

Managing diseases in no-till organic farming involves several strategies to maintain soil health and control pathogens without disturbing the soil structure. Here are some key practices:

1. **Crop Rotation:** Rotate crops to break disease cycles and prevent buildup of specific pathogens in the soil.
2. **Cover Crops:** Use cover crops to suppress weeds, improve soil structure, and enhance microbial diversity, which can help in reducing disease incidence.
3. **Compost and Organic Amendments:** Apply compost and other organic amendments to improve soil fertility and stimulate beneficial microbial activity, which can help suppress diseases.
4. **Biocontrol Agents:** Introduce beneficial organisms like predatory insects or beneficial microbes that can help control disease-causing organisms.
5. **Mulching:** Use mulches like straw or organic materials to suppress weeds, regulate soil temperature, and reduce soil splash, which can spread pathogens.
6. **Resistant Varieties:** Plant crop varieties that are resistant or tolerant to common diseases in your area to minimize disease impact.
7. **Sanitation:** Practice good sanitation by removing crop residues and weeds that can harbor pathogens and cleaning equipment to prevent spreading diseases.
8. **Integrated Pest Management (IPM):** Implement IPM strategies to monitor pests and diseases and use a combination of cultural, biological, and mechanical controls to manage them effectively.
9. **Soil Health Management:** Focus on improving overall soil health through practices that enhance microbial diversity, organic matter content, and nutrient availability, which can indirectly reduce disease pressure.

By combining these practices, organic farmers can effectively manage diseases while preserving the benefits of no-till agriculture and organic principles.

JADAM (Japanese Agricultural Development and Mechanization) is a method developed by Youngsang Cho for sustainable and low-cost farming practices, including natural pesticide and disease control solutions. Here's a basic DIY recipe for a disease control solution based on the JADAM approach:

JADAM DIY Disease Solution Recipe

Ingredients:

- 1 kg garlic bulbs (or 300 grams of garlic cloves)
- 1 kg hot peppers (chili peppers)
- 1 liter of fermented plant juice (FPJ) (e.g., from comfrey or other plants)
- 10 liters of water
- 50 grams of soap (natural, non-detergent)

Instructions:

1. **Prepare Garlic and Hot Peppers:**

- Crush or grind the garlic bulbs and hot peppers thoroughly. You can use a blender or food processor for this step.

2. ****Make the Extract:****

- Mix the crushed garlic and hot peppers with water in a large container (e.g., a bucket or barrel). Stir well to combine.

3. ****Fermentation Process:****

- Cover the container loosely with a cloth or lid that allows for some air circulation. Store the mixture in a warm place (ideally around 20-30°C) for about 3-7 days to ferment. Stir the mixture daily during fermentation.

4. ****Strain the Solution:****

- After fermentation, strain the liquid to remove solid particles. You can use cheesecloth or a fine mesh strainer for this step.

5. ****Add Soap:****

- Mix in the soap to help the solution adhere to plant surfaces. Stir gently to incorporate.

6. ****Dilute and Use:****

- Dilute the concentrated solution with water at a ratio of 1:10 (1 part solution to 10 parts water) before use. Mix well before applying.

****Application:****

- Spray the diluted solution on plants affected by diseases, ensuring thorough coverage of both sides of leaves and stems.
- Apply during cooler times of the day to avoid rapid evaporation and maximize absorption.

****Notes:****

- This solution is a broad-spectrum natural pesticide and disease control method. It can help suppress fungal diseases, bacterial infections, and some pests.
- Always perform a small-scale test spray on a few leaves before applying to entire plants to check for any adverse reactions.

By following this recipe and method, you can create a DIY disease control solution based on the principles of JADAM for organic and sustainable farming practices.

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