, Parasitological and Ultrasonographic Findings in a Jersey Crossbred Cow with Concurrent Infection of Paramphistomes and *Fasciolagigantica*

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Abstract— Six-years-old Jersey cross bred cow with 2-months of lactation presented to Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu with the history of jowl edema and voiding malodorous diarrhea for one month. On clinical examination of animal, slight pale conjunctival mucous membrane, jowl edema, slightly moist muzzle and watery malodorous diarrhea, 38.4⁰C bodytemperature, heart rate - 64 bpm, respiratory rate - 28 bpm was found. Ruminal consistency was doughy and contraction was 3/5min on palpation. Fecal sample examination revealed presence of bothoval shapedAmphistome eggs and golden brown coloured*Fasciolagigantica* eggs. Ultrasonography of liver parenchyma showed presence of hyperechoic small areas of hepatic parenchyma with dilated hepatic vein, portal vein and caudal vena-cava and gall bladder showed distensionwith presence of hyperechoic sediments. Oncholecystocentesis under ultrasound guidance with cholecystocentesis under ultrasound guidance in the 9th intercostal space, collected bile sample was also revealed *Fasciolagigantica*eggs with indistinct operculum. Measurement of eggs of parasites was carried using the micrometry which confirmed 151x72 µm and 162 x 91 µmsize eggs of amphistome and *Fasciolagigantica*, respectively. The animal was treated with Oxytoclozanide suspension @ 18mg/kg body weight orally and supportive therapy. Good improvement was noticed in the health status of the animal after treatment. Further examination of faecal samples from that animal did not show any parasite eggs on 15th and 30th day after treatment. In this study, ultrasonography of liver and gall bladder combined with faecal examination found to be helpful in detection and confirmation of concurrent paramphistomosis and fasciolosis.

Keywords— Cattle, Fasciolosis, Gall bladder, Liver, Paramphistomosis, Ultrasound.

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Publics Perceptions of the Effects of Forest and Land Fire Smoke on Health in Central Kalimantan: A Case Study

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Abstract— Forest and land fires in Central Kalimantan occur almost every year and cause losses to the community, especially in terms of health. The decline in public health due to smoke produced from fires requires a serious handling. To be able to overcome this problem, it is necessary to know the public perception of the impact of smoke on health so that it is expected to reduce the impact of forest fires on public health. This study aims to determine community perceptions on the impacts of smoke on the health caused by forest and land fires. This research is a descriptive study using a survey method. Data collection using a questionnaire with 100 respondents from 2 (two) regions, namely Pulang Pisau Regency and Palangka Raya City. The results showed that the perception of the community in Pulang Pisau Regency on the impact of smoke caused by forest and land fires was in the high category with an average value of 77,97% and the publics perception of the impact of fire on the environment was in the high category with an average of 75,02%, whereas the perception of the people of Palangka Raya City on the impact of smoke caused by forest and land fires was in the very high category with an average value of 81,19% and the publics perception of the impact of fire on the environment was in the very high category with an average of 81,29%.

Keywords— **Publics Perceptions, Forest, Land Fire Smoke, Health.**

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