TASK LIST

Task List for **Food Safety Research Intern** at **Skill Spire Technologies**:

Title 1: Evaluation of Microbial Contamination in Fresh Produce Supply Chains

Difficulty Level: Moderate

Research Tasks:

- Review literature on microbial contamination in fresh produce, focusing on pathogens such as Salmonella, E. coli, and Listeria.
- Collect samples from different points in the produce supply chain, including farms, processing facilities, and retail outlets.
- Perform microbiological analysis to quantify microbial loads and identify potential sources of contamination.
- Assess the effectiveness of current sanitation practices and interventions in reducing microbial risks.

Deliverables:

- PDF Report: Detailing research methodology, microbial analysis results, and recommendations for improving food safety in fresh produce supply chains.
- PowerPoint Presentation: Presenting key findings, highlighting contamination hotspots, and proposing strategies for risk mitigation.

Title 2: Impact of Food Processing Techniques on Allergen Cross-Contamination

Difficulty Level: Moderate to Difficult

Research Tasks:

- Review literature on allergen cross-contamination in food processing, focusing on common allergens and processing methods.
- Design experiments to simulate cross-contact scenarios in food processing facilities, considering factors such as equipment cleaning protocols and product handling practices.
- Conduct allergen analysis to detect and quantify allergenic residues in processed food products.
- Evaluate the efficacy of allergen control measures and sanitation procedures in preventing cross-contamination.

Deliverables:

- PDF Report: Summarizing research methodology, allergen analysis results, and recommendations for improving allergen management in food processing.
- PowerPoint Presentation: Presenting experimental findings, discussing risk factors for cross-contamination, and suggesting best practices for allergen control.

Title 3: Assessment of Chemical Residues in Pesticide-Treated Crops

Difficulty Level: Moderate

Research Tasks:

- Review literature on pesticide residues in food crops, focusing on common pesticides and their potential health impacts.
- Collect samples of pesticide-treated crops from agricultural fields or storage facilities.
- Perform chemical analysis to detect and quantify pesticide residues in crop samples.
- Evaluate compliance with regulatory limits for pesticide residues and assess potential risks to consumer health.

Deliverables:

- PDF Report: Detailing sampling methods, chemical analysis results, and recommendations for minimizing pesticide residues in food crops.
- PowerPoint Presentation: Presenting analytical findings, discussing regulatory implications, and proposing strategies for reducing pesticide exposure in food.

Title 4: Investigation of Foodborne Illness Outbreaks Linked to Dairy Products

Difficulty Level: Moderate

Research Tasks:

- Review literature on foodborne illness outbreaks associated with dairy products, examining causative agents and contributing factors.
- Collect epidemiological data on recent outbreaks linked to dairy consumption, including case reports and traceback investigations.
- Perform microbiological analysis of dairy samples to identify pathogens such as Campylobacter, Salmonella, or Listeria.
- Conduct risk assessments to identify potential sources of contamination and evaluate preventive measures.

Deliverables:

- PDF Report: Summarizing outbreak investigations, microbiological findings, and recommendations for enhancing dairy food safety.
- PowerPoint Presentation: Presenting case studies of outbreaks, discussing microbial hazards in dairy products, and proposing control strategies for mitigating risks.

Title 5: Evaluation of Food Safety Knowledge and Practices among Small-Scale Farmers

Difficulty Level: Moderate

Research Tasks:

- Review literature on food safety education and training for small-scale farmers, considering factors such as hygiene practices and microbial risks.
- Design surveys or questionnaires to assess farmers' knowledge, attitudes, and behaviors related to food safety.
- Conduct interviews or focus group discussions with farmers to explore challenges and barriers to implementing food safety practices.
- Analyze survey data to identify gaps in food safety knowledge and opportunities for intervention.

Deliverables:

- PDF Report: Presenting survey results, summarizing qualitative findings, and proposing educational strategies to improve food safety among small-scale farmers.
- PowerPoint Presentation: Highlighting survey findings, discussing educational needs, and outlining recommendations for promoting food safety awareness and behavior change.

Note: Remember, the intern needs to select any one title to complete based on their understanding and comfort level.

Ensure that your research paper and presentation materials are original work and do not contain plagiarized content. Properly cite and reference all sources used in your research to avoid academic misconduct.

SKILL SPIRE TECHNOLOGIES

TASK SUBMISSION GUIDELINES

To submit your task, please follow the guidelines below:

1. **Select Your Task Level:** Choose one task title from the provided options
2. **Complete the Task:** Conduct research based on the chosen task level, focusing on agricultural principles, methods, or technologies relevant to the assigned project.
3. **Compile Your Work:** Prepare a detailed report summarizing your research findings, methodologies used, and any insights gained. Ensure clarity and coherence in presenting your analysis.
4. **Presentation Preparation:** Create a PowerPoint presentation highlighting key aspects of your research, including visual aids, charts, and graphs where applicable.
5. **LinkedIn Video Upload:** Record a video presentation of your PowerPoint slides, providing narration to explain each slide's content. Upload this video directly to your LinkedIn profile, mentioning the organization you're interning with and sharing insights or learnings from your project. Include relevant hashtags such as #AgricultureResearch, #InternshipExperience, and any others you find appropriate.
6. **GitHub Repository Creation (Optional):** If applicable, create a GitHub repository to store any code, datasets, or additional materials related to your research project.
7. **Submission Link:** We will provide a submission link by the designated deadline. Use this link to submit your research report and any other relevant materials.
8. **Final Submission:** Submit your research report and any additional materials through the provided submission link within the specified timeframe.
9. **Review and Feedback:** Our team will review your submission and provide constructive feedback to help you further develop your research skills and understanding of agricultural concepts.

If you have any questions or need clarification on any aspect of the task submission process, please don't hesitate to reach out to your supervisor.